

**SUSTAINABILITY**

Carbon neutral by 2035,  
then carbon negative

**PEOPLE & CULTURE**

Hobbies increase  
wellbeing at any age

**TECHNOLOGY**

Global leader in cellulose-  
based textile fibres

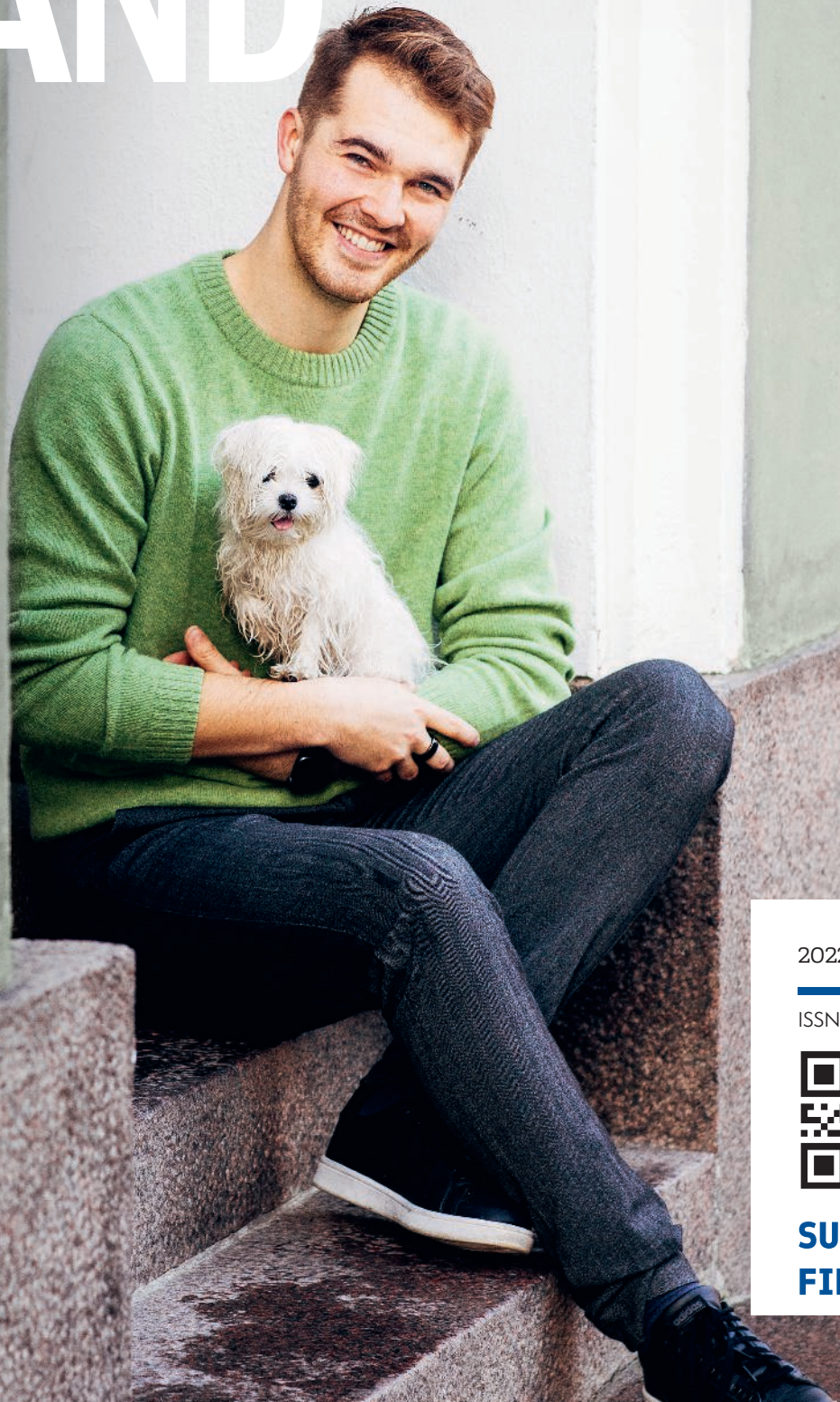
**FUN**

Lots to see,  
lots to experience

# THIS IS FINLAND

## Future working life

Futurist Perttu  
Pölonen believes  
in human skills



2022–2023

ISSN 2343-2624



**SUOMI  
FINLAND**



## 2 | FEELING FINLAND

By Päivi Brink  
Photo Julia Kivelä

# A BREATH OF FRESH AIR

Helsinki's archipelago, just offshore, offers Baltic pleasures from vigorous exercise to mindful meditation. Take beautiful Pihlajasaari Island, ten minutes by ferry from the mainland. It has forest hiking trails, cliffs by the sea and long sandy beaches with two saunas.

Even in these troubled times when everyone needs to avoid large crowds, Finland is a safe country to visit with plenty of space and fresh air. The country is sparsely populated and there are peaceful nature destinations to visit all year round. Finland has over 188,000 lakes, and forests cover about three quarters of the country. Wherever you are in Finland, a wild nature destination is nearby and easy to access.

 [visitfinland.com](https://www.visitfinland.com)









# EMPATHY AND HOW IT WORKS

When the pandemic forced us apart all over the world, work organisations in Finland and many other countries were able to quickly adapt because the technological tools and conventions for remote working were already widely in use. Our social lives have also become largely digital in recent years. However, meeting online is just not the same as in person. What happens when our social connections are mostly digital for a prolonged period of time?

Humans are a hyper-social species. We need the presence of others to experience meaning and happiness in life, to solve problems and achieve magnificent things. The internet allows us to keep in touch during the pandemic, but the quality of this connection is not as rich as when we meet face to face.

We don't see another's expressions at all in text-based communication like chats, making it difficult to understand emotions and intentions. In video conferencing, the lag leads us to talk over each other more than we do when we are in the same room. In short, our brains need real-time information from others for our empathy mechanisms to work fully.

Empathy is connected to trust. We need to connect properly to be able to rely on each other and stay together. This is true of societies, too. With the global increase in misinformation, synthetic media and online efforts to influence, I think we urgently need to find new ways for increasing empathy, authenticity and trust, especially in online environments.

Could Finland have some answers? The level of trust in Finnish society is continuously high, and the level of corruption low. In the field of cybersecurity, our know-how has for long been at the global forefront. We have internationally renowned crisis management expertise, and our role in peace negotiations is globally recognised.

The problems we face can only be solved with large international collaboration in science, business and government. Empathy brings people together and it enables the trust that fuels joint efforts. ●



**Katri Saarikivi** is a cognitive neuroscientist and leader of a research group at the Cognitive Brain Research Unit of the University of Helsinki.

## About the Magazine

Available in English, Chinese, French, German, Russian and Spanish. To read the magazine online or order free paper copies, please visit [toolbox.finland.fi](http://toolbox.finland.fi). For paper copies you can also contact the nearest Finnish embassy.

EDITOR-IN-CHIEF Mika Hammarén  
 EDITORIAL BOARD Julia Bushueva, Hetta Huittinen-Naskali, Elina Järvenpää, Laura Kamras, Peter Marten, Heli Nissinen, Lotta Nymann-Lindegren, Maija Palomäki, Meira Pappi, Tsui-Shan Tu, Sari Tuori  
 EDITORIAL STAFF Otavamedia OMA  
 COVER PHOTO BY Vilja Harala  
 PRINTED BY PunaMusta Oy  
 PUBLISHERS  
 Ministry for Foreign Affairs of Finland, [um.fi](http://um.fi)  
 Business Finland, [businessfinland.fi](http://businessfinland.fi)  
 Finnfacts, [finnfacts.fi](http://finnfacts.fi)  
 Sitra, [sitra.fi](http://sitra.fi)  
 ISSN 2343-2624



this is  
**FINLAND.fi**

**SUOMI  
FINLAND**

## Stories illuminated

This magazine is printed on Finnish UPM Finesse – a woodfree, coated silk paper. It is made of virgin wood fibre from Finnish woods and produced in Kouvola UPM Kymi's mill in southeast Finland. UPM Finesse Premium Silk has PEFC certificate and fulfils the Nordic Swan criteria.





# THIS IS FINLAND

## 2022–2023



- 6 | **FINNISH EVERYDAY LIFE**  
Features of the future work life
- 12 | **MEET & GREET FINLAND**  
Explore the festivals and events
- 14 | **WE MAKE IT WORK**  
The national agenda: carbon neutrality
- 20 | **A FINN WITH A MISSION**  
Professional footballers
- 23 | **COLUMN**  
Digging deeper into happiness
- 24 | **KEEP IT SHORT**  
Six points about Finland
- 26 | **KNOWLEDGE DRIVEN**  
Fashion goes sustainable
- 30 | **WORD ON THE STREET**  
Not conventional clothes



26



20

32 | **CULTURE**  
Hobbies for all ages

36 | **IN TOUCH**  
From urban to natural



12



### FACTS ABOUT FINLAND

**POPULATION:** 5.54 million  
**TOTAL AREA:** 338,435 km<sup>2</sup>, of which 10% is fresh water  
**BIGGEST CITIES:** Helsinki (capital), Espoo, Tampere, Vantaa, Oulu and Turku  
**OFFICIAL LANGUAGES:** Finnish and Swedish  
**GOVERNMENT:** Independent republic since 1917  
**CURRENCY:** Euro  
**JOINED THE EU:** 1995

**GDP PER CAPITA:** €42,936 (est. 2020)  
**TOP SECTORS FOR FOREIGN INVESTMENT:** Business services, ICT, healthcare and wellbeing, retail, cleantech  
**TOP AREAS OF EMPLOYMENT:** Services, financial and business services, trade and hospitality, manufacturing, transport and communications



By Päivi Brink, Susanna Bell  
Photo Vilja Harala

# CREATING NEW PATHS FOR FUTURE CAREERS

Multitalented composer, inventor and futurist Perttu Pölönen helps people find their way in the ever-changing labour market. He believes that continual technological progress will increase the need for uniquely human skills.

**At** the time of our interview, **Perttu Pölönen** had just returned from the Eurasian Media Forum in Kazakhstan, where he had taken part in a panel discussion about the future of the labour and education markets. He gives hundreds of speeches every year to audiences at home and abroad.

"Tomorrow I am travelling to Austria to give a keynote about future skills in the EuroSkills competition," he says. "It is wonderful since I believe in cooperation and networking."

Technology helps us stay globally connected, but it also has changed the way we look at our own skills and our children's education. Visionaries such as Pölönen can help us understand the technologically driven working life of the future.

## PROFESSIONAL IDENTITY BASED ON SKILLS

Pölönen encourages us to build our professional identity around the skills we have instead of a named profession.

"Instead of telling others your job title, tell them what you can bring to the community," he says. "Describe your identity: Who are you? An educator, perhaps, or a mediator, campaigner, problem solver, unifier or collaborator? Think about the needs of the community and the feelings you bring to it. This way you are not limited to one profession but start seeing many professional options as the world around us keeps changing fast. Skills are more important than job titles."

He has built a remarkable career for someone who is only 26 years old. How would he describe his skills?

"I see myself as someone who brings colour, adds spice and clarifies the topic at hand. I seek information and recognise ideas that I can expand together with others. I can clarify connections between issues. I also hope I can help others by working according to my values."

## WORK LIFE IN THE NEAR FUTURE

If we continue along the path we are on now, working life will become increasingly polarised.

"In the future, there will be more low- and high-wage sectors than today," says Pölönen. "The employment market will become more global. There will be more microentrepreneurs, and one person will have multiple work identities. I believe that, in the future, everyone will have to take more responsibility for their own work and presenting their skills."

What about salary? Surely it will still be important?

"It will, but the growth of general wealth and the acute need for sustainable lifestyles will reduce the importance of money in wellbeing states," he says. "There is less need for continuous growth when it does not meet real needs. I believe people will also come to see the value of their leisure time."

"Instead of asking about each other's job titles, we should ask about each other's interests. I want to hear stories people tell about themselves," says Perttu Pölönen.



## THE INVENTOR OF MUSICLOCK

Perttu Pölönen (born in 1995) is a futurist, inventor and author. He studied future technologies at the Singularity Education Group, based in Silicon Valley, and cofounded an edtech company in Myanmar. He has won the EU's biggest youth science competition. In 2018, MIT Technology Review included him in its list of 35 Innovators Under 35 in Europe.

Pölönen has invented MusiClock, Sävelkello in Finnish, which helps music students learn scales, chords and intervals. He has turned his invention into a product and an application that are now used all around the world.

 [getmusiclock.com](https://getmusiclock.com)

### **Books by Perttu Pölönen:**

*Future skills* (original in Finnish: *Tulevaisuuden lukujärjestys*), Viva Editions.

*Tulevaisuuden identiteetit* (*Future Identities*, available in Finnish only), Otava.







“TO COUNTERBALANCE DIGITAL DEVELOPMENT, HUMANITY MUST NOT BE FORGOTTEN. IN THE FUTURE HUMAN SKILLS WILL BE APPRECIATED EVEN MORE THAN TODAY.”

#### THE HUMAN FACTOR IN THE DIGITAL AGE

Technology will have a huge impact on working life in the future.

“The internet will support equality when everyone in the world has access to it, but we are not there yet,” says Pölonen. “It is vital to get versatile teams to develop technology, so that everyone can use it and it meets everybody’s needs. Technological development is too important to be left to a small and homogenous group of engineers.”

While artificial intelligence and robotics are changing the way we look at work, there are still some core skills that only humans possess.

“To counterbalance digital development, humanity must not be forgotten. On the contrary, in the future human skills will be appreciated even more than today.”

Amidst the third industrial revolution, it is time to think about what we humans can bring to the workplace.

“Can AI replace teachers?” he asks. “Technology can help the teacher realise, for example, what is difficult for children and what they already understand. However, a teacher can take the needs of a child into account in a way that a robot cannot. Teachers can read the child’s body language and show emotions like interest and caring. Humans can recognise an optimal moment to teach something. Humans have sensitivity and emotional intelligence that technology lacks.”

#### THE IMPORTANCE OF EDUCATION

In the future, the most valuable skills may not be easily discernible based on the applicant’s qualifications.

“How do you prove you are good at creative problem-solving or that you have a great sense of humour?” Pölonen says. “These human qualities are difficult features to measure, but they are features that only humans can bring to working life.”

He himself studied music composition at the esteemed Sibelius Academy in Helsinki, but after graduating he realised that he wanted to do many other things as well. He studied future technologies with the Singularity Education Group in Silicon Valley. From there he went to Myanmar and started an edtech company.

“Education remains very important, but the focus should be on skills, not on diplomas,” he says. “Studying gives you skills you can use in many professions, like project management, communication and critical thinking. I am a strong supporter of interdisciplinary teams, because the issues we need to solve today are very complex. We cannot afford to look at them from a limited perspective.”

Instead of focusing on degrees, Pölonen emphasises constant, lifelong learning.

“The internet is full of learning material that is easily accessible, often free, and constantly updated.”

Currently the world needs people who have the skills to imagine our future.

“Futurology helps us remain conscious of our choices and the direction we are going. It helps us make the world a better place, since the future is the product of our concrete actions. Instead of proceeding as fast as possible, we must see what is relevant for the future.” ●





Photo Seppo Samuli / Lehtikuva

The pandemic made our open spaces feel even more attractive. Helsinki's Rhododendron Park is always a place of summer beauty.

## CHANGING PRIORITIES AND LIFESTYLES

**The Covid-19 health and economic crisis is one of the biggest global challenges of our times. It has profoundly influenced where and how we work and spend our free time. A study for Sitra, the Finnish Innovation Fund, suggests that many of the changes wrought by the pandemic will not be reversed.**

**D** ecluttering was already in fashion before the pandemic, but being forced to spend more time at home, many more people decided to get rid of possessions. After clearing space by storing, recycling or just throwing things away, most intended to continue in their new ways

The Sitra report is based on 20 interviews conducted in the capital region in June 2020 and a quantitative study conducted in September 2020 with 1,500 people, covering the biggest cities in Finland. It does not claim to predict the future, but points to new dynamics. The

Covid-19 crisis may be a seeding ground for more lasting changes in society, it says.

Being forced to work, socialise and exercise in the same rooms, people decided to make their homes more versatile. Others thought about working for part of the year from a second home or holiday house.

The market for holiday houses did indeed surge in spring and summer 2020. However, the authors don't see a big change in attitudes to living in several places. Most people still want to have one primary home.

In cities, green areas experienced a surge of new visitors as bars and nightclubs closed. The people interviewed for the report said they now enjoy more simple pleasures like walking and bicycle trips, and do not intend to give them up.

### A MORE SUSTAINABLE FUTURE?

Up to 60 percent of the workforce started working remotely when the virus surged, and about half of those would like to continue doing more telework than before. Public transport has lost

passengers, and not all are returning.

The authors of the study think that leisure travel may not return to its pre-Covid levels, as people opt for fewer if longer overseas trips. Some interviewees said they would prefer to stay home if the environmental cost of travel becomes too high.

The report found a renewed sense of pride in Finland. As people prepared more food at home, about a third bought more local produce. Many said they would continue. They visited grocery stores less often and began buying online, paying attention to whether food is healthy and ethically produced.

All in all, people have been redefining what the good life means. We may be on the cusp of a more sustainable way of life. ●

"Lifestyles after lockdown" by Oskar Korkman, Sharon Greene and Kirsi Hantula  
December 2020. Sitra studies 177  
ISBN 978-952-347-207-5 (PDF)  
ISSN 1796-7112 (PDF)



# CHANGE COUNTRIES, KEEP ON WORKING

**Finnish-American biathlon commentator and sports coach Chad Salmela moved from the USA to Finland for a year. Modern technology was essential in enabling him to continue working as a commentator for NBC.**

**U**ntil the summer of 2020, Chad Salmela was a long-time expert commentator for the biathlon on the NBC Sports Olympic channel, and the running and cross-country coach of the College of St. Scholastica in Duluth. The former member of the US national biathlon team was living happily in Minnesota with his Finnish-born wife, **Mimmu Salmela**, and their two children. Then Covid-19 happened.

“The pandemic was raging. My wife had quit her job and my job was on hold as well because the kids’ school had been cancelled.”

A fourth-generation Finnish-American, Chad had long dreamed of moving to live in Finland for a while, with an eye on improving his children’s Finnish. Now there was nothing to hold them back. The family picked the town of Jyväskylä as their new address. Mimmu’s parents lived there, and Chad was attracted by the local passion for sports.

He still had his job with NBC, who needed to keep the show on air without spreading Covid-19, so he enthusiastically covered the world championships. Little did the viewers know the commentator was working remotely, thousands of miles away.

“NBC sent me a kit with monitors, headset and so on, and I made a deal with a Jyväskylä incubator called Crazy Town. I rented a room from them and turned it into my studio. I did shows for NBC from there, around 40–50 in all.”

## GREAT INFRASTRUCTURE FOR EASY REMOTE WORKING

Chad says he is impressed by the level of Finnish digital infrastructure. He connected effortlessly with the NBC Sports studio in Stamford, Connecticut. When he still lived in the US, he used to fly in.

“I had no internet glitches so I could keep working through the pandemic. I could have done it from my Jyväskylä home except that it was too noisy there.”

All he needed was an internet connection, and the sound delay was less than half a second. “Delay was my first concern. It is always a challenge but everything went well. It gave NBC the confidence to do shows in the same way in the future, although I will fly in for the Olympics.”

The Salmela family moved back to the USA in the summer of 2021. Now resettled in Minnesota, Chad is happy to see his parents and long-time friends again but he misses the Finnish infrastructure, its affordability and its great functionality.

“The Finns are more connected, and cell phone subscriptions are cheaper, too!” ●

Chad and Mimmu Salmela and their two children enjoyed all seasons during their stay in Jyväskylä.



Photo Chad Salmela



## CASE

EVERYTHING  
ONLINE

**According to the European Commission's Digital Economy and Society index, Finland has the best public digital services in the EU.**

Many matters are handled electronically in Finland that in other countries require a visit to an authority or service provider. Most Finns go online to pay their bills, sign utility and employment contracts, lease apartments, apply for loans or register for educational courses.

**vero.fi** File your tax return, apply for a different rate on your tax card, ask for an extension for paying your taxes or join the prepayment register. These are just a few of the services available.

**tulli.fi** Submit a customs declaration, ask for permits and look for other information you need from the Customs Service, in Finnish, Swedish and English.

**kanta.fi** Access all the information on your health filed by healthcare providers at any hospital, healthcare centre, pharmacy or private clinic. You can also check your prescription and vaccination status, as can all healthcare providers you authorise.

You can handle almost all permit matters with the Immigration Service using the online service **enterfinland.fi**, except for some residence permits, travel documents, a Schengen visa and asylum requests.

If you join the **Suomi.fi** message service, the authorities will stop sending you letters via mail. Instead, you will receive emails that point you to the appropriate online service, where their messages will be waiting for you once you sign in.

Confused? **Palveluneuvonta.fi** has an English-language chat service that will guide you through all the various government online services.

Photo Jussi Hellsten / City of Helsinki



## IDENTIFY YOURSELF!

The common denominator for most of this is that you need a bank ID to prove who you are, and before you can get that, you need a personal identity code or identification token. These in turn require a residence and work permit if you are a foreigner.

Help is on the way. The Authenticator Identification Service allows foreigners acting on behalf of a company to use participating public administration e-services.

Foreigners register their user identifier (UID) and verify their identity using the Authenticator application. In connection with the first identification, the user takes a selfie and a photo of their passport or national ID card. The identification service confirms the person's identity if the two match.

"After registration and initiating the application, foreigners can log in to the e-service using their user identifier or email, their password and their application PIN," says **Maria Nikkilä**, unit director at the Ministry of Finance. ●

[digital-strategy.ec.europa.eu/en/policies/countries-digitisation-performance](https://digital-strategy.ec.europa.eu/en/policies/countries-digitisation-performance)



## 12 | MEET & GREET FINLAND

By Maria Öfverström

Photos Martti Kainulainen/Lehtikuva, Moomin Characters™, Santa Claus Village, Petri Anttila, Venni Ahlberg, Charala, Timo Nieminen, Tero Sivula/Lehtikuva

# TREASURE TROVE OF EVENTS

Finland is full of international festivals, presentations of art and music, the beauty of nature and other gems waiting to be discovered.



### Pori Jazz 8.–16.7.2022

One of the world's longest-running major jazz events, Pori Jazz never fails to feature top names from near and far. The unique atmosphere, diverse programme, fine services and delightful surroundings attract about 400,000 visitors every year. Among the highlights of Pori Jazz 2022 will be US superstar **John Legend** and the British recording artist **Emeli Sandé**.

[porijazz.fi/en](http://porijazz.fi/en)



© Moomin Characters™  
Theme park created by Dennis Livson

### Moomin World 11.6.–21.8.2022

A children's theme park based on the Moomin books by **Tove Jansson**. The blueberry-coloured Moomin House is the main attraction. Guests can also explore Hemulen's house, Moomin Mamma's kitchen and the fire station. All over the park, you'll bump into Moomin characters.

[moominworld.fi](http://moominworld.fi)



### Santa Claus Village, open every day

Always remember: Santa lives in Finland. You can cross the magical Arctic Circle and meet him at Santa Claus Village, just outside Rovaniemi, the capital of Lapland.

[santaclausvillage.info](http://santaclausvillage.info)





### Helsinki Festival 12.8.–4.9.2022

The capital has the largest arts festival, which is once again providing a great programme of events throughout the city. Experiences will range from classical to world music and pop, from drama to contemporary dance, and from visual art to film and children's events. This is a festival that brings the arts to everyone!

[helsinkifestival.fi/en](https://helsinkifestival.fi/en)



### Mänttä Art Festival 12.6.–31.8.2022

Our largest summer exhibition of contemporary art appoints a new curator every year, ensuring that the exhibition always provides a fresh perspective on the entire field of Finnish contributions.

[kuvataideviikot.fi/en](https://kuvataideviikot.fi/en)



### Midnight Sun Film Festival 15.–19.6.2022

The concept of the Midnight Sun Film Festival is awesome. People from all over the country and the world come to a small town in Lapland to watch movies day and night. You won't even notice if it's day or night because the sun doesn't set at all.

[msfilmfestival.fi/en](https://msfilmfestival.fi/en)



### Salmela Art Centre, Mäntyharju 11.6.–14.8.2022

A multi-arts programme incorporating exhibitions of Finnish contemporary art and concerts. Salmela is situated in the historical parish village of Mäntyharju by Lake Pyhävesi. An old parish cottage built in the 1850s serves as its oldest exhibition room.

[taidekeskussalmela.fi/in-english](https://taidekeskussalmela.fi/in-english)



### Kuopio Dance Festival 15.–21.6.2022

The largest and widest-ranging dance festival in the Nordic countries. The programme will welcome performers of the most important Finnish and international dance art of our time, as well as performances by students and enthusiasts in the field.

[kuopiodancefestival.fi](https://kuopiodancefestival.fi)



By Sami Anteroinen, Päivi Leinonen  
Illustration Otavamedia

# GOING FOR DOUBLE!

Several sectors of Finnish industry have already actively reduced emissions and are now preparing for the next stage on their low-carbon road maps. They are aiming at a twin transition, digital and sustainable.

The

corporate push is in line with the national agenda: Finland wants to be carbon neutral by 2035. The bar is set at world-record height; the EU doesn't expect to reach carbon neutrality until 2050.

But wait, there's more. After reaching carbon neutrality, Finland will go carbon negative. What's behind this strong sustainable movement from the north?

**Helena Soimakallio**, Executive Director of Sustainable Development at Technology Industries of Finland, says that companies have taken a very active role in the transition to sustainability. That's not to say that they were ignorant of these issues before.

"Finnish industry has a great track record with environmental issues but combating climate change hasn't been such a force behind key decisions until now," she says.





Photo: Technology Industries of Finland



## “FINNISH COMPANIES ARE GLOBAL LEADERS IN SUSTAINABLE INNOVATION.”

Helena Soimakallio

“Presently, we’re in a situation where there is a market for sustainable solutions, the customers and finance are there – and Finnish companies most certainly are there. The paradigm shift towards sustainable solutions is only getting started.”

### ALL TOGETHER NOW

This year, Technology Industries of Finland looked at how the 100 biggest companies in the sector are responding to climate change. It turned out that over 70 companies had carbon strategies and had also acted on them.

“What’s more, smaller companies are also going low-carbon,” she adds. “A few years ago I would never have expected sustainable thinking to spread so fast to all parts of the corporate world.”

Soimakallio talks about a twin transition, meaning that industries are shifting to sustainable and digital at the same time. Luckily, the two transitions complement each other nicely. Digitalisation in itself can cut down on carbon considerably.

“We are witnessing the electrification of society which builds on flexible energy systems and there is always a strong digital element involved.”

### FLEXIBLE, DYNAMIC R&D

In many areas, Finnish companies are global leaders in sustainable innovation – but what’s the “secret sauce”? Soimakallio believes that there is something in the Finnish mindset that is geared towards such pivots.

“Looking at research and development operations, for instance, there’s a great degree of flexibility and flat-out performance. That’s a great foundation to build on, now and in the future.”

She points to various solutions that are shaping the face of Finnish industry today: overall digitalisation, improvements in energy efficiency, utilising secondary streams and low carbon raw material sources.

“There are new business models that focus on sustainability, low carbon and circular economy from the very outset. In many cases, the technology already exists,” she points out. “Now it’s a matter of piloting and making it industrial scale.”

### THE CARBON HANDPRINT

One Finnish innovation that is making waves right now is the carbon handprint. By now, everybody is familiar with the carbon footprint that calculates total CO<sub>2</sub> impact – but the Finns have pushed the idea a bit further. Many frontrunners such as Nokia and Neste are now also reporting the positive environmental impact of their product or service throughout its life cycle, its carbon handprint.

The bigger the handprint, the better. It can be increased by improving energy efficiency, reducing the use of materials, making climate-friendly feedstock choices, developing product recyclability, reducing the amount of waste material and so on.

“In Finland, our definite strength is a large carbon handprint.” Soimakallio is a big promoter of the concept.

### FROM NEGATIVE TO POSITIVE

Developed by VTT Research Centre and Lappeenranta University of Technology – with support from Climate Leadership Coalition, a European non-profit climate business network – the carbon handprint allows companies to show true climate leadership.

“It represents an evolution in the way we innovate. While previously the code was ‘do no harm’, now the objective is even more positive: do good.” ●



## CASE

Photo: SSAB



## WHEN STEEL GOES FOSSIL-FREE

**SSAB aims to be the first company in the world to produce fossil-free steel in 2026. When their plant in Raahé goes fossil-free, the CO<sub>2</sub> emissions of Finland as a country will drop considerably.**

SSAB's steel plant in Raahé in Northern Finland is currently Finland's largest single source of greenhouse gases. In the years to come, this will change: the company aims to introduce fossil-free steel production at the plant. When the Raahé plant goes fossil-free, the CO<sub>2</sub> emissions of the entire country will drop by 7 percent. The ambitious project has an estimated price tag of over €1 billion.

SSAB, which has production plants in Finland, Sweden and the US, aims to be completely fossil-free and to eliminate the company's fossil carbon dioxide emissions by 2045. Already in 2026, SSAB aims to produce and sell fossil-free steel. At Raahé, it started technical planning for transition to fossil-free steelmaking last year. The vast decarbonisation project is

scheduled to take place in two phases, to be completed 2029–2040. Why the long transition period?

"Fossil-free steel is currently more expensive, so SSAB has to trust that the market will appreciate the added value from combating climate change," says **Helena Soimakallio** from The Technology Industries of Finland. In addition, the project needs a mega-class hydrogen plant and green energy sources to pull it off.

In 2016, SSAB and two Swedish partners announced the HYBRIT initiative, where the blast furnace process will be replaced by electric arc furnace technology using direct reduced iron, or sponge iron, obtained using green hydrogen. The current process

causes around 90 percent of the CO<sub>2</sub> emissions from blast-furnace steelmaking.

The new technology removes the need for fossil coking coal in the production of crude iron. The remaining fossil fuels needed in production will be replaced with biogas or by electrifying the processes.

SSAB's new research project, Towards Fossil-free Steel (FFS), supports its strategic goal of transitioning towards fossil-free steelmaking by mapping the solutions and alternatives to replace fossil fuels with renewable energy in steelmaking.

The FFS research project is a continuation of the 2020 Energy4HYBRIT prefeasibility project, which investigated the need and availability of biomaterial and bioenergy, and the technical and economic ways to use these in steel mill processes at SSAB Raahé. ●

**"THE CO<sub>2</sub> EMISSIONS OF THE ENTIRE COUNTRY WILL DROP BY 7 PERCENT."**

## CASE

## AGAINST GERMS – THE GREEN WAY

**To meet the growing demand for protection against viruses and bacteria, even those responsible for bad odour, NordShield, a Finnish innovator in biotechnology, is hitting the market with an alternative technology for environmental sustainability.**

The NordShield technology creates nature-inspired surfaces that are based on sustainable core ingredients from by-products of the forest industry. The company is the inventor of a proprietary, wood-based technology in the field of designing new antimicrobial surfaces that are utilised across different applications and industries. The technology was developed as a response to challenges with the environmental and health issues of conventional antimicrobial substances. Those are mainly based on silver, copper, and zinc. Heavy metals are highly antimicrobial, but at the same time, harmful to their users, accumulate in the environment and are associated with antibacterial resistance.

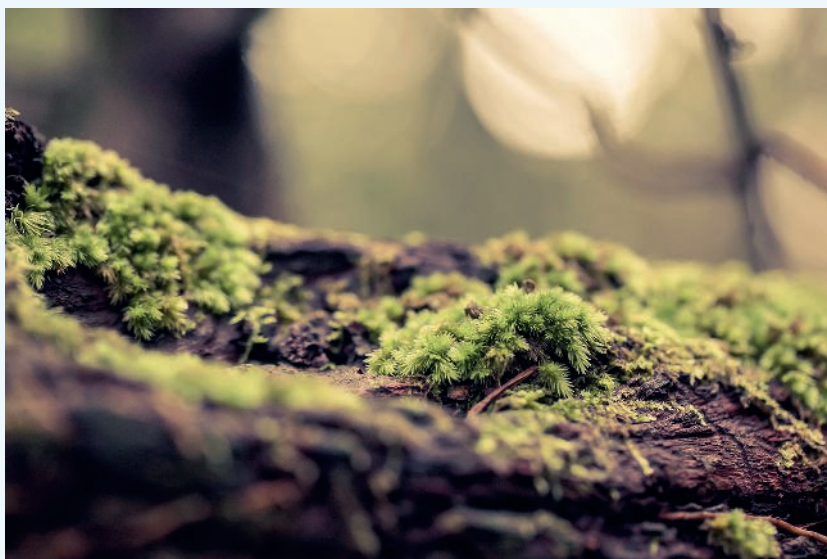
“As a novel technology, we are paving the way to the best tomorrow and are thrilled to share this path with a growing group of people who are as strongly committed to sustainability as we are,” says **Kristoffer Ekman**, CEO.

The company was founded five years ago after more than a decade of research and development to create a better alternative that is free of heavy metals. After its commercialisation in late 2020, the technology is today on the market with two product segments, both of them dermatologically tested: NordShield Fiber (textile treatment technology) and NordShield Brilliant

(technology to enhance the performance of disinfectants). NordShield provides an ultrathin protective film on the final product surface that works as a physical armour and microbe inhibitor.

**“DESIGNING NEW ANTIMICROBIAL SURFACES THAT ARE UTILISED ACROSS DIFFERENT APPLICATIONS AND INDUSTRIES.”**

“Our vision is to offer the best alternative to the usage of non-renewable ingredients and heavy metals in antimicrobial products,” Ekman says. ●



NordShield technology is based on wood for uniquely sustainable protection.





Photo Qvidja

## CASE

## AGRICULTURE THAT IMPROVES THE ENVIRONMENT

**Qvidja Estate in Southwest Finland is a centre of cross-disciplinary projects to promote methods of food and energy production that improve the state of the land and water.**

Qvidja is a farm, located in Parainen, near Turku. It has a long history dating back to the Middle Ages and it even has a medieval castle on its land. These days it is a pilot farm aiming to protect the Baltic Sea, slow down climate change and enhance biodiversity.

The pilot farm experiments how food and energy could be produced in a way that curbs emissions and sequesters carbon while cycling nutrients. Food

production is responsible for at least 25 percent of the world's CO<sub>2</sub> emissions and thus reducing its impact on nature is vital for the planet as a whole.

"I think research must be done where things take place. Fields must be studied in the fields and not in a laboratory. Here, we get to test and develop things in natural conditions," says environmental influencer **Saara Kankaanrinta**.

Kankaanrinta and her husband, investor **Ilkka Herlin**, bought the 850-hectare estate in 2015 for research and development work. They are also founders of the Baltic Sea Action Group, a foundation that aims to save the Baltic, and Carbon Action, a cooperation platform for experts from different disciplines and independent research projects.

**"THE CONDITION OF SOIL AND MICROBES HAS A SIGNIFICANT IMPACT ON CLIMATE AND WATER."**

The priority of Carbon Action's ground-breaking work is to verify the carbon stock of the soil. Scientists ranging from microbiologists to astronomers have participated in developing the calculations. The project involves 100 different types of farming around Finland. The tool used is the Field Observatory website, which illustrates the effects of carbon farming and supports the development of an international system for verifying carbon sequestration.

"In addition to research, we need to present the results in an easily understandable form, for farmers as well as decision makers."

Qvidja also aims to change policy to support effective action against climate change. For the farmer, transitioning to regenerative cultivation is neither expensive nor complicated.

"Professional pride shines through the feedback we get from farmers. They see in practice the positive outcome of their work," says Kankaanrinta.

#### MICROBES HOLD TREMENDOUS POTENTIAL

Research shows that the condition of soil and microbes has a significant impact on climate and water. The action of microbes was not previously understood well, but knowledge has accumulated in recent years.

"When the soil is healthy, it sequesters carbon. A diverse plant cover has proven useful. The more life there is in the soil, the more plants feed carbon into it, while microbes yield nutrients to plants. When microbes die, they add carbon to the soil," Kankaanrinta explains.

"In my opinion, efficiency in agriculture has been misunderstood. I believe that the correct measure of success is healthy soil. Then we reap not only an abundant crop but also beneficial environmental impacts. We have no time to lose." ●

Photo: Tapio Auvinen



#### CASE

## PAGING DR. INNOVATION!

**Maria Hospital, the first and oldest hospital in Helsinki, was repurposed as a startup hub in 2016. Maria 01 is now a leading Nordic startup centre.**

Can a former hospital become a hotbed of next-edge innovation? Why not! Enter: Maria 01, a community-driven initiative, funded and co-owned by the City of Helsinki (34%), Startup Foundation (33%), and Helsinki Enterprise Agency (33%). Maria 01 operates as a non-profit organisation that provides a grounded working model looking after its members' interests.

With 170+ startups in attendance, the 20,000 square metre super hub has positioned itself as the leading startup operator in the Nordic region. The goal is set even higher: Maria 01 wants to become the largest startup campus in Europe by 2026.

The operator of the hub is Urban Tech Helsinki, a new non-profit incubator that seeks to support and expedite the formation and early

growth of startups, focusing on those in the sustainability domain. Clean energy, mobility, sustainable construction, the circular economy, waste management and urban food production are some of the incubator's strong suites.

To facilitate this, its wider goal is to draw experts and businesses to the Helsinki Metropolitan Area in order to transform research-based innovations into international businesses. Urban Tech Helsinki also wants to work closely with large enterprises that invest in sustainable urban solutions.

Urban Tech Helsinki operates another innovation oasis, the Otaniemi Campus of Aalto University. At the legendary university campus, the aim is to remodel society through research-based information, creativity, and entrepreneurial thinking. ●



By Sami Anteroinen  
Photos Samuli Skantsi

# WHEN FOOTBALL GOES NORTH

Sportswise, Finland has always been the promised land for ski jumpers and Formula 1 drivers – lone wolves and icemen. Recently, however, national teams have been making waves with fantastic performances – and no, not just ice hockey.

To

date, the women's national football team has been more successful than the men's. They have made three trips to the European finals, as well as qualifying for the EURO 2022 hosted in the UK.

Taking their cue from the hard-charging ladies, the Finnish men reached a major tournament for the first time at EURO 2020, that was played in 2021 due to the Covid-19 pandemic.

**Linda Sällström** is the top gunner of the women's team with 50 goals (in November 2021) under her belt. Such prolific scorers are very rare, but Sällström maintains that it's still all about the team.

"Being in the team means you're working for the good of the group at all times. You ask yourself, what can I do to support the others," she says.

**Tim Sparv**, captain of the men's team, fully agrees. Representing Finland, it's not likely that you can field a team with eleven superstars. What you can have, however, is a solid team concept and players who are committed to it with their heart and soul.

"You attack as a team, defend as a team and play unselfishly for the team," he says, laying down the game plan.

## CATCH THE FEVER

Football has become increasingly popular in recent years. At the end of September 2021, there were 135,547 registered football players in Finland, according to the Football Association of Finland, and about 500,000 Finns say they play football sometimes.

Sällström traces the origins of their new team mentality to 2009, when Finland hosted the Women's Euro Cup. The women's team performed brilliantly and it was only the ever-formidable England that knocked them out of the tournament.

"That's the mentality and attitude we've nurtured since," she says. Part of that mindset is being proud and happy to represent your country.

"Every time I'm heading out to a national team practice camp, I feel really great. It's something to enjoy and cherish," Sällström says.

Sparv agrees and emphasises the importance of team attitude. Even though the men's team has gone through rough times in the past, the vibe in the locker room has always been great.





Though Linda Sällström fully enjoyed her years playing abroad, it is good to be back in Finland representing HJK.

Tim Sparv points out that any football game is mostly about effort. "You have to be demanding to get the results you want."



**NO STAR TREATMENT HERE**

A key part of the men's team mindset is being respectful of others and their needs, Sparv explains.

"It doesn't matter if you've played a hundred games for the national team or you're about to play your first. Everybody in the team is equal."

Sällström nods. For everybody to enjoy the game and the team experience, you need to have the space to be yourself.

"And when the team really clicks, the crowd picks up on it. We're really having fun out there and people can see it."

**TAKING A STAND**

Many Finnish athletes have been taking a strong stand on issues that they feel are important, like racism or other forms of inequality. Tim Sparv reveals that he's got two real "passion projects".

"I want to make people exercise more and read more." As a result, three football fields have been built in his hometown in

Western Finland, and he continues to tour schools to encourage kids (especially boys) to pick up a book.

For the women's team, making your own voice heard is equally important. "We can definitely take a stand on issues and make an impact that way," Sällström comments.

**PUTTING THE 'FAN' IN FANTASTIC**

Talking with these two footballers, there's one topic that really lights up their faces: fans. Both players agree that the emergence of Finnish fan culture has been spectacular to behold.

"It's a rough road at times, being a fan, but the sheer energy that comes from the fans is amazing, and it powers up the team," Sällström says.

Sparv is moved by the way fans flock to far-distant games. "Getting that extra support is just so important. Fans and the whole atmosphere they generate is a big reason we play the game, period." ●

**MEET & GREET WITH LINDA AND TIM**

**Linda Sällström**, 33, is the all-time highest scorer in the Finnish national football teams, men or women. Her current professional team is Helsingin Jalkapalloklubi (HJK). Previously, she played abroad for 14 years, in Sweden and in France.

When she was recruited to play professionally in Sweden in 2008, she was still in high school.

"It was something that you dream about as a teenager, but you never believe it could happen. When they asked me to go to Sweden, I was excited, but scared too."

Currently, she is already preparing for life after football; she has started studying to become a doctor at the University of Lund in Sweden.

What she has enjoyed the most during her career is simply being a member of a team. There is an earnest camaraderie in doing things together.

"With the national team, we've been in the Euro Cup three times and next summer marks the fourth time. It certainly adds extra motivation to everything we do."



**Tim Sparv**, 34, has been captain of the men's national football team since 2018. He played his first game for them in 2009. Eventually, he led the team to the Euro Cup 2020 (played in 2021). It was the first time the Finnish men's team has qualified for the Cup, causing quite a stir all around Finland.

Professionally, Sparv played for Helsingin Jalkapalloklubi (HJK) in 2021, when it clinched the national championship title in October. During his career, he has played in England, Sweden, Holland, Germany, Denmark and Greece.

"Looking back, I enjoyed my time in Holland and Denmark the most, but playing anywhere has been great," he says.

As a kid, he always knew that he would play football. Sparv credits his father Tor – his first coach – for showing him what it would take to make a breakthrough into international recognition from a tiny village in West Finland.

"I learned that, while you may have the potential to become a professional athlete, you have to work at it all the time."

## JENNIFER DE PAOLA

is a doctoral student in Social Psychology at the University of Helsinki. Her main research topic is social representations of happiness. De Paola moved from Italy to Finland in 2011 and is currently in the process of getting Finnish citizenship.

Photo Susanna Nordvall



## TRACING THE ROOTS OF FINNISH HAPPINESS ONLINE

In

2021, Finland was the number one country in the UN World Happiness Report for the fourth consecutive year. I've

been studying Finnish happiness as a researcher at the University of Helsinki since 2018. Having lived in Finland for more than ten years, I've changed my status, in a sense, from outside observer to insider as I learnt the Finnish language and applied for citizenship.

Recently, I researched what major Finnish media outlets wrote online about Finland being the happiest nation again – and also analysed the comments section of each of the articles.

The Finns appear to fall into two camps here. The first one celebrates the achievement. After all, an old Finnish proverb states that being born in Finland is like winning the lottery.

What do Finns cite as the reasons for their happiness? To dig deeper into happiness as the Finns understand it, I

studied various social media, such as Instagram and Facebook. I tracked the use of the hashtag #onnellinen (happy) online and found some interesting cases.

The #onnellinen hashtag is often connected to spending time with family and friends. Another big happiness theme is nature: often just walking around in a forest makes Finns feel happy and grounded.

A second, more skeptical camp exists – people who claim that the studies are wrong somehow. These critics maintain that they weren't interviewed for the happiness report and neither was anybody they know. Whataboutism is also frequent: performance in some international comparison is meaningless

if Finland still has, say, unemployment or lapses in elderly care.

I've found that balance is often the key word to approaching the Finnish brand of happiness. On one hand, Finns are ambitious, set targets and celebrate when those targets are met – and feel happy about their success. On the other hand, they want to enjoy the moment, experience the joy of the little things around them – and express gratitude.

**Eino Leino**, one of the Finnish national poets, wrote – and I paraphrase – that if you find happiness, you'd better hide it. More and more, in memes today, I see the old verse updated: if you find happiness, go ahead and show it. ●

“OFTEN JUST WALKING AROUND IN A FOREST MAKES FINNS FEEL HAPPY AND GROUNDED.”



By Päivi Brink

Photo Riku Isohellä



## WOMEN THRIVE IN FINLAND

In 2021, the global Women Peace and Security Index (WPS index) ranked Finland second in its report on the wellbeing and opportunities of women worldwide. Nordic countries were well represented at the top of the ranking and Norway came first. WPS Index draws on recognised data sources to measure women's inclusion, justice, and security in 170 countries. WPS index is created by Georgetown University's Institute for Women, Peace & Security.

Finland did very well in various measures, like the share of women in the parliament (46%), the share of women who use a mobile phone (100%), and have access to an individual or joint bank account or mobile payment system (99.6%). In Finland, women are well educated and there is no legal discrimination against women. Most women also feel safe in their community. ●

[giwps.georgetown.edu/the-index](https://giwps.georgetown.edu/the-index)

Photo Antti Aimo-Kaivisto



## HYDROGEN INNOVATIONS FOR PURE ENERGY

Many Finnish companies and organisations have taken the lead in the global effort to create hydrogen-based energy solutions without carbon emissions. Hydrogen Cluster Finland is a network of companies and industrial associations with more than 50 members. Green hydrogen is one of the key factors in achieving the world's emissions reduction targets.

Helsinki-based company P2X Solutions plans to have its first industrial-scale green hydrogen production plant operational in 2024. It will be a 20 MW electrolyser plant, which will run on electricity produced by renewable energy. Part of this green hydrogen will be refined further utilising Power-to-X technology. P2X Solutions will produce synthetic biofuel from the green hydrogen and carbon dioxide captured at Finnish industrial plants.

In Kokkola in Northern Finland, Hycamite TCD Technologies has launched a test facility to make clean hydrogen and pure carbon by splitting methane. Pure carbon can be used, for example, in electric car batteries. ●

[h2cluster.fi](https://h2cluster.fi)

[p2x.fi/en](https://p2x.fi/en)

[hycamite.com](https://hycamite.com)

## RECORD AMOUNTS OF VENTURE CAPITAL FOR STARTUPS

In the last couple of years, startups in Finland have raised record-breaking amounts of venture capital from local and foreign investors. The Finnish Venture Capital Association revealed that the investments in the first half of 2021 had already exceeded the total amount raised in all of 2020 (503 million euros). Finland is one of the most rapidly growing startup hubs in Europe.

International investors were especially interested in the food delivery company Wolt. It announced a 440 million-euro funding round, the largest round ever raised by a Finnish startup, before being bought by the American company DoorDash for 7 billion euros. ●

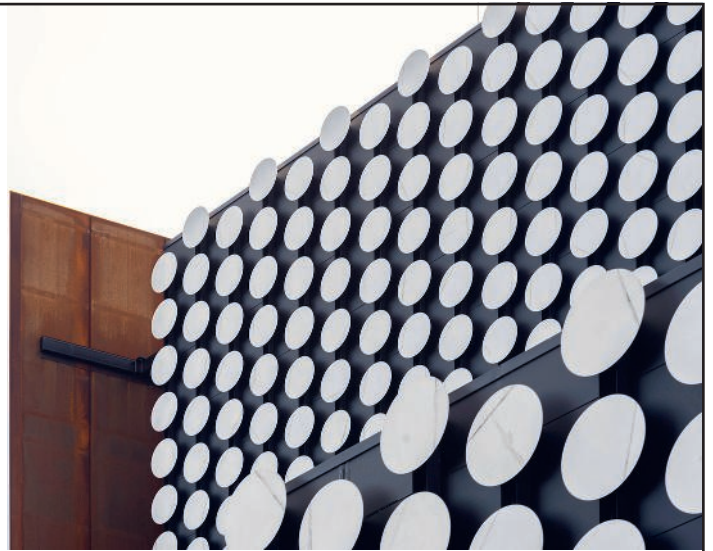
[paaomasijoittajat.fi/en/finnish-venture-capital-association](https://paaomasijoittajat.fi/en/finnish-venture-capital-association)

## DANCE HOUSE HELSINKI 02/02/2022

The brand new Dance House Helsinki opens its doors on 2 February 2022. It is a performance and event venue especially designed for dance and located at the Cable Factory Cultural Centre in Helsinki. Dance House Helsinki is both a community and a platform embracing and celebrating all forms of dance. It will offer a variety of local dance performances and international guest performance productions all year round. The 6,500-square-metre house includes two unique halls for performances with state-of-the-art technology. Dance House Helsinki is the first space in Finland dedicated to all dance forms. ●

 [tansintalo.fi/en](https://tansintalo.fi/en)

Photo Dance House Helsinki



## MANAGING THE ENTIRE BATTERY VALUE CHAIN

Finland is capable of managing the entire battery value chain, from mineral extraction to recycling. The European battery industry is estimated to reach a value chain worth up to 250 billion euros by 2025. Finland is one of the first countries in the world to reveal a national battery strategy. Responsible operations, traceability, safety and carbon neutrality are guiding principles for the Finnish battery sector.

As an example of recent developments, Valmet Automotive opened a new battery plant in Uusikaupunki in southwestern Finland in 2021, producing high-voltage automotive battery modules and battery packs for its associated car plant.

State-owned company Finnish Minerals Group and FREYR Battery work together to establish battery cell production in Finland. Finnish Minerals Group aims to maximise the value of minerals responsibly. FREYR is interested in low-carbon battery materials for their factories in the Nordic region. ●

 [mineralsgroup.fi](https://mineralsgroup.fi)

Photo Timo Viitanen/Lehtikuva



## WELCOME TO SALLA NATIONAL PARK

In 2022, Salla National Park in Lapland will become the 41st national park in Finland. The park covers about 10,000 hectares around the Salla fell near the Russian border. Salla National Park will support sustainable nature tourism and can be reached by public transport from the south. Every season, Lapland offers stunning experiences from the midnight sun to autumn colours and a winter wonderland with the polar night and auroras.

Finnish national parks are national treasures and ensuring biodiversity is one of the major reasons they are established. They are extensive nature conservation areas offering opportunities to enjoy nature. They have marked hiking routes, nature trails, and campfire and camping sites. There are other national parks around the Finnish Lapland. Why not visit them all? ●

 [nationalparks.fi](https://nationalparks.fi)

 [visitfinland.com/sustainable-finland/](https://visitfinland.com/sustainable-finland/)



By Maarit Seeling  
Photo Kreetta Järvenpää



“Progress on materials is slow, and it takes years for a novelty to find its way into our wardrobes or sideboards, or anywhere at all,” says Professor Pirjo Kääriäinen.

# FINDING TEXTILE FIBRES IN THE FOREST

Research and innovation are crucial in the textile industry's search for solutions to its environmental challenges. Finland has risen to become a global leader in the development of ecologically sound, cellulose-based textile fibres.



long tradition in wood processing has given us plenty of scientific and applied knowledge of cellulose-based raw materials," says professor **Pirjo Kääriäinen** from Aalto University's Department of Design.

The textile industry is one of the largest industry sectors in the world. Unfortunately, so is its environmental impact. It acutely needs new ideas in the development of novel materials and production methods and in the recycling of discarded textiles.

Research and development on biobased raw materials has been progressing in Finland for a long time and the new textile fibre materials are expected to experience a commercial breakthrough within a few years.

**Katri Pykkänen** is an expert in products, materials and responsibility at Finnish Textile and Fashion, the country's central organisation for textile, clothing and fashion companies. She sees great interest in new, more responsible materials.

"Consumers are increasingly interested in whether a piece of clothing has been manufactured in a socially and ecologically responsible way," she says. "They also are concerned over the problems associated with the raw materials currently in use. The challenge is global. What we need now is to invest in bringing products made from new textile materials to market."

## TOWARDS A CIRCULAR ECONOMY

Finnish Textile and Fashion has responded to the challenge by naming circular economy as one of its strategic priorities.

"In addition to innovative fibre solutions, the industry is creating new textile recycling methods," says Pykkänen.

Companies, research institutes and the public sector have been developing textile recycling methods in Finland for a long time. In November 2021, the biggest Nordic textile recycling centre was opened in Southwest Finland.

One of the great future promises of the textile industry seems to be wood pulp, derived from either virgin fibre or recycled materials. Pulp-based materials have the potential to replace not only natural fibres such as cotton, but also synthetic fibres.

The adoption of new biobased materials is largely a question of developing new manufacturing processes. If it fulfils expectations, pulp textile may become a billion-dollar business.

"In Finland, we truly have a lot of research on the subject," Kääriäinen says. "We already have several new fibre production technologies at the scaling stages."

## DEMAND IS GUARANTEED

The world market is eagerly awaiting more sustainable textile fibres. Many fashion

industry players, such as Marimekko and H&M, have invested in them.

"The purpose of the wood fibres being developed in Finland is to decrease emissions from products," Kääriäinen says. "Textile fibres produced from renewable raw materials have great potential."

Yet the challenge of applying the technologies on an industrial scale remains.

"It takes years for a new material to find its way into our wardrobes," Kääriäinen says. "However, many new-fibre companies are reaching commercialisation. Demand is guaranteed. I believe we will see breakthroughs within two or three years." ●





## NATURE FIRST!

There are many new Finnish start-ups that produce wood-based textile fibres or recycle textiles. Their products are based on local world-class competence in biobased raw materials.

The world produces more than 100 million tonnes of textile fibres annually. Oil-based materials and cotton create major burdens on the environment.

The Finnish textile industry wants to make the country a forerunner in textile recycling and sustainable materials.

The new textile fibres developed in Finland aim to provide the world with more responsible production methods and new raw material innovations.



Photo MetsäGroup.

CASE

## KUURA

**Metsä Spring, the innovation company of Metsä Group, produces textile fibre called Kuura from wood pulp at a demo plant located in the central Finnish town of Äänekoski. It is co-owned by Metsä Spring and Japan's Itochu Corporation.**

Metsä Group procures its feedstock locally from sustainably managed forests. A two-year test phase was launched at the end of 2020. Still under development, the production method is based on a new way of treating natural fibres.

The Kuura fashion collection was presented in March 2021 at Japan's fashion week in cooperation with a Japanese partner.

Late in the summer of 2021, the first international environmental audit on Kuura fibre was published. The results were good and support Kuura's potential as a sustainable development option. Further development will take the report's recommendations into consideration.

CASE

## INFINITED FIBER COMPANY

**Infinited Fiber's technology allows the production of new textile fibre from textile waste.**

Its Infinna textile fibre can also be produced from other cellulose-rich waste streams like used cardboard or paper, or from wheat straw. The company has piloted fibre production in Espoo, just outside of Helsinki, since 2018, and it announced in April 2021 that it planned to build a commercial-scale Infinna™ textile fibre facility.

Infinited Fiber is currently preparing to build its flagship factory in Finland, with production starting in 2024.

Infinited Fiber has attracted prestigious partners. Its clients include H&M Group, Patagonia and BESTSELLER, which have all signed multi-year Infinna purchasing deals. Suominen, the global market leader in nonwovens for wipes is also one of its partners.



Photo Infinited Fiber

## CASE

## BIOLEATHER, VTT

VTT Technical Research Centre of Finland Ltd (VTT) is developing an alternative to leather made from fungal mycelium. Géza Szilvay, senior scientist at VTT, estimates current biobased mycelium leather to be sufficiently resilient for use in shoes and bags.

"Mycelium leather can be made from food production sidestreams so no fossil raw materials or new field acreage are needed," says Szilvay. "Nor do we need tanning chemicals. Production is wholly free of animal-sourced raw materials and mycelium leather is biodegradable."

Before large-scale commercialisation, companies developing mycelium leather still have a few obstacles to overcome.

"Here at VTT, we have developed a production method that solves a bottleneck in product manufacturing," says Szilvay. "This technology enables easy and cost-effective scaling of production to an industrial level. The next generation of mycelium leather could be in commercial production in two to five years."



Bergans collection of tomorrow anorak. Photo Bergans.

## CASE

## SPINNOVA

Spinnova, listed on Nasdaq Helsinki since summer 2021, has developed a new way of producing textile fibre from wood, post-consumer leather and textile waste or food waste, all without noxious chemicals.

The company uses spinning technology. It is building its first commercial textile mill in the central Finnish town of Jyväskylä together with its strategic and raw material partner Suzano. The mill is expected to begin production by the end of 2022, when Spinnova fibre will be globally available to textile brands.

Spinnova says its goal is to produce one million tonnes of pulp-based fibre annually which can be sold for textile production.

The key to success is world-class brands and strategic partners. The company's brand partners include the Swedish fashion chain H&M, sports apparel giant Adidas, and outdoor clothing companies The North Face and Icepeak.

## CASE

## IONCELL

The Ioncell process uses an innovative solvent, technology jointly developed by Aalto University and the University of Helsinki. It allows the production of environmentally certified textile fibre from recycled materials and wood.

The technology received wide acclaim in 2018 at the President's Independence Day Reception, when First Lady Jenni Haukio wore an Ioncell evening gown produced from birchwood for the occasion.

Ioncell aims to commercialise the fibre in the coming years. A pilot textile mill was completed in early 2021.

Jari Laine, in charge of Ioncell's value chain planning and its business model at Aalto University, says the closed-loop

pilot has begun well, and that the project is advancing promisingly. For the time being, the pilot is concentrating on process parameters, recycling of ionic water and optimisation of fibre properties.

"Our goal is for Ioncell to reach the commercialisation phase in 2025," says Laine.



Photo Diana Luganski



Text and photos by Liisa Jokinen

# NOT CONVENTIONAL CLOTHES

Our fashion has long prided itself on being practical and functional. Now a new generation of designers is challenging that notion with their surprising and original creations. In the streets of Helsinki you can spot both sides of fashion.

## MIIKA, 29

"I'm wearing a coat by **Daniel Palillo**, an Acne shirt, a Samuji bag and a cap from H&M."

Daniel Palillo's namesake label was known for oversized clothes screaming black humour. His tongue-in-cheek style was especially popular in the Asian countries.



## JAANA, 60

"My jacket is from Samuji 2014 men's collection and other clothes from the Nomen Nescio SS20 collection. I don't really follow fashion. My inspiration is minimalism, its aesthetics and values, and the colour black."

Samuji was launched in 2011 by **Samu-Jussi Koski**, previously Marimekko's creative director. The label is known for its understated staples and high-quality materials. Nomen Nescio is a newcomer in Finnish fashion, making genderless clothes in black only.



## JERE, 24

"I'm wearing a jacket and sweatpants by R-Collection, shoes by Vans and a tote bag by Wrong for Hay. This is my official summer outfit. At the moment I'm inspired by everything except the colour black."

R-Collection is a family-owned firm that has been producing functional leisurewear since the 1970s in the northeastern city of Kajaani. They are best known for a classic anorak that comes in multiple colours.



## PATRIK, 36

"I'm wearing my own design from Patrik Loves Jenni collection which I did while I was still studying fashion design at Aalto University School of Arts, Design and Architecture."

Aalto University has been listed several times among the best fashion schools in the world. The annual graduation show is one of the highlights of the year in the local fashion scene.





**OLIVER, 25**

"I'm wearing 70's carpenter pants, an SSSU by **Sasu Kauppi** jacket paired with bright red Nike blazers. The roots of my inspiration are the 90's hip hop street scene and skateboarding."

After launching his fashion label in Helsinki, Kauppi was soon spotted online by none other than **Kanye West**. Kauppi moved to Los Angeles and worked as the design director and menswear head designer at West's Yeezy label. Now he is back in Helsinki developing his SSSU brand.

**PRIYA, 26**

"I'm wearing a Marimekko Jokapoika shirt, a leather jacket from the recycling centre, my mom's trousers, and Dr. Marten shoes. I'm inspired by the 80's rockabilly fashion and the current street wear trends."

Marimekko's Jokapoika shirt is a design classic and one of the most famous Finnish fashion items in the world. The striped Piccolo fabric was designed in 1953 by designer **Vuokko Eskolin-Nurmesniemi**. Three years later, a Piccolo print shirt called Jokapoika was born. It was the first piece of Marimekko menswear.



**KAISA, 35**

"I'm wearing Finnish brands - a Marimekko jacket from the 90s and R/H trousers from a couple of years ago. Circus, oil paintings, and childhood memories are my sources of inspiration. I also go as much as possible for ethical and sustainable production or vintage."

**Hanna Riiheläinen** and **Emilia Hernesniemi** founded R/H in 2010, focusing on effortless styles and fun, block prints. All R/H clothes and accessories are designed in Finland.

**VESTA, 26**

"I'm wearing a custom dress by **Männistö** and a custom hat by **Annette Heiskanen**."

**Julia Männistö** is one of the young rising stars in the fashion scene. She was a finalist in the LVMH Prize in 2016.



**LIISA JOKINEN – FOUNDER & STREET STYLE PHOTOGRAPHER**

Liisa Jokinen is an entrepreneur, writer, and street style photographer from Helsinki, currently living in New York.

In 2019, she co-founded the Gem vintage app, a search engine for online vintage clothing. Jokinen is also the creator of two street style sites, Hel Looks and NYC Looks.



By Minna Takkunen

Photos Kreetta Järvenpää, Tuula Lampela, Daniel Hischer/Lehtikuva

Hobbies have been worked into a nationwide leisure activity model as a way to enrich peoples' lives and to make them better citizens.

# HOBBY NATION

**A** available for everyone. Easy to reach. No previous skills required. Educational vibe. These features of many popular leisure activities can also perform an important social function. For several decades Finland has been using hobbies as a way of fostering active members of the community.

According to various surveys, about 90% of Finns of all ages and even 96% of those under 10 years old say they have a hobby. About 60% of 9 to 15 year olds take part in the activities of a sports club. Adults more commonly exercise on their own, for example by cycling, running or swimming.

“Compared to other European countries, our transformation from a rural society into a modern one happened exceptionally fast,” explains **Mikko Salasuo**, Senior Researcher at the Youth Research Society. “In the traditional agrarian community, the whole village took part in raising children into responsible adults. After World War II, there was growing concern about the social involvement of the younger generation. Using hobbies to foster citizenship and improve the social skills of the young was a decision made on a national level.”

After the war, the government and an array of non-governmental organisations worked together to create a nationwide civic education project, and the state supported it financially. The signs of this national civic education ethos can still be seen around the country, in hobbies organised by NGOs and associations for all ages.

“The state of Finland and municipalities support leisure activities with substantial investments every year. Various sports clubs, youth organisations like the Scouts, and organisations offering basic art education, like the music schools, get many

direct and indirect subsidies and support for their premises that amount to hundreds of millions of euros every year,” Salasuo says.

The national model is currently being updated to ensure equal opportunities for all. Several leisure activities have become expensive and thus not available for everyone.

“In many cases, the ethos of excellence has overtaken the initial priorities of social interaction, civic education and equal possibilities,” says Salasuo.

There are doubts about whether expensive and often very competitive hobbies improve well-being or promote social participation among younger generations and families. Bubbling under, there is also a demand for hobbies to be pursued at school, inclusive for all.

Salasuo is on the working committee of the new model of hobbies: to enable all children and teenagers to have a leisure activity during the school day free of charge. The Ministry of Education and Culture is in charge of the model. Wellbeing and children's rights are priorities. This time, children and young people can make their own voices heard. The pursuits at the top of their list include parkour, climbing, cooking, animals and the visual arts. In the spring of 2021, during the

pilot phase of the Finnish model of hobbies, more than 200,000 children and young people were reached.

In a wider sense, hobbies are seen as an essential way to increase wellbeing of all ages. Rather than staying late at work in the evening, people are more likely to stay active outdoors, come rain or shine, and learn new things. Reading, gaming, music and various arts and crafts such as knitting and woodwork are also popular. Want to meet and get to know Finns? Try your hand at a new skill or pick an activity from the large variety of courses organised by adult education centres. ●

“THERE IS A  
DEMAND FOR  
HOBBIES TO BE  
PURSUED AT  
SCHOOL.”



#### THE PUBLIC RIGHT OF ACCESS

In Finland, according to "every person's right", anyone can pick berries and mushrooms regardless who owns the land. Permission from the landowner is not required. Many apps and websites are helpful to get started with mushroom picking. Beginners need to be sure they only pick edible mushrooms and not the poisonous ones.

## TREASURE HUNTING IN THE FOREST

“It’s

like saying hello to old friends,” says **Anna-Kaisa Asuja** when she bends down to meet some mushrooms that have popped up in

her familiar mushroom hunting grounds in Espoo. It’s late September, and we’re breathing in the fresh fragrances of earthy autumn forest. The woodlands are now rich with mushrooms, available free for everyone. Just a while earlier, people were picking bilberries here, and the lingonberry season is not yet over.

The nearest forest is just 300 metres from her door, and her home is only a 20-minute drive from central Helsinki. Nearby, there are people walking, jogging and cycling on the forest paths. Anna-Kaisa also likes to run here, and to ski when there’s snow, but in the present season, around August and September, she focuses on what she likes to call mushroom mindfulness.

For her, picking wild mushrooms is much more than gathering fresh ingredients for her kitchen. It’s a multi-sensory pleasure packed with shapes, colours, textures and aromas. For a busy mother of three, a ninety-minute mushroom walk, as she calls it, also gives her some time with her own thoughts.

“Above all, it’s the joy of exploring, a bit like treasure hunting. I scan the ground for the types of mushroom that are appearing. And it doesn’t matter if I return home with an empty basket.”

To appreciate what she finds and to learn about different types of mushrooms, she takes photos of them and then she compares the photos to online pictures. Online groups have taken her passion for mushrooms to another level.

She gently pushes the soft beds of moss to one side, to reveal groups of funnel chanterelles.

“These are still babies.”

She will enjoy them in a soup, or on some crunchy toast, fried with onions and butter seasoned with salt and black pepper. Other mushroom delicacies in her kitchen are bruschetta, pasta and risotto.

Looking at her, excited and relaxed at the same time, it’s easy to agree when she says that there’s something sacred in the experience of greeting the first funnel chanterelles of the season.

“I’m filled with gratitude for all the things the forest land offers us.”

A while ago, she was roaming the forest with a couple of friends, one of them 80 years old.

“There were some rocky hills to climb, and a couple of times we wondered if we were lost. I was thinking that I want to be that fit and eager to explore nature when I’m 80.” ●



## LIFELONG LEARNER

A

Adult education classes have been available in Finland for over 120 years. Everyone is welcome to study a wide variety of subjects, such as arts and crafts, languages, IT, general knowledge, music, sports and cooking.

There are 177 adult education centres – at least one in every municipality. For historical reasons, they are called either kansalaisopisto, työväenopisto or aikuisopisto. The courses are very popular; every year, about 600 000 people attend the courses offered by the adult education centres.

**Jorma Eskola**, 80, has been honing his woodworking skills for forty years at courses of The Adult Education Centre of the City of Helsinki. Among his creations are kitchenware and furniture, such as a chest of drawers, and several kanteles, a traditional Finnish string instrument. Eskola has even made a grandfather clock, imitating an 18th century English version.

Woodworking is very popular. “These courses fill up within minutes of the start of enrolling,” he says. Woodworking facilities are hard to find in the city, so the tools, equipment and machines available attract many participants.

Eskola has stayed very motivated. “It’s a big deal to finish the piece you’ve been working on for a long time.” During his career, as a manager in mechanical engineering, the woodworking courses were a good way to relax.

The social element of the classes is significant.

“Coffee breaks are important; that’s when we chat and get to know each other,” Eskola says. “I still see some of the people who have been in the same courses.”

Over several decades of learning new things, Eskola has also studied English and tried his hand at metal work. After retiring, he joined a choir. He has participated in a Helsinki University study on how senior citizens’ choir singing relates to social support, mood and cognitive performance. Its findings confirmed that there are strong social benefits to choir singing.

“I have noticed that it really makes a difference, both mentally and physically. When I come home from choir practice, I feel much perkier.” ●



“COFFEE BREAKS ARE IMPORTANT; THAT’S WHEN WE CHAT AND GET TO KNOW EACH OTHER.”



## GOOD VIBES



**Viivi Mattanen**, 17, has been taking piano lessons for almost six years at the Lapland Music Institute. Its main location is in Rovaniemi but luckily she is able to take all her lessons 130 kilometres farther north in Sodankylä, where she lives. The Lapland Music Institute has branch offices in Sodankylä, Pello and Posio.

Her piano teacher **Ágnes Diószegi**, originally from Hungary, runs the Institute's piano and chamber music studies in Sodankylä.

Finland is famous for composers like **Jean Sibelius**, **Kaija Saariaho** and **Einojuhani Rautavaara**, and conductors like **Sakari Oramo**, **Esa-Pekka Salonen** and **Leif Segerstam**. The success of many Finnish masters of music is based on the country's long-term investments in affordable basic music education.

There are almost a hundred music institutes in Finland. Some of them are privately owned, while others are run by local councils. Tuition in all of them is based on the advanced arts education curriculum specified by the National Agency for Education.

High quality teaching all over the country aims at bringing out individual strengths. The main focus is on classical music, but there are pop vibes, too.

After Viivi Mattanen finishes school in a couple of years, music is high on her list of possible future plans.

"I feel that music studies have increased my confidence and ability to express myself. I'd like to study education, maybe music education. Or English. Or Finnish. Let's see." ●

## URBAN LIVING ROOM

The State of Finland built Oodi as a birthday present to its citizens when the country celebrated its 100 years of independence in 2017. The flagship library was opened the following year. It is a clear indication of how important reading and education are to Finns.

Once inside the light-filled, atmospheric entrance hall of Oodi, the Helsinki Central Library, the visitor is spoiled for choice. "Borrow Outdoor Games" suggests a sign on the wall. Or how about browsing magazines and books, playing video games or boardgames,

hanging with kids in the play area, experimenting with some arts and crafts, recording music in one of the studios or finding a quiet nook to work or just relax?

Glass-walled Kuutio, a 90-square-metre space, is also impressive with its digital smart walls. It can be reserved for meetings or displaying media art. There is also a National Audiovisual Institute cinema, Kino Regina, in the building.

In the whole of Finland, there are 280 main public libraries and more than 430 branches. Providing equal opportunities for

reading activities, learning new things and active citizenship is a national mission with a long history. An inclusive approach is the key.

"The strong role of the Finnish National Library is based on the Library Law, first enacted in 1928. Libraries are non-commercial and open for everyone. You can even pop in just to warm up if you like," says Ulla Leinikka, information specialist at Oodi.

Oodi has received international architecture awards, including the Public Library of the Year award in 2019. ●



By Päivi Leinonen

# CITIES, TOWNS AND THE BEAUTY AROUND

Most tourists know Helsinki and Lapland but there are many other places in Finland that are worth visiting. Even large cities are close to distinctive, peaceful natural sights. Whether you choose an urban attraction or a nature destination, there's plenty of space everywhere.

Photo visitoulu.fi



## Oulu

### CULTURE AND ADVENTURE

Oulu, at the north of the Gulf of Bothnia, is a diverse cultural city in a maritime setting. Kuusisaari island is only a ten-minute walk from the town centre. There you can have a picnic or take advantage of the island's campfire sites. Another wonderful nature destination is Nallikari beach at Hietasaari. In winter, Nallikari Winter Village is full of things for families and children to do.

A special attraction for all ages is Kierikki Stone Age Centre. During the summer you can even try your skills at archaeological excavation. The centre's main building is one of the largest log houses in the Nordic countries. Hotel and restaurant services are available.

## SUSTAINABLE TRAVEL FINLAND

Sustainability has become important for travellers, and accommodation companies are increasingly investing in sustainable development. Visit Finland, the official travel site, awards the Sustainable Travel Finland label to companies that are committed to sustainable values in their operations.

 [visitfinland.com/sustainable-finland](https://visitfinland.com/sustainable-finland)

## Hanko

### THE SOPHISTICATED SOUTH

Idyllic Hanko offers small-town atmosphere by the sea. You will enjoy stunning cliffs and sandy beaches, but there are also stylish restaurants and boutiques in the town.

From Hanko, you can hike to the southernmost tip of mainland Finland and admire the magnificent nature reserve between the Gulf of Finland and the Archipelago Sea. Tulliniemi nature trail is 7½ km (5 miles) long. Its start is easy to navigate but at the end the rocky terrain gets more challenging.

Photo Visit Hanko-Robin Sjölund



Photo Seilo Ristimäki

## Turku

### A RIVERSIDE PROMENADE

Turku's residents enjoy walking along the banks of the River Aura. It's no wonder, as the riverside has it all: museums, restaurants, a theatre and examples of the medieval town. In summer the river can be admired on many restaurant ships. An urban walk along the Aura from Turku Castle to its Cathedral is just under 4 kilometres (2½ miles).

Photo Kari Ylitalo



Photo Laura Vanzo

## Helsinki

### OUR CITY OF ISLANDS

This lively centre of culture is also a seaside resort of about 300 islands. Many of them are ideal for a day trip and are served by regular ferries during the summer season. Many islands have restaurants and other points of interest, and host cultural events.

The islands of Suomenlinna are easily reached. Suomenlinna and its fortifications are a Unesco World Heritage site and one of the most popular tourist attractions. There are 800 residents so its ferry is part of the city's public transport system and runs at least every hour. You can explore interesting museums, visit some of the many cafes and restaurants, or just enjoy the breathtakingly beautiful scenery.

## Tampere

### BETWEEN TWO LAKES

Tampere is a captivating city between two large lake areas. Industrial history is still strongly visible around the rapids that flow through the city. The site of the Finlayson cotton mill, established in 1820, has become a diverse cultural centre. Since 2021, popular rooftop walks across the factory buildings have offered a way to admire the urban landscape from a new perspective. The area is filled with galleries, restaurants and museums. A bit different but certainly just as original, the world's only Moomin Museum is in Tampere!



**Rovaniemi**

## CAPITAL OF LAPLAND

To see reindeer on the beach, head to Rovaniemi. They usually thrive in fells and meadows but on hot summer days reindeer may indeed cool off in the river. The most famous resident of the area is, of course, Santa Claus; you can meet him in Santa Claus Village every day of the year.

For a day trip, visit Lampivaara Amethyst Mine, 120 km away. At the jewel mine at the top of a mountain in Pyhä-Luosto National Park, you may find your own lucky amethyst. The Midnight Sun itself is another reason to travel to Rovaniemi; White Nights can be experienced from 6th June to 7th July.

Photo Kaisa Siren/Lehtikuva



Photo Visit Vaasa / Mikael Nybacka

**Vaasa**

## WORLD HERITAGE GATEWAY

The Kvarken archipelago, which begins near the city of Vaasa, is a chain of 5,000 islands across the Gulf of Bothnia and a unique place to see the uplift of land that followed the last Ice Age. Start your exploration at the World Heritage Gateway, next to Finland's longest bridge.

The Vaasa area has many museums and attractions. An elegant destination is Strömsö villa, which has been the location of a very popular lifestyle programme on Finnish television for a couple of decades. Home care, cooking, furniture, gardening, everything in the Strömsö show is a success. There's even a Finnish saying for a failure: "It didn't go like Strömsö". Built in 1852, the villa's surroundings and beaches are a popular rendezvous spot for city dwellers and tourists.

**Punkaharju**

## FOREST ON THE RIDGE

Punkaharju's ridge across a lake has fascinated visitors for centuries. One famous guest, Russian Tsar Nicholas I, ordered the area to be protected in 1843. A couple of years later, he had a ranger's house and accommodation built on the ridge. The place is now Hotel Punkaharju.

Nearby is Lusto, a forest museum, with displays on lumberjack life, timber wolves and forest fires. Also worth visiting is Punkaharju Nature Reserve. It contains a trench, a defensive line 1,200 kilometres long built between 1940 and 1944.

Photo Ismo Pekkarinen/Lehtikuva





## Espoo

### GARDEN CITY ON THE BAY

Tapiola is the cultural heart of Espoo, Helsinki's neighbour to the west. Its WeeGee Exhibition Centre houses museums, exhibitions and events on the premises of a former printing house.

The garden city of Tapiola is considered one of the most successful examples of Finnish urban planning and attracted wide international interest when it was developed in the 1950s. The era's most talented architects created an acclaimed urban environment with their original buildings and landscaping by the sea.

Inland, Espoo offers the perfect hiking environment in Nuuksio National Park, with lakes, forests, valleys and cliffs. Haltia is its nature exhibition centre.



Photo Evelina Dobosz/City of Rauma

## Rauma

### A DOUBLE HERITAGE

There are two Unesco World Heritage Sites in the town of Rauma. One is Sammallahdenmäki, a Bronze Age burial mound area and the other is the city's picturesque old wooden centre.

Popular places among locals are Wanhan Rauman KaffeBar, which is said to bake the best doughnuts, and the Tornin water tower restaurant, which offers great views. Rauma has several distinctive and long-standing cultural events, like Lace Week, Rauma Festivo and Rauma Blues. The lighthouse island of Kylmäpihlaja – which means Cold Rowan – is suitable for day trips or overnight stays.

## Fiskars

### DESIGN AND ART CENTRE

Fiskars and its ironworks, established in the 17th century, are about an hour's drive from Helsinki. Today, the area is known as a centre of design and art. As a travel destination Fiskars Village has been recognised for its sustainable development and local production. It has two hotels and several bed and breakfasts. Nearby Raseborg, on the coast, has a medieval castle that will intrigue families with children.

Photo © Fiskars Village







More things  
you should and  
shouldn't know:  
 [finland.fi](https://finland.fi)

## SKATEBOARDING HIGH SCHOOL

The Sampo High School in Tampere is now offering a skateboarding study programme combining sport studies and communication skills. The students learn about urban culture and development, event planning and audio-visual communication as they perfect their skateboarding skills.