

# Antoine Kaufmann

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## EDUCATION

- 2018 **Ph.D. in Computer Science and Engineering**  
University of Washington  
Advisors: Thomas Anderson, Simon Peter (UT Austin), Arvind Krishnamurthy  
Thesis: Efficient, Secure, and Flexible High Speed Packet Processing for Data Centers
- 2014 **M.Sc. ETH in Computer Science**  
ETH Zurich  
Advisor: Timothy Roscoe  
Thesis: Efficiently executing the Dragonet network stack
- 2012 **B.Sc. ETH in Computer Science**  
ETH Zurich  
Advisor: Timothy Roscoe  
Thesis: Low-latency OS protocol stack analysis

## PROFESSIONAL EXPERIENCE

- 2021 – present **Max Planck Institute for Software Systems, Germany**  
Tenure-Track Faculty
- 2018 – 2021 **Max Planck Institute for Software Systems, Germany**  
Research Group Leader: Operating Systems Group
- 2015 **Intel Labs, Hillsboro OR, USA**  
Research Intern Systems and Architecture
- 2006 – 2014 **HILOTEC E&C AG, Switzerland**  
Software Developer
- 2012 **ITmovement AG, Switzerland**  
Corporate Training Instructor  
(Network Background for VoIP technicians)

## PUBLICATIONS

- 2022 Hejing Li, Jialin Li, **Antoine Kaufmann**. SimBricks: End-to-End Network System Evaluation with Modular Simulation. In *2022 ACM SIGCOMM 2022 Conference (SIGCOMM)*, 2022.
- 2022 Rajath Shashidhara, Timothy Stamler, **Antoine Kaufmann**, Simon Peter. FlexTOE: Flexible TCP Offload with Fine-Grained Parallelism. In *19th USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, 2022.
- 2021 Artem Ageev, Mehrshad Lotfi Foroushani, **Antoine Kaufmann**. Exploring Domain-Specific Architectures for Network Protocol Processing. In *2021 Cloud@MICRO Workshop (Cloud@MICRO)*, 2021.
- 2020 Reza Karimi, Arpan Gujarati, Safya Alzayat, Wei Hao, **Antoine Kaufmann**, Ymir Vigfusson, Jonathan Mace. Serving DNNs like Clockwork: Performance Predictability from the Bottom Up. In *14th Symposium on Operating Systems Design and Implementation (OSDI)*, 2020. **Distinguished Artifact Award**.
- 2019 **Antoine Kaufmann**, Tim Stamler, Simon Peter, Naveen Kr. Sharma, Thomas Anderson, and Arvind Krishnamurthy. TCP Acceleration as an OS Service. In *14th EuroSys Conference (EuroSys)*, 2019.

- 2019 Amit Samanta, Suhas Shrinivasan, **Antoine Kaufmann**, Jonathan Mace. No DNN Left Behind: Improving Inference in the Cloud with Multi-Tenancy. In (*arXiv:1901.06887*), 2019.
- 2018 Phitchaya Mangpo Phothilimthana, Ming Liu, **Antoine Kaufmann**, Simon Peter, Rastislav Bodik, and Thomas Anderson. Floem: A Programming System for NIC-Accelerated Network Applications. In *13th Symposium on Operating Systems Design and Implementation (OSDI)*, 2018.
- 2017 Naveen Kr. Sharma, **Antoine Kaufmann**, Thomas Anderson, Changhoon Kim, Arvind Krishnamurthy, Jacob Nelson, and Simon Peter. Evaluating the Power of Flexible Packet Processing for Network Resource Allocation. In *14th USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, 2017.
- 2016 **Antoine Kaufmann**, Simon Peter, Naveen Kr. Sharma, Thomas Anderson, and Arvind Krishnamurthy. High performance packet processing with FlexNIC. In *21st International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2016.
- 2016 James Bornholt, **Antoine Kaufmann**, Jialin Li, Arvind Krishnamurthy, Emina Torlak, and Xi Wang. Specifying and checking file system crash-consistency models. In *21st International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2016.
- 2015 Kornilios Kourtis, Pravin Shinde, **Antoine Kaufmann**, and Timothy Roscoe. Intelligent NIC Queue Management in the Dragonet Network Stack. In *3rd Conference of Timely Results in Operating Systems (TRIOS)*, 2015.
- 2015 **Antoine Kaufmann**, Simon Peter, Thomas Anderson, and Arvind Krishnamurthy. FlexNIC: Rethinking Network DMA. In *15th Workshop on Hot Topics in Operating Systems (HOTOS)*, 2015.
- 2013 Pravin Shinde, **Antoine Kaufmann**, Kornilios Kourtis, and Timothy Roscoe. Modeling NICs with Unicorn. In *7th Workshop on Programming Languages and Operating Systems (PLOS)*, 2013.
- 2013 Pravin Shinde, **Antoine Kaufmann**, Timothy Roscoe, and Stefan Kaestle. Modeling NICs with Unicorn. In *14th Workshop on Hot Topics in Operating Systems (HOTOS)*, 2013.

## HONORS & AWARDS

- 2020 OSDI Distinguished Artifact Award
- 2020 Google Cloud Platform Research Credits, \$5K
- 2020 Finalist Facebook ML Systems Research Award (Co-PI)
- 2015 Eurosys Best Poster Award
- 2014 Gary Kildall Endowed Fellowship

## TEACHING EXPERIENCE

- 2021 – 2022 **Operating Systems (graduate)**, MPI-SWS, Saarland University  
Instructor
- 2019 – 2020 **Operating Systems (graduate)**, MPI-SWS, Saarland University  
Instructor
- 2017 **Computer Operating Systems (graduate)**, University of Washington  
Teaching Assistant, Guest Lecturer
- 2016 **Introduction to Operating Systems**, University of Washington  
Teaching Assistant, Tutor
- 2016 – 2017 **The Hardware/Software Interface**, University of Washington  
Tutor
- 2012 **Systems Programming and Computer Architecture**, ETH Zurich  
Teaching Assistant

## Operating Systems and Networks, ETH Zurich

2012 Teaching Assistant

### SUPERVISED STUDENTS

- 2020 – present **Hejing Li**, Doctoral Student, research engineer, intern
- 2019 – present **Mehrshad Lotfi**, Doctoral Student
- 2019 – present **Artem Ageev**, Doctoral Student
- 2022 – present **Matheus Stolet**, Doctoral Student
- 2022 – present **Vaastav Anand**, Doctoral Student (co-advised)
- 2022 – present **Jonas Kaufmann**, master’s research project
- 2018 – 2021 **Ahmed Nematallah**, master’s research project, thesis
- 2020 **Dominik Luche**, master thesis
- 2020 **Florian Bauckholt**, bachelor thesis
- 2020 **Emiliano Luci**, intern
- 2019 **Guruprasad Hedge**, master thesis
- 2017 **Paul Yau**, undergrad & master’s project (University of Washington)

### SERVICE

- 2023 **SOSP’23 general co-chair**
- 2023 **Program Committees: EuroSys’23**
- 2022 **Program Committees: ASPLOS’22, PerfNA’22**
- 2021 **SOSP’21 general co-chair treasurer**
- 2021 **Program Committees: EuroSys’21, EuroDW’21, VEE’21, PLOS’21**
- 2020 **Program Committees: SPMA’20**
- 2020 **CS @ Max Planck admissions committee**
- 2020 **CMMRS summer school poster session organization**
- 2019 **Program Committees: SFMA’19, EdgeSys’19**
- 2019 **CMMRS summer school poster session organization**
- 2015 **UW Graduate Admissions Committee**

### LANGUAGES

**German:** native

**English:** fluent

**French:** intermediate (reading), basic (writing, speaking)

### REFERENCES

**Thomas Anderson**  
tom@cs.washington.edu  
Professor  
University of Washington

**Peter Druschel**  
druschel@mpi-sws.org  
Founding Director  
Max Planck Institute for Software Systems

**Arvind Krishnamurthy**  
arvind@cs.washington.edu  
Professor  
University of Washington

**Simon Peter**  
simon@cs.utexas.edu  
Assistant Professor  
The University of Texas at Austin

**Timothy Roscoe**  
troscoe@inf.ethz.ch  
Professor  
ETH Zurich