

HAIC Report - Summer 2018

Distribution: Public

Introduction

Helsinki-Aalto Center for Information Security (HAIC) was established two years ago in the summer of 2016 as a joint strategic initiative by the Deans of Science at Aalto University and University of Helsinki with a mission to attract top master's students to the Helsinki area and train them in information security by offering them tuition fee waivers funded by the universities and living cost scholarships funded via industry donations.

The main activity of HAIC is fundraising for the scholarships. The total number and type of scholarships awarded yearly depends on the magnitude of donations received each year. In addition to scholarships, HAIC provides students industry contacts to help them to find internship and thesis positions during their master studies by organising company visits and "Meet & Greet" events where students can meet company representatives. Since 2018 HAIC has begun to organize public outreach events under the *HAIC Talks* brand. HAIC also has a research program (HAIC-R) as part of Helsinki Institute for Information Technology HIIT.¹

Activities in 2018

Fundraising for scholarships

Sources of funding in 2018:

- Industry donations towards HAIC living cost scholarships from donors: **F-Secure & Huawei**
- **University scholarship programmes** for tuition fees at either university (100%)
- Additional funding from **Dean/SCI at Aalto** for
 - "honours work contracts" at Aalto
 - participation costs scholarships (3000 € / year) for SECCLLO students from EU countries at Aalto
 - HAIC public outreach program, including HAIC Talks

¹ <https://www.hiit.fi/research/#haic>

Industry partners

HAIC industry partners were contacted by sending them a “letter to donors”. The letter sought two kinds of donations. Full donations (20 000 € or more) or supporting donations (5 000 € or more). It described proposed HAIC activities including the event where the donors and the supporters can meet and interact with HAIC students.

[Fundraising during Fall 2017 was successful](#). F-Secure agreed to continue to support HAIC with a full donation, and Huawei joined HAIC as a new partner with full donation. A total of 40 000 € was raised through industry donations.

HAIC Scholarships 2018

HAIC offers different kinds of scholarships to the best applicants specializing in information security: living cost scholarships, honours work contracts (part-time research-related employment during the semesters) and SECCLLO participation cost scholarships. HAIC aims to offer up to 4 scholarships per year but the total number and type of HAIC scholarships awarded yearly depends on the magnitude of donations received that year.

HAIC living cost scholarships (14 000 €/ two academic years) are funded by donations from HAIC donors and supporters. The figure was chosen to encourage the HAIC scholars to seek internships during the summers as well as paid thesis positions when they are ready to write their MSc theses (typically during the last 6 months of their 2-year program). At Aalto, honours work contracts (part-time research-related employment during the semesters) are supported by funding from Dean/SCI earmarked for HAIC.

Application process and selection 2018

Aalto University:

The Security and Cloud Computing major within the Master’s Programme in Computer, Communication and Information Sciences (CCIS) received 48 applications out of which 38 advanced to academic evaluation. The selection committee decided to send admission offers to seven (7) applicants (6 non-EU and 1 EU). Three students enrolled.

The SECCLLO – Master’s programme in Security and Cloud Computing (Erasmus Mundus) received 319 applications out of which 153 advanced to academic evaluation. Applications were received from more than 60 countries. The majority (49%) of the applications were from Asian countries (Pakistan, India, China, Vietnam, Nepal). 18% were from European geographical area. The selection committee decided to send admission offers to 57 applicants (48 non-EU and 9 EU). The 25 enrolled students represent 18 nationalities.

In addition, Aalto University received four applications to its double degree collaboration with ITMO University (<http://en.ifmo.ru/en/>), St Petersburg, Russia. Out of them, two advanced to academic evaluation and one student was selected. The double degree collaboration with ITMO University was initiated in 2016. The selected students complete their first Master-year studies at ITMO's "Computer System Information Security programme" and then continue at Aalto for their second year, including jointly supervised Master's theses. The first five double degree students from ITMO graduated during summer 2018.

Altogether 29 new students started their studies in autumn 2018 in the field of Security and Cloud Computing.

HAIC Scholars 2018:

- Security and Cloud Computing major within the Master's Programme in Computer, Communication and Information Sciences (CCIS): One applicant (non-EU) was offered a HAIC living cost scholarship and Aalto tuition fee waiver. In addition, one applicant (non-EU) was offered a HAIC honours contract and Aalto tuition fee waiver but declined the offer.
- SECULO – Master's programme in Security and Cloud Computing (Erasmus Mundus): Three (3) selected students were offered HAIC scholarship to cover participation costs and one accepted the offer but enrolled absent for the academic year 2018-2019 due to personal reasons.

University of Helsinki:

University of Helsinki has two Master's programmes in which it is possible to study a major within the HAIC scope. These are "Master's Programme in Computer Science" and "Master's Programme in Data Science". The primary program is the former. It includes the "Networking and Services" study line with Information Security as one of the main ingredients. Recipients of the scholarships are selected as part of the university-wide process. All applicants for the Master's Programme in Computer Science are considered for the HAIC scholar positions.

Master's programme in Computer Science received 180 applications out of which 62 were selected. Finally, 17 students began studies in the program.

For the Master's program in Data Science, the numbers are: 155 applications, 45 were selected, and 21 students began studies.

One applicant of the Master's Program in Computer Science got a University of Helsinki scholarship and also started studies.

Table 1. Summary of HAIC scholars 2018 at Aalto University and University of Helsinki.

Programme	Type of scholarship	Number
CCIS/Security and Cloud Computing (Aalto)	HAIC living costs scholarship + Aalto scholarship	1
SECCLLO (Erasmus mundus, Aalto)	HAIC scholarship to cover participation costs	(1)
Master's Program in Computer Science (UH)	Helsinki University scholarship	1

Publicity

HAIC scholarships 2018 were open to all applicants applying to the Security and Cloud Computing major within the Master's Programme in Computer, Communication and Information Sciences (CCIS) or to the SECCLLO – Master's programme in Security and Cloud Computing (Erasmus Mundus) at Aalto University, and for the Master's Programme in Computer Science at the University of Helsinki. Having funding for the living cost scholarships as well as the honors work contracts, HAIC publicised this information on its website (<https://haic.aalto.fi/scholarships/>; <https://haic.aalto.fi/2017/12/04/aalto-university-scholarships-for-new-msc-students-in-information-security/>). Both program websites also mentioned HAIC scholarships. (e.g., http://www.aalto.fi/en/studies/fees_and_scholarships/; http://secclo.aalto.fi/en/scholarships_and_costs/)

Scholarships were also mentioned in the news article on the Aalto University School of Science website: <http://cs.aalto.fi/en/current/news/2017-12-18/> and on the Facebook pages of [Aalto University School of Science](#), [Aalto CCIS program](#), and [SECCLLO](#). HAIC's industry partner F-Secure also mentioned HAIC scholarships on their websites (e.g., <https://fi.press.f-secure.com/2017/12/19/f-secure-tukee-kyberturvaopiskelijoita-lahjoituksella/>)

Industry contacts

Meet and Greet events

HAIC organizes "Meet and Greet" evenings once a year, where information security students can meet and mingle with representatives from industry. During the Meet and Greet evening HAIC presents its yearly report; Selected industry partners present their companies and advertise available internship/thesis positions. In addition, HAIC leadership team has its yearly feedback session with HAIC donors.

Meet and Greet 2018 is organized on October 22 and approx. 30 students have registered for the event.

Company visits

In addition to Meet and Greet events at Aalto University, HAIC started to organize company visits from the beginning of 2018. The idea is to connect information security students with the local information security companies, so that they can learn about available thesis and internship positions, part-time jobs and eventually full-time jobs after graduation. The visits were started with the HAIC donor and supporter companies.

HAIC company visits 2018:

- Nixu, February 21
- F-secure, April 13
- Huawei, October 29

During the visits companies presented overviews of their companies and on-going projects and marketed available positions in their companies. Companies also gave valuable “working-life lessons” and advised how to apply to the open positions. Around 25 students joined each visit. Feedback from students indicated that they appreciated the opportunity to visit local information security companies.

Public outreach

HAIC Talks

In October 2017, HAIC announced a new public outreach initiative “Information security affects everyone” with the aim of making the field of information security more accessible to a broader audience. As part of this initiative, HAIC is organizing **HAIC Talks**, a series of public lectures on contemporary topics in information security. In the style of *studia generalia*, these lectures are free and open to everyone. No background knowledge in information security is assumed. HAIC Talks are made possible through the generous support of the Aalto University School of Science.

HAIC Talks 2018:

- February 22: [Recent trends in cybercrime - with Yves Vandermeer](#)
- June 19: [The Advertisement Exchange: How to Develop Agile Cryptographic Support for an Evolving Ecosystem? – with Moti Yung](#)

- June 20, in conjunction with [Demo Day 2018: Science of Security—Theory vs. Measuring the Observable World – with Paul van Oorschot](#)
- October 9: [Hard problems for cryptography: From Factoring to Sudoku - with Chris Brzuska](#)
- November 2: Cybercrime in the Sky - with Alice Hutchings

Secure Systems Demo Days

Since 2018, the **Secure Systems Demo Days**, organized by the Secure Systems group, have been part of HAIC's public outreach program. Demo Days are annual events to showcase recent research in information security going on in both universities. The event is intended to bring local academia, students and industry together and to give them an excellent opportunity to network and search possibilities for collaboration and for open positions within the local infosec industry and academia. [Demo Day 2018](#), on June 20, was very successful with 130+ participants, 30 poster presentations and 10 demonstrations. The event was opened with a HAIC Talk (Prof. Paul van Oorschot) after which Prof. N. Asokan gave his traditional "State-of-the-Union" talk. This year, as a new initiative, companies were invited to advertise their open positions for students (e.g., thesis positions, internships, part-time positions). Five companies came to present their company (Callstats, Nixu, F-Secure, Ericsson, Elisa).

Massive Open Online Course with F-Secure

University of Helsinki, together with F-Secure, organizes a Massive Open Online Course (MOOC) annually under the title "[Cybersecurity Base with F-Secure](#)". The course is open to everyone and at least the first part "Introduction" (worth of 1 study credit) is intended also for general public who want to learn basics of cybersecurity. The total volume of the course is 10 study credits. The first edition of the course was held over the academic year 2016-17. Then 900 people successfully passed the first module while 124 students passes the last module, called "Capture the Flag" (also worth 1 study credit). The second edition was run over the report period. In this second edition, 533 people passed the first module while 92 people passed the last one.

HAIC communications

In order to promote the awareness of the importance of information security in everyone's daily life, HAIC is sharing news and tips on its social media channels. In addition, HAIC is searching for collaboration possibilities with the National Cyber Security Center at Viestintävirasto (Finnish Communications Regulatory Authority, FICORA).

People behind HAIC

HAIC leadership comprises:

- Professor N. Asokan, Aalto University - Director
- Professor Valtteri Niemi, University of Helsinki - Director of HAIC Research Program at Helsinki Institute for Information Technology (HIIT)
- Dr. Andrew Paverd, Aalto University - Deputy director for HAIC public outreach, till Nov 2018
- Dr. Mohit Sethi, Aalto University - Deputy director for HAIC public outreach, from Nov 2018
- Eija Kujanpää, Aalto University - Manager, international relations, coordinator of the HAIC scholarship schemes at Aalto University
- Niina Idänheimo, Aalto University - Coordinator

HAIC leadership team had one strategy meeting with the Dean/SCI at Aalto in March 2018. The meeting covered HAIC's mission and plans for the future years, funding scheme and added value to the university.

Outlook

HAIC's mission is to attract the best students to study information security at Aalto or at the University of Helsinki by providing them financial support. HAIC hopes that the corresponding universities will promote and market the information security study tracks world-wide. The Erasmus Mundus funded SECCLLO – Master's Programme in Security and Cloud Computing will greatly help this mission in the two coming admission rounds (2019 and 2020). In order to provide financial support, HAIC hopes that the current HAIC donors will continue their donations in subsequent years. HAIC also hopes to attract new industry partners to support the HAIC scholarship program. Ideally, HAIC would require 2-3 full donations from the industry partners in order to support up to 4 students per year.

HAIC ambassador program

In order to promote information security studies at Aalto and at UH, HAIC is planning to start a HAIC ambassador program. This initiative would recruit current HAIC students as well as alumni from CCIS and NordSecMob degree programmes to promote various study opportunities at Aalto and at UH. A HAIC ambassador would, for example, publicise calls for admission to HAIC master's program in their alma mater and other universities in their home country when applications open later this autumn. We will evaluate the impact of this pilot initiative based on the number of applications received from that country/university. Based on the evaluation results, a decision to continue this initiative (with modifications if needed) would be made in spring 2019.