Are you a master’s student within engineering, finance or law looking for an innovative company to collaborate with on your master’s thesis during the spring semester of 2023? Then look no further.

ASSA ABLOY is the global leader in access solutions and provides the latest technologies to give access to physical and virtual spaces for millions of people every day. We are one step ahead of Google on the Forbes Top 100 list of the World’s most innovative companies. Joining ASSA ABLOY means being part of a fast-moving and highly innovative company with diverse opportunities in more than 70 countries.

What can you expect as a master’s thesis intern at ASSA ABLOY? Cutting edge technology, a steep learning curve, dedicated supervisors from within the enterprise, a group of fellow master’s thesis students to share the experience with – and much more.

Take a look at our exciting range of master’s thesis subjects below, and don’t forget to mark in your application the number of the subject or subjects you are interested in writing your thesis on. Please also let us know your thoughts on how you would approach the subject.

Link to Linkedin application!

1. R&D Spend

How do innovation companies treat and differentiate R&D costs with agile WoW and software development? How measure effectiveness of R&D and RoI of R&D also with regards to the increasing "maintenance" development needed to keep software in the market?

2. Valuation of Intangible Assets

How can we determine the value and put a price tag on the intangible assets of ASSA ABLOY? Data, knowledge, relational and organizational assets are of particular relevance for this work. Potential perspectives can be transactions, internal prioritization, technology planning, etc. The students will work with an internal deliverable which will complement their academic paper.

3. Multi-mode Organization for Managing Intangible Assets

How should ASSA ABLOY be organized for optimal value creation? Software and data push our IP responsibilities beyond traditional IPRs and when devices interact with devices in ecosystems, IP becomes key in negotiations and transactions. The students will work with an internal deliverable which will complement their academic paper.


How do we identify, capture and control ASSA ABLOY’s intellectual assets, and in particular knowledge / organizational / relational assets? Potential perspective can be to prepare for an IoT future. The students will work with an internal deliverable which will complement their academic paper.
5. Intellectual Property in the Metaverse

How will ASSA ABLOY be impacted by the Metaverse? Potential perspective can be to investigate means of protection, feasibility and reasons around the development of the Metaverse. What will change by recognizing IP rights in the Metaverse and what will be the impact on business? The students will work with an internal deliverable which will complement their academic paper.

6. EU Data Act / AI Act

How will ASSA ABLOY be impacted by the EU Data Act / AI Act. Potential perspectives can be transactions, organization, internal prioritization, technology planning, organization, etc. The students will work with an internal deliverable which will complement their academic paper.

7 Life-Cycle Assessment Smart Lock

How will the digitalization of locks affect the systems and services around it, smart city development and sustainability, and is the added environmental burden of batteries, and electronics justified if they could unlock the potential for downstream customers and users. To ensure that potential negative impacts of digitalization is minimized, we want to calculate environmental impacts with Life Cycle Assessment (LCA), from production of the locks, use, to surrounding benefits and end-of-life

8. Human Detection using Lightweight Convolutional Neural Networks

We are developing a people counting prototype, that contains camera, accelerometer, and radar. It is mounted above doors and keeps count on the amount of people walking in and out. This information can be used by customers for purposes such as controlling ventilation or optimizing office environments. The goal of this project is to investigate the potential of the camera for people counting by developing an algorithm that can, in every frame of the video data, detect the amount of people in the frame. Also, since the algorithm is to be deployed on a microcontroller in the future, there are some restrictions on the number of computations and memory that the algorithm can use.

9. Optimization of Smart Phone Triangulation using Ultra Wideband Radio Nodes

Future locks and smart phones will contain Ultra-Wideband Radios (UWR) for smartphone positioning, these radios can estimate in what relative range and angle a user’s phone is. Using this data, can triangulation techniques and mathematical modeling be used to track a user’s smartphone location, using information from several UWR nodes? To simplify the installation process, is it possible to use the communication link between the UWRs to estimate the position for each lock, and update their respective location on the floor plan automatically?
10. Device Free Localization - Gray Box Modeling of Room Occupancy using Sensor Radio Link Quality Data

Wireless sensors are finding their way into homeowners’ windows and doors, and houses may contain several radio transmitting sensors in all rooms in the future. If a person or an object is in the way between two sensors, the quality of their radio link or Quality of Service (QoS) will be lowered. The thesis objective is to build a model that can predict the number of people in a house, and how long time they spend in a room, given the link quality between the sensors. With qualitative data collection, a part theoretical and part data-driven gray box model could be a viable approach.

11. Managed Databases

Managed databases are becoming more and more important to improve uptime and reduce development time for cloud services. This project is focused on how ASSA ABLOY can leverage the existing offerings when providing cloud-based solutions for our customers. In particular, offerings such as Cloud Firestore from Google and DynamoDB from Amazon should be compared in areas important to ASSA ABLOY including uptime, performance, scalability, and features.

12. Browser Crypto

In an ordinary web browser – web server session, human-readable contents (text, images) are sent from the server to the browser and then presented to a human user. This means that the web server has all the data the user can read in cleartext. In this project, we explore the feasibility of browser cryptography to achieve end-to-end encrypted data. The web server sends encrypted data to the browser where it is decrypted and then presented to the human user. An example of this the Proton Mail service at proton.me. Can ASSA ABLOY use similar technology to create a cloud-based access control system where end users are the only ones who can view the cleartext data? Some customers are hesitant to move to cloud-based solutions because they must share data with the cloud-service provider. Perhaps browser crypto is a way around this? Perhaps we can get the best of two worlds: the same security as self-hosting services and the convenience of web-based services.

13. Twist

ASSA ABLOY works with locks and several other devices around a door including door openers, door closers, access readers, communication hubs, request-to-exit buttons, and more. This project investigates the feasibility of using the new 10BASE-T1S Ethernet standard for wired, IP-based, communication around the door. The standard allows 10 mbit bandwidth or a single twisted pair of wires. And it is multi-drop, which makes installation much easier. Important questions to investigate include the following. What is the cost of typical hardware (Ethernet ICs)? How can the devices get an IP address when installed/turned on? How to connect to the public Internet? Should IPv6 be used? Is it possible to have an accessible public IP for each device around the door? Current solutions for connecting devices around the door include the CAN-bus. The shift to IP as a foundation is an important step for ASSA ABLOY and the project output will be an important factor when deciding on the next generation of wired communication around our doors.
14. Rapid

The student will investigate the feasibility of alternative programming languages for embedded programming. At ASSA ABLOY, we typically use the C language for embedded programming on our most resource-constrained devices. The nRF53 from Nordic Semiconductors is an example of a SoC we use. The student should consider alternatives to C that could support more rapid development and/or better quality. The comparison will likely include TinyGo, Rust, C++, and MicroPython. Can we produce embedded software more efficiently? More rapid? Higher quality? Can we mix, partly C, partly a more high-level language?

We are looking forward to your application!

To make sure your personal data is safe, we don’t look at any applications sent by email or post. Link to Linkedin application!

If you have any questions about the role or the process, email our Head of HR, Caroline Högberg: caroline.hogberg@assaabloy.com