

Rishabh Iyer

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) Doctor of Philosophy (PhD), Computer Science Thesis: Latency Interfaces for Systems Code Advisors: Prof. George Candea & Prof. Katerina Argyraki	<i>2017-2023</i>
	Indian Institute of Technology Bombay (IITB) Bachelor of Technology with Honours, Electrical Engineering Thesis: Performance Modelling and Dynamic Scheduling for Heterogeneous ISA Processors Advisor: Prof. Virendra Singh	<i>2013-2017</i>
PROFESSIONAL EXPERIENCE	Postdoctoral Scholar at EPFL Supervisor: Prof. George Candea Worked on a wide range of topics centred around on building systems with predictable performance behavior	<i>Sep 2023 - Present</i>
	Visiting Researcher at UC Berkeley Supervisor: Prof. Sylvia Ratnasamy Worked on Performance Interfaces for Hardware Accelerators	<i>Sep 2022 - Feb 2023</i>
	Summer Intern at EPFL Supervisor: Prof. Babak Falsafi Ported the QFlex Trace Simulator from QEMU 2.3 to QEMU 2.6	<i>May - July 2016</i>
AWARDS	<ul style="list-style-type: none">• ACM SIGOPS Dennis M. Ritchie Doctoral Dissertation Award• Best Paper Award• EPFL Doctoral Fellowship	<i>2023</i> <i>VDAT 2019</i> <i>2017</i>
PUBLICATIONS	<ul style="list-style-type: none">• 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. <i>Symposium on Networked Systems Design and Implementation (NSDI)</i>, 2022. Acceptance rate: 19.7%• Bypassing the Load Balancer Without Regrets. Marios Kogias, Rishabh Iyer, Edouard Bugnion. <i>Symposium on Cloud Computing (SoCC)</i>, 2020. Acceptance rate: 24.4%• Classification-Based Scheduling in Heterogeneous-ISA Architectures Nirmal Boran, Dinesh Yadav, Rishabh Iyer. <i>Symposium on VLSI Design and Test (VDAT)</i>, 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	<ul style="list-style-type: none">• Musa Unal (PhD student at EPFL)	<i>Summer 2022 - Present</i>
MENTORSHIP	Cooperative scheduling for microsecond-scale data center applications	
	Second author on publication at SOSP'23.	
	<ul style="list-style-type: none">• Jiacheng Ma (PhD student at EPFL)	<i>Fall 2022 - Present</i>
	Performance Interfaces for Hardware Accelerators	
	Second author on publication at HotOS'23, lead author on submission to OSDI'24.	
	<ul style="list-style-type: none">• Ayoub Chouak (summer intern at EPFL)	<i>Summer 2021</i>
	Leveraging performance interfaces to identify constant-time violations in cryptographic code	
	Significant contributor to publication at NSDI'22.	
	<ul style="list-style-type: none">• Yugesh Kothari (PhD student at EPFL)	<i>Fall 2022</i>
	Performance interfaces for eBPF offloads in the Linux kernel	
	Significant contributor to the PIX open source tool.	
	<ul style="list-style-type: none">• Kartikeya Kumar Dwivedi (PhD student at EPFL)	<i>Summer 2023 - Present</i>
	Enabling Safe, Concurrent, and Flexible Fast-path Application Logic in the OS	
	<ul style="list-style-type: none">• Narek Galstyan (PhD student at UC Berkeley)	<i>Fall 2022 - Present</i>
	Application-integrated record and replay for distributed systems	
	<ul style="list-style-type: none">• Rathin Singla (PhD student at UCLA)	<i>Fall 2022 - Present</i>
	A verified, extensible transport stack	