

## Info-package of opportunities: Collaboration between companies & LUT/LAB students



# Introduction

This info-package introduces different possibilities for collaboration between companies of Greenreality network and LUT & LAB students, which were collected by our research group and introduced at the webinar on Oct 1st 2020. There are ways to build more collaboration and develop together the future of South Karelian region with international talents.

Our mission in “Fast Teams” project of Greenreality Network is to bring our network members more closely together for creating new capabilities and possibilities for successful collaboration and business growth with the aid of digital tools and platforms.

Our mission as a university is to show how science can be used to find answers to questions about the fate of the humanity, such as the climate change.

The next pages provide information, how you can get connected to LUT, LAB and high school students.

In the following months, our research team is planning to develop more initiatives, such as Gigs and Jobs Dating with the Greenreality Solved platform and align collective efforts from LUT & LAB for creating a positive change together. If your organization has an interest to be a part of the community, developing these initiatives with us, searches talents or willing to match them to innovative project teams, feel free to connect and stay in touch with us.

With best wishes,  
Your Greenreality “Fast Teams” Project colleagues



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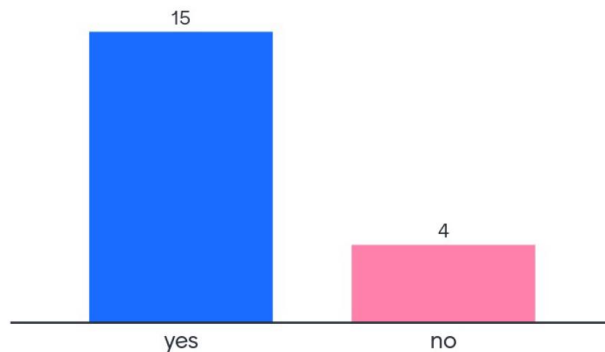


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# Expectations and experience of collaboration:

During the last 2 years, did you do any collaboration with LUT&LAB students?

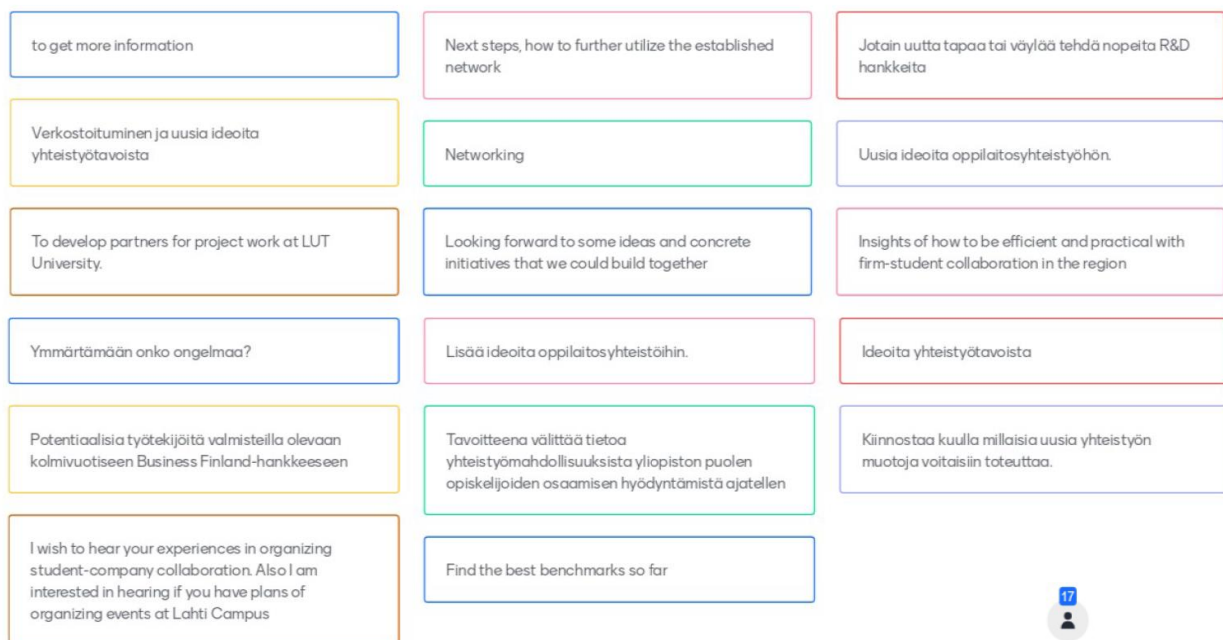
Mentimeter



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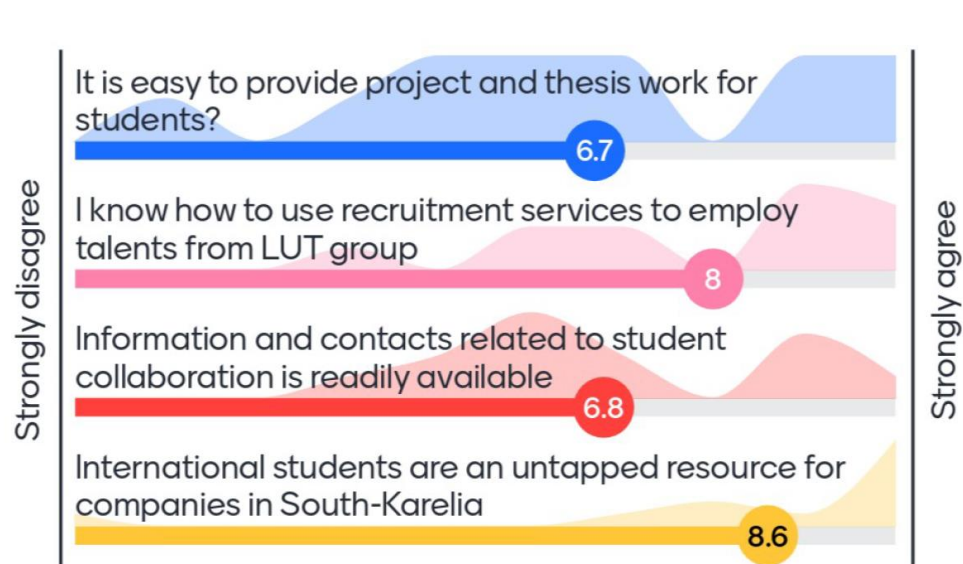
What kind of expectations do you have for this webinar?  
(answer in English or Finnish)

Mentimeter



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# Expectations and experience of collaboration:



## What would you suggest to further enable company-student collaboration and employment of students?

Mentimeter

Aika usein tutkimuksen lisäksi tarvitsemme business studyn, nyt näitä on hankala yhdistää, samoin kestävyys tarkastelua vanhan ja uuden välillä

Nyt olisi sadoissa yrityksissä tarjolla toiminnan kehittämiseen kykeneville opiskelijoille hommia, ensin pitää kontaktoida kehitystutkia saaneet yritykset ja selvittää tarpeet

Selkeät väylät tai vain yksi väylä tarpeiden ja osaamisen kohtaamiseksi

Additional information: The answers were shared real-time by participants during the webinar.

# Opportunities

## Technology and engineering science project work

The program gives an opportunity to students from different disciplines to solve a problem by applying the skills acquired in their studies.

Focus on company needs through practical work with business-driven output.

Project Work 1 - 14 weeks (Jan. to Apr.)

Project Work 2 – 28 weeks (Sept. to Apr.)

Project work could be arranged in companies, at the Jamie Hyneman Centre or other LUT laboratories

The overall level of commitment needed from companies is very flexible.

Benefits:

- Establishing relations between students and the private sector
- Private sector aids in guiding development of potential employees
- Utilizing the available resources of LUT University and its staff for research and development
- Enabling innovation and the creation of valuable products or services
- Project work can be further developed as a topic of Bachelor's thesis work

Examples of project work ideas:

- Convert a combustion outboard boat motor to an electric motor
- Electric scooter or bicycle
- Dual axis solar tracker
- Low kW scale wind turbine
- Piezoelectricity generation
- Niche electricity storage solutions
- Water turbine for hikers or boaters
- Projects related to achieving a Sustainable Development Goal
- Your project idea or challenge.

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Research Areas: Energy, Engineering

LUT School of Energy Systems

## LUT Project work course in Environmental Technology – Opportunity for companies to connect and work with BSc degree students

Watch the video introduction at first: <https://echo360.org.uk/media/d4d75c0f-6d17-4532-8e0f-e3983c9b90f1/public>

The LUT University's degree program in environmental technology organizes an annual project work course, in which second-year bachelor's degree students carry out small studies for a client outside the university. The course is scheduled for the fall and spring semesters so that the introductory lecture is in the last week of October and the completed work is presented in early March. The scope of the course is 4 credits, so one student spends about 104 hours on the course and the work is carried out in groups of 3-5 people. The course offers the partner the opportunity to get to know our students and several of our partners have used the course to their advantage in hiring summer workers for next summer. In addition, attending the course increases visibility among students.

We are currently looking for new partners 27.10. for the beginning of course implementation. In addition to the topics, participation in the course requires the partner to participate in the opening event of the course on Tue 27.10 from 13:30 to 15:00 or Thu 29.10. 12:30-14:00 either on site at the Lappeenranta campus or through an online streaming lecture (we use Zoom). In addition, the partner is expected to participate in a student project plan seminar in early December (students present their plans for project implementation) and a final seminar in early March (students present the results of the work). Between seminars, we hope that students can ask you for information about their work and preferably, also a face-to-face meeting at the company's premises can be arranged so that the operator becomes familiar with the students and the students' working life skills are trained. Appointments can also be made remotely.

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Sustainable Solutions, LUT School of Energy Systems

## BSc thesis or Projects in Mechanical engineering

BSc degree program in Mechanical Engineering at LUT has had a great success last year, when 33 students got their candidate thesis ready in time, thanks to the used method: close collaboration between supervisor and students especially in the beginning of the studies. Deadlines for thesis are in May or in December and this timeline is given also for companies. University takes care for the timetable.

### Forms of cooperation:

- Business-oriented project work of the courses
- Bachelor's theses
- Diploma theses

About 75 diploma theses in mechanical engineering are done as a continuous process per year. Duration of work 5-7 months. The professor specifies mentoring process; typically at least schedules and goals are agreed upon at the beginning and met along the way as needed.

Much of the work is done on topics obtained through companies. Many students find their own topics in, for example, summer jobs.

The thesis is basically public, encryption for two years is available on request. The work is typically done through an employment contract or scholarship between the graduate employee and the company (in which case the company donates a certain amount of money to the LUT Support Foundation).

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LUT School of Energy Systems

## Research-driven projects, BSc & MSc Theses from LUT Energy School

The cooperation with companies can be arranged for research projects and theses. Areas of projects/student theses are e.g.: CO2 capture, hydrogen production, cleaning of gases, hydrogen compression and storage, energy efficiency of buildings.

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LUT School of Energy Systems

## MSc thesis projects in environmental impact assessment studies

LUT School of Energy Systems offers master's thesis projects in environmental impact assessment studies for the products or services of companies using life-cycle assessment (LCA) as a tool. As an example, one of the latest was a study of the greenhouse gas emission impacts of a new anaerobic digestion plant. If the members of the Greenreality network have such needs, the co-operation can be arranged with pleasure.

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Sustainable Solutions, LUT School of Energy Systems



## BSc and MSc Theses in Energy Technology

Topics for bachelor's theses are for example: feasibility of solar power systems, biocarbon markets, woodchip heating, heat pumps (several different topics), energy storages, thermal energy storages, energy efficiency in buildings, waste heat recovery, wind power, distributed energy generation. Basically, any topic related to energy goes.

Master's theses follow the same line. It is always the best scenario, if the topic comes from a company and the department is ready to help in formalizing the research question. Most of bachelor's theses start in fall.

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LUT School of Energy Systems

## Internationalization, Entrepreneurship and Marketing – Project work and MSc Theses

International entrepreneurship challenge (IEC) is one of the two specialization courses, and is offered at the beginning of the second year for Master of International Management (MIC) and Master of International Business Administration (MIBA) students. It is an applied experiential course, in which academic rigour meets managerial relevance. As this is an advanced course, the focus is on student-centric action. Students work in cross-cultural teams of 3–5 people to devise an international business plan for a given entrepreneurial company; the core elements of the plan are target market and entry mode selection and international marketing strategy. The teams conduct numerous analyses and collect primary and secondary data to support decision-making. Towards the end of the course, the plans are pitched and presented to an audience comprising business representatives. In the active Q&A section that follows, the students are expected to justify their choices and suggestions to the managers. Students will also prepare a project plan and an ‘elevator pitch’ video. The final oral group examination comprises a discussion on the determinants of international entrepreneurship in both theory and practice, which should be convincing. The planning of the company field project must reflect academic theory based on international entrepreneurship. The companies apply via the course web-page: <https://www.lut.fi/web/en/international-entrepreneurship-challenge>

The MSc theses topics are usually given in early June and January.

For other business-related topics and challenges of companies, there can be a separate project course arranged: Contemporary Issues in International Business and Entrepreneurship.

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LUT School of Business and Management

## Hackathons and applied BSc/MSc theses in software engineering

The department of software engineering promotes collaboration between companies and students in a solution-driven way.

Hackatons can be arranged during the year, if the company is interested in software development or has a specific challenge, which need to be solved. The best planning period is 3 month beforehand.

Also BSc/MSc can be done in collaboration with a company, where the students both conduct an academic work and can develop solutions. The topics of theses are given to students 3-times a year and 1-month before the work starts: in September, January or May.

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Software processes, Entertainment Software Engine.

LUT School of Engineering Science

## Project-based courses, BSc/MSc theses and code-camps for Industrial and Software engineering

LUT School of Engineering Science organizes project-based courses, where companies can teach students technical skills with their software, to build prototypes, solve some challenge or create a new solution. The best time for arranging a code-camp is usually in the beginning of January. E.g. the code-camps leverage an opportunity for students to get also a summer job in the company. The best way to arrange collaboration in any form is to get in touch.

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Research areas: Business Informatics and real use cases of ICT in business)  
Software Engineering & software automation and Information Science

LUT School of Engineering Science

## Software engineers for Green Deal and Sustainable solutions of tomorrow – Open collaboration with companies for thesis

Also the department of Software engineering at LUT School of Engineering Science is currently looking for collaboration with companies, who would be interested to offer thesis to software engineering students and be a part of 2 interesting projects:

1) Erasmus Mundus programme SE4GD - Software Engineers for Green Deal:  
<https://se4gd.lutsoftware.com/>

2) Nordic master Propher - Sustainable software solutions of tomorrow

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Research areas: Software for sustainability, Innovation,  
Technologies and approaches for Communications, Parallel and distributed computing,  
Networks (social, technical, business), Education development

LUT School of Engineering Science

## Other forms of collaboration: links to connect talented students to open job-opportunities

### LUT:

- **Different forms of student cooperation:** assignments, project work, internships, summer jobs, part-time jobs, thesis projects, guilds, LTKY / KOE, LUTES, JHC
- **Recruitment services for companies:** job ads, recruitment events, recruitment partners

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LUT, Career Services and Firmatiimi

- **Visma Solutions – Cooperations at LUT campus**

Software house of Visma Solutions on the LUT University campus offers cooperation projects and visitor lectures with companies and students, as well as the organization of events for students on campus.

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## **LAB:**

### **TalentHub Etelä-Karjala**

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### **Opportunities for employment of international students**

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LAB, Project Manager: *“International workplaces and experts in South Karelia and Kymenlaakso”*

## **Kimpinen High School:**

### **Opportunities for employment of high school students**

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Project manager

The city of Lappeenranta, Welfare and education services industry

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