Aastha Mehta

Assistant Professor (tenure-track)
Computer Science Department, University of British Columbia, Vancouver

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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.

2009 **Project trainee (three months)**
Division of Remote Handling & Robotics, Bhabha Atomic Research Centre (BARC), Mumbai, India
Mentor: Dr. P. K. Pal
Focus areas: Indoor localization of mobile robots using a laser range finder.

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

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)

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

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**
UCSD, 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

ASPLOS — Architectural Support for Programming Languages and Operating Systems (2022)

USENIX Security — USENIX Security Symposium (2022)

SYSTOR — Systems and Storage Conference (2021)

EuroDW — EuroSys Doctoral Workshop (2021)

PriSC — Workshop on Principles of Secure Compilation (2021)

EuroSys — European Conference on Computer Systems (2021, 2022)

MiddlewareDW — Middleware Doctoral Symposium (2020)

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 – — Nichole Boufford (M.Sc. student, UBC Vancouver)

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)