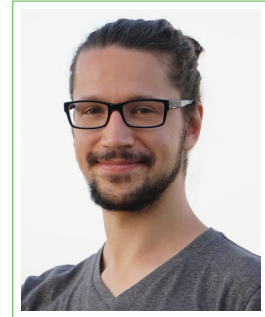


# Fritz Alder

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🐙 GitHub: [fritzalder](#)



## Experience

- since **PhD Researcher**, *imec DistriNet, KU Leuven, Belgium*.
  - Sep 2019 ○ PhD researcher supervised by Professor Frank Piessens and Jan Tobias Mühlberg
  - Research on trusted execution environments and trusted computing
  - Current topics include TEE-enforced availability for real-time systems
- Jan 2018 – **Research Assistant**, *Aalto University, School of Science, Espoo, Finland*.
  - Dec 2018 ○ Master thesis worker at the system security group headed by Professor Asokan
  - Research on trusted execution environments, system security, and applied cryptography
- Jan 2018 – **Security Consultant (part-time)**, *UBIQUE Networks, Whitby, Ontario, Canada*.
  - Jul 2018 ○ Remote security consultant for blockchain, Intel SGX, and P2P related projects
- Jun 2017 – **Research Assistant**, *Aalto University, School of Science, Espoo, Finland*.
  - Aug 2017 ○ Research on virtual machine migration for Intel SGX [2]

## Education

- since **Doctorate in Engineering Science (PhD)**, *KU Leuven, Belgium*.
  - Sep 2019 FWO fellow fundamental research at the imec DistriNet research group
- 2016 – 2017 **ERASMUS+ exchange year**, *Aalto University, Espoo, Finland*.
- Oct 2015 – **Master of Science (IT-Security)**, *Technical University Darmstadt, Germany*.
  - Mar 2019 Master thesis: TEE<sup>2</sup> - Combining Trusted Hardware to Enhance the Security of TEEs.
- 2011 – 2015 **Bachelor of Science (Computer Science)**, *RWTH Aachen University, Germany*

## Scholarships and travel grants

- Nov 2019 – Oct 2021 **PhD Fellowship fundamental research**, *Research Foundation - Flanders (FWO)*, Title of the project: Predictable resource sharing and resource availability with Trusted Execution Environments.
- Jun 2018 **DSN Student travel grant**, *DSN 2018, Luxemburg*.
- Nov 2016 & Dec 2018 **BlackHat travel grant**, *BlackHat Europe, London, United Kingdom*.
- Oct 2016 – Sep 2017 **ERASMUS+ scholarship**, *Aalto University, Espoo, Finland*.
- Oct 2016 – Mar 2017 **Finland scholarship**, *Max Mueller and Delphine Mueller-Allewyn Found.*

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## Skills

Programming	Very familiar: C, C++, Java, Python. Familiar: Bash, functional programming.
Platform Security	Extensive knowledge of Intel SGX and Sancus. Theoretical knowledge of other trusted execution environments such as ARM Trustzone and Keystone.
Tools	Tamarin Prover, IDA community edition, OllyDbg.
Languages	German: Native; English: Fluent; Dutch: Beginner

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## Public software projects

GitHub username: fritzalder

- Sep 2019 **S-FaaS** [1] - Secure Function as a Service with resource measurements in Intel SGX based on OpenWhisk and the Duktape Javascript engine. On GitHub.
- Apr 2018 **MiniONN** - Privacy-preserving neural networks based on homomorphic encryption and secure MPC. Implementation of the paper "Oblivious Neural Network Predictions via MiniONN transformations", Jian Liu et al., CCS 2017. On GitHub.
- Jan 2018 **Intel SGX Migration** [2] - C++ library for Intel SGX enclaves to securely migrate their persistent state (e.g. across virtual machines). On GitHub.

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## Voluntary Activities

- Jan 2018 – **Board Member**, *ESN Aalto*, Erasmus Student Network, Helsinki, Finland.
- Dec 2018 IT-Manager of the board of ESN Aalto. Solely responsible for GDPR compliance.
- Nov 2017 **Volunteer**, *Slush 2017*, Helsinki, Finland.  
Part of the team volunteering to organize the Slush Helsinki conference.
- Jan 2017 – **International Tutor**, *Aalto University*, Espoo, Finland.
- May 2017 Tutor of incoming exchange students at Aalto University.
- Oct 2013 – **Student Tutor**, *RWTH Aachen University*, Aachen, Germany.
- Mar 2014 Tutor for new computer science students at RWTH Aachen University. I mentored students throughout their first year in order to decrease the rate of students that abort their studies.

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## Publications

- [1] Fritz Alder, N Asokan, Arseny Kurnikov, Andrew Paverd, and Michael Steiner. S-FaaS: Trustworthy and accountable Function-as-a-Service using Intel SGX. In *Cloud Computing Security Workshop (CCSW)*. ACM, 2019.
- [2] Fritz Alder, Arseny Kurnikov, Andrew Paverd, and N. Asokan. Migrating SGX enclaves with persistent state. In *International Conference on Dependable Systems and Networks (DSN)*, pages 195–206. IEEE Computer Society, 2018.