

Aastha Mehta

Assistant Professor (tenure-track)
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Education

- 2012 – 2020 **Ph.D. in Computer Science (Summa Cum Laude)**
Max Planck Institute for Software Systems (MPI-SWS), Saarbrücken, Germany
and Saarland University (UdS), Saarbrücken, Germany
Advisors: Peter Druschel, Deepak Garg
Thesis: Ensuring Compliance with Data Privacy and Usage Policies in Online Services
- 2007 – 2011 **B.E. (Hons.) in Computer Science**
Birla Institute of Technology and Science (BITS) Pilani, Pilani Campus, India

Work Experience

- 2021 – **Assistant Professor**
Computer Science Department, University of British Columbia, Vancouver, Canada
- 2020 **Postdoctoral researcher (Nov – Feb 2020)**
Max Planck Institute for Software Systems (MPI-SWS), Germany
- 2015 **Research Intern (three months)**
Systems and Networking Group, Microsoft Research, Cambridge, UK
Mentor: Manuel Costa
Focus areas: Secure multiparty computation in the Cloud, and designing oblivious ML algorithms.
- 2011 – 2012 **Member of Technical Staff**
NetApp Inc., Bengaluru, India
Manager: Paramita Das
Focus areas: Optimizing the performance of the WAFL (Write Anywhere File Layout) file system checker.
- 2011 **Intern (six months)**
Advanced Technology Group, NetApp Inc., Bengaluru, India
Mentor: Ajay Bakre and Priya Sehgal
Focus areas: Improving the capacity utilization in Hadoop storage clusters.
- 2010 **Summer Research Intern (three months)**
MPI-SWS, Saarbrücken, Germany
Mentor: Peter Druschel
Focus areas: Deterministic record and replay for multicore systems.

Honors and Awards

- 2018 **Invited to Rising Stars Workshop in EECS**
One of 76 women researchers in Computer Science, and one out of only 3 from Europe selected to attend this academic career workshop.
- 2016 **Invited to the 4th Heidelberg Laureate Forum**
One of 200 young researchers selected to attend the forum. Also awarded Romberg travel grant fellowship, which covered the travel expenses.
- 2009 **Goldman Sachs Global Leaders Award**
One of top 50 students in India across the fields of science, engineering, economics and humanities.

Grants

- 2021 – 2026 **NSERC Discovery Grant**
Mitigating Side-Channel Leaks in Next-Generation Cloud Systems
- 2021 – 2024 **DND/NSERC Discovery Grant Supplement**
Mitigating Side-Channel Leaks in Next-Generation Cloud Systems

Publications

- USENIX Security'22 **Pacer: Comprehensive Network Side-Channel Mitigation in the Cloud**
Aastha Mehta, Mohamed Alzayat, Roberta De Viti, Björn B. Brandenburg, Peter Druschel, Deepak Garg
(To appear)
- Scientific Reports, 2022 **Listening to Bluetooth Beacons for Epidemic Risk Mitigation***
Gilles Barthe, Roberta De Viti, Peter Druschel, Deepak Garg, Manuel Gomez-Rodriguez, Pierfrancesco Ingo, Heiner Kremer, Matthew Lentz, Lars Lorch, Aastha Mehta, Bernhard Schölkopf (*Authors listed in alphabetical order)
- White Paper, 2020 **PanCast: Listening to Bluetooth Beacons for Epidemic Risk Mitigation***
Gilles Barthe, Roberta De Viti, Peter Druschel, Deepak Garg, Manuel Gomez-Rodriguez, Pierfrancesco Ingo, Matthew Lentz, Aastha Mehta, Bernhard Schölkopf (*Authors listed alphabetically)
arXiv: CoRR/abs/2011.08069
- USENIX Security'17 **Qapla: Policy compliance in database-backed systems**
Aastha Mehta, Eslam Elnikety, Katura Harvey, Deepak Garg, Peter Druschel
USENIX Security Symposium, Vancouver, Canada
- USENIX Security'16 **Thoth: Comprehensive Policy Compliance in Data Retrieval Systems**
Eslam Elnikety, Aastha Mehta, Anjo Vahldiek-Oberwagner, Deepak Garg, Peter Druschel
USENIX Security Symposium, Austin, USA
- USENIX Security'16 **Oblivious Multi-Party Machine Learning on Trusted Processors**
Olga Ohrimenko, Felix Schuster, Cédric Fournet, Aastha Mehta, Sebastian Nowozin, Kapil Vaswani, Manuel Costa
USENIX Security Symposium, Austin, USA
- EuroSys'15 **Guardat: Enforcing data policies at storage layer**
Anjo Vahldiek-Oberwagner, Eslam Elnikety, Aastha Mehta, Deepak Garg, Peter Druschel, Ansley Post, Rodrigo Rodrigues, Johannes Gehrke
European Conference on Computer Systems (EuroSys), Bordeaux, France
- HiPC'11 **HDFS Space Consolidation**
Aastha Mehta, Deepti Banka, Kartheek Muthyala, Priya Sehgal, Ajay Bakre
Student Research Symposium, International Conference on High Performance Computing (HiPC)

Invited Talks

- Apr 2022 **Pacer: Comprehensive Network Side-Channel Mitigation in the Cloud**
McGill University, Canada
- Feb 2022 **Pacer: Comprehensive Network Side-Channel Mitigation in the Cloud**
University of Toronto, Canada
- Sep 2021 **Pacer: Comprehensive Network Side-Channel Mitigation in the Cloud**
ENS Lyon, France
- May 2021 **PanCast: Listening to Bluetooth Beacons for Epidemic Risk Notification**
UC San Diego, USA
- Mar 2021 **Pacer: Comprehensive Network Side-Channel Mitigation in the Cloud**
IIT Kharagpur, India
- Feb – Mar 2020 **Policy Compliance in Online Services**
IMDEA Software Institute, Spain
CISPA Helmholtz Center for Information Security, Germany
Microsoft Research Redmond, USA
Dept. of Computer Science, Washington University in St. Louis, USA
Dept. of Computer Science, University of British Columbia, Canada
David R. Cheriton School of Computer Science, University of Waterloo, Canada
Dept. of Computer Science, George Mason University, USA
Dept. of Computer Science, Duke University, USA
Dept. of Computer Science, Northwestern University, USA
Dept. of EECS, Oregon State University, USA
School of Computing Science, Simon Fraser University, Canada
- May 2019 **Pacer: Network Side-Channel Mitigation in the Cloud**
University of Maryland, USA, Host: Bobby Bhattacharjee
- Nov 2018 **Pacer: Network Side-Channel Mitigation in the Cloud**
Systems lunch at Cornell University, USA, Host: Lorenzo Alvisi

- Jul 2018 **Pacer: Efficient I/O Side-Channel Mitigation in the Cloud**
First Workshop on Speculative Side Channel Analysis (WoSSCA), Amsterdam, Netherlands
- Aug 2017 **Qapla: Policy Compliance in Database-Backed Systems**
USENIX Security Symposium, Vancouver, Canada

Professional Activities

Organizer

OSDI Mentorship OSDI Mentorship Scheme (co-organizer), 2020

Program Committee

- S&P IEEE Oakland S&P (2023)
- JSys Journal of Systems Research, Systems Security track (2023)
- ASPLOS Architectural Support for Programming Languages and Operating Systems (2022)
- USENIX Security USENIX Security Symposium (2022, 2023)
- EuroSys European Conference on Computer Systems (2021, 2022)
- SYSTOR Systems and Storage Conference (2021)
- PriSC Workshop on Principles of Secure Compilation (2021)
- EuroDW EuroSys Doctoral Workshop (2021)
- MiddlewareDW Middleware Doctoral Symposium (2020)

Editorial Board

JSys Journal of Systems Research (2022)

External Reviewer

- HotOS Hot Topics in Operating Systems (2017)
- OSDI Operating Systems Design and Principles (2016)
- FC Financial Cryptography (2016)
- ASPLOS Architectural Support for Programming Languages and Operating Systems (2015)
- MobiSys Mobile Symposium (2015)
- EuroSys European Conference on Computer Systems (2014)

Teaching Experience

- 2021 **Instructor, Security & Privacy in the Era of Side Channels (graduate course)**, UBC
- 2019 **Co-instructor, Operating Systems (core course)**, MPI-SWS and UdS
Lectures on storage subsystem.
- 2016 **Teaching Assistant, Secure Information Flow Control in Systems (seminar)**, MPI-SWS and UdS
Assisted in seminar design, teaching, and evaluation
- 2013 **Teaching Assistant, Operating Systems (core course)**, MPI-SWS and UdS
Assisted in designing and evaluating assignments and exams.

Mentoring and Advising

- 2021 – Amir Sabzi (M.Sc. student, UBC Vancouver)
- 2017 – 2019 Roberta De Viti (Ph.D. student, MPI-SWS)
- 2016 – 2019 Mohamed Alzayat (Ph.D. student, MPI-SWS)
- 2016 Katura Harvey (Intern, MPI-SWS)