

RESEARCH INTERESTS	My current research is centered around developing systems and techniques that enable developers to reason precisely about the performance behavior of their code <i>before</i> it is deployed. My dissertation work introduced the notion of latency interfaces: simple, succinct programs that summarize a system's latency behaviour just like semantic interfaces such as code documentation and specifications summarize functionality.	
EDUCATION	Ecole Polytechnique Federale de Lausanne (EPFL)	<i>2017-2023</i>
	Doctor of Philosophy (PhD), Computer Science Thesis: Latency Interfaces for Systems Code Advisors: Prof. George Candea & Prof. Katerina Argyraki	
	Indian Institute of Technology Bombay (IITB)	<i>2013-2017</i>
	Bachelor of Technology with Honours, Electrical Engineering Thesis: Performance Modelling and Dynamic Scheduling for Heterogeneous ISA Processors Advisor: Prof. Virendra Singh	
PROFESSIONAL EXPERIENCE	Postdoctoral Scholar at UC Berkeley	<i>March 2024 - Present</i>
	Supervisor: Prof. Sylvia Ratnasamy and Prof. Scott Shenker Working on verifying performance properties of wide-area networks.	
	Postdoctoral Scholar at EPFL	<i>Sep 2023 - Feb 2024</i>
	Supervisor: Prof. George Candea Worked on a wide range of topics centred around on building systems with predictable performance behavior	
	Visiting Researcher at UC Berkeley	<i>Sep 2022 - Feb 2023</i>
	Supervisor: Prof. Sylvia Ratnasamy Worked on Performance Interfaces for Hardware Accelerators	
	Summer Intern at EPFL	<i>May - July 2016</i>
	Supervisor: Prof. Babak Falsafi Ported the QFlex Trace Simulator from QEMU 2.3 to QEMU 2.6	
HONORS & AWARDS	<ul style="list-style-type: none"> • Eurosyst Roger Needham Dissertation Award • ACM SIGOPS Dennis M. Ritchie Doctoral Dissertation Award • Thesis nominated by EPFL for ACM Doctoral Dissertation Award • Best Paper Award • EPFL Doctoral Fellowship 	<i>2024</i> <i>2023</i> <i>2023</i> <i>VDAT 2019</i> <i>2017</i>
PUBLICATIONS	<ul style="list-style-type: none"> • Automatically Reasoning About How Systems Code Uses the CPU Cache Rishabh Iyer, Katerina Argyraki, George Candea. <i>Symposium on Operating Systems Design and Implementation (OSDI)</i>, 2024. Acceptance rate: 15.6% • Performance Interfaces for Hardware Accelerators Jiacheng Ma, Rishabh Iyer, Sahand Kashani, Mahyar Emami, Thomas Bourgeat, George Candea. <i>Symposium on Operating Systems Design and Implementation (OSDI)</i>, 2024. Acceptance rate: 15.6% • Achieving Microsecond-Scale Tail Latency Efficiently with Approximate Optimal Scheduling Rishabh Iyer, Musa Unal, Marios Kogias, George Candea. <i>Symposium on Operating Systems Principles (SOSP)</i>, 2023. Acceptance rate: 18.7% • The Case for Performance Interfaces for Hardware Accelerators Rishabh Iyer, Jiacheng Ma, Katerina Argyraki, George Candea, Sylvia Ratnasamy. <i>Hot Topics in Operating Systems (HotOS)</i>, 2023. Acceptance rate: 26.4% 	

- **Performance Interfaces for Network Functions**
Rishabh Iyer, Katerina Argyraki, George Candea.
Symposium on Networked Systems Design and Implementation (NSDI), 2022. Acceptance rate: 19.7%
- **Bypassing the Load Balancer Without Regrets.**
Marios Kogias, Rishabh Iyer, Edouard Bugnion.
Symposium on Cloud Computing (SoCC), 2020. Acceptance rate: 24.4%
- **Classification-Based Scheduling in Heterogeneous-ISA Architectures**
Nirmal Boran, Dinesh Yadav, Rishabh Iyer.
Symposium on VLSI Design and Test (VDATE), 2020. Acceptance rate: 28.7%
- **Verifying Software Network Functions with No Verification Expertise**
Arseniy Zaostrovnykh, Solal Pirelli, Rishabh Iyer, Luis Pedrosa, Matteo Rizzo, Katerina Argyraki, George Candea.
Symposium on Operating Systems Principles (SOSP), 2019. Acceptance rate: 13.7%
- **Performance Modelling and Dynamic Scheduling on Heterogeneous-ISA Architectures**
Nirmal Boran, Dinesh Yadav, Rishabh Iyer
Symposium on VLSI Design and Test (VDATE), 2019. Acceptance rate: 27.3%
Awarded Best Paper
- **Performance Contracts for Software Network Functions**
Rishabh Iyer, Luis Pedrosa, Arseniy Zaostrovnykh, Solal Pirelli, Katerina Argyraki, George Candea.
Symposium on Networked Systems Design and Implementation (NSDI), 2019. Acceptance rate: 14.7%
- **Automated Synthesis of Adversarial Workloads for Network Functions**
Luis Pedrosa, Rishabh Iyer, Arseniy Zaostrovnykh, Jonas Fietz, Katerina Argyraki.
ACM SIGCOMM Conference (SIGCOMM), 2018. Acceptance rate: 18%

TEACHING	CS 522: Principles of Computer Systems (EPFL)	<i>Fall 2019, 2020, 2021, 2022</i>
ASSISTANTSHIPS	CS 305: Software Engineering (EPFL)	<i>Fall 2018</i>
	MA 207: Analysis 4 - Vector Calculus (EPFL)	<i>Spring 2018, 2019</i>
	PH 107: Quantum Physics (IITB)	<i>Fall 2014</i>
RESEARCH MENTORSHIP	<ul style="list-style-type: none"> • Jiacheng Ma (PhD student at EPFL) Performance interfaces for hardware accelerators Second author on publication at HotOS'23, lead author on publication at OSDI'24. • Musa Unal (PhD student at EPFL) Cooperative scheduling for microsecond-scale datacenter applications Second author on publication at SOSP'23. • Kumar Kartikeya Dwivedi (PhD student at EPFL) Fast, flexible, and practical kernel extensions Lead author on submission to SOSP'24 • Ayoub Chouak (summer intern at EPFL) Leveraging performance interfaces to identify constant-time violations in cryptographic code Significant contributor to publication at NSDI'22. • Yugesh Kothari (PhD student at EPFL) Performance interfaces for eBPF offloads in the Linux kernel Significant contributor to the PIX open source tool. • Alexander Krenstsel (PhD student at UC Berkeley) Input Validation for Software-Defined Wide Area Networks Lead author on submission to HotNets 2024. • Ziming Mao (PhD student at UC Berkeley) Revisiting cache freshness for emerging real-time applications Lead author on submission to HotNets 2024. • Rathin Singla (PhD student at UCLA) 	<i>Fall 2022 - Present</i> <i>Summer 2022 - Fall 2023</i> <i>Summer 2023 - Present</i> <i>Summer 2021</i> <i>Fall 2022</i> <i>Spring 2024 - Present</i> <i>Spring 2024 - Present</i> <i>Fall 2022 - Present</i>

A verified, extensible transport stack

Lead author on submission to HotNets 2024.

- Narek Galstyan (PhD student at UC Berkeley)

Application-integrated record and replay for distributed systems

Fall 2022 - Spring 2023