

- Master of Science in Virtual Reality and Augmented Reality
- 2 years, full-time, 120 ECTS credits
- Faculty of Engineering
- Lund campus
- Application deadline: January 2021
- Programme start: August 2021

## Programme overview

Recent advances in computer graphics, sensors and screen technology give us unprecedented possibilities to completely immerse humans in virtual environments or augment real environments. Virtual Reality (VR) and Augmented Reality (AR) constitute a completely new computing paradigm finding its way into applications for industry, health care, education, entertainment etc. This master's programme aims at educating qualified professionals who can design, implement and evaluate VR and AR applications while also considering the ethical, cultural, and social implications of such technology.

The master's programme offers a truly holistic approach to VR and AR technology in a world-class, multi-disciplinary research and learning environment. Courses in e.g. computer graphics, image analysis, interaction design, VR and AR are blended into a unified learning experience that covers the whole range from enabling technologies to the final user experience of VR/AR applications. At the core of the master's programme is the assumption that VR/AR technology is best learned when students fuse theoretical knowledge and technical skills with design thinking. This specifically means that active experimentation is a fundamental pillar of the master's programme, which means laboratory work and project assignments in Lund University's top tier laboratories. Examples of concrete content in the master's programme include:

- Computer graphics and its implications for VR/AR applications
- Image analysis and its applications in VR/AR tracking

- 3D interaction in VR/AR applications
- User-centred design methodology for VR/AR development.

The demand for engineers specialised in VR/AR technology is increasing rapidly. For this reason, local and global companies are strongly committed to contributing to the master's programme in various ways. Most importantly, this means huge opportunities to make project assignments and master thesis for companies, solving real world problems by applying VR/AR technology in a creative and innovative manner.

## Programme modules/courses

The programme is carefully tailored and only contains compulsory courses.

### COURSES AND NUMBER OF CREDITS:

**Semester 1:** Image analysis (7.5), Computer graphics (7.5), Interaction design (7.5), High performance computer graphics (7.5).

**Semester 2:** Virtual Reality in theory and practice (7.5), Computer vision (7.5), Interaction design, continuation course (7.5), Universal design (7.5).

**Semester 3:** Usability testing (7.5), Augmented reality (7.5), Virtual reality, continuation course (7.5), Project course (7.5).

**Semester 4:** Thesis project (30 credits).

## Career prospects

Students graduating from the Master's programme in Virtual reality and Augmented reality will be extremely attractive for industry in the near future. For example, job market company Hired has reported a 1400% demand growth for VR/AR engineers in 2019. As the VR/AR research field is growing quickly, there are excellent opportunities for an academic career as well.

The number of doctoral student positions is increasing all over the world and the Master's programme provides qualifications for research studies at PhD level.





## Entry requirements and how to apply

### ENTRY REQUIREMENTS

A Bachelor's degree in computer science, computer engineering, or equivalent. Completed courses in mathematics (including calculus in one and several variables, linear algebra, systems and transforms and probability theory and statistics) of at least 30 credits/ECTS, and basic skills in object-oriented programming (at least one course). English level 6 (equivalent to IELTS 6.5, TOEFL 90). For details on English proficiency levels, see [www.lunduniversity.lu.se](http://www.lunduniversity.lu.se)

### HOW TO APPLY

- 1. Apply online:** Go to [www.lunduniversity.lu.se/virtual-reality](http://www.lunduniversity.lu.se/virtual-reality)  
Click on "Apply" and follow the instructions for the online application at the Swedish national application website [www.universityadmissions.se](http://www.universityadmissions.se). Rank the chosen programmes in order of preference.
- 2. Submit your supporting documents:**
  - **General supporting documents:** Check what documents you need to submit (i.e. official transcripts, degree diploma/proof of expected graduation, translations, proof of English, passport) and *how* you need to submit them at [www.universityadmissions.se](http://www.universityadmissions.se)
  - **Programme-specific supporting documents:** For information on programme-specific documentation, please check the programme webpage.
- 3. Pay the application fee** (when applicable).

### SELECTION CRITERIA/ADDITIONAL INFO

The selection is based on academic qualifications.

### TUITION FEES

There are no tuition fees for EU/EEA citizens. For non-EU/EEA citizens, the tuition fee for this programme is SEK 145 000 per year. See [www.lunduniversity.lu.se](http://www.lunduniversity.lu.se) for details on tuition fees.

## About the Faculty of Engineering

The Faculty of Engineering, LTH, is as a place for dreams and discoveries. We inspire creative development of technology, architecture and design and teach some of Sweden's most attractive Master's programmes, all built on a broad research base. LTH is among the leading engineering faculties in Europe with close to 10 000 undergraduate students. Over 1 000 researchers at LTH work hard to improve the quality of life for people and promote a more careful use of the Earth's resources. Our vision is: Together we explore and create – for the benefit of the world. A world record in 5G technology, solar celldriven water purification, early cancer diagnosis, nanotechnology for more efficient solar panels, and a health-promoting oat drink are some of the innovations developed at LTH.

## About Lund University

Lund University was founded in 1666 and is repeatedly ranked among the world's top 100 universities. The University has 40 000 students and more than 8 000 staff based in Lund, Helsingborg and Malmö. We are united in our efforts to understand, explain and improve our world and the human condition.

Lund is the most popular study location in Sweden. The University offers one of the broadest ranges of degree programmes and courses in Scandinavia, based on cross-disciplinary and cutting-edge research. Because of its wide disciplinary range, interdisciplinary collaborations and engagement with wider society, Lund University is particularly well equipped to meet complex societal challenges. With partner universities in around 70 countries, the University's profile is distinctly international.

Lund University has an annual turnover of more than EUR 830 million, of which two-thirds go to research in our nine faculties, enabling us to offer one of the strongest and broadest ranges of research in Scandinavia.

Learn more at [www.lunduniversity.lu.se](http://www.lunduniversity.lu.se)

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### CONTACT

Programme webpage

[www.lunduniversity.lu.se/virtual-reality](http://www.lunduniversity.lu.se/virtual-reality)

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