

RESEARCH INTERESTS	I am a computer systems researcher (broadly construed), and most of my work lies at the intersection of systems, networking, hardware and formal verification. My current research focuses on developing techniques that enable developers to reason precisely about the expected performance of their systems <i>before</i> they are deployed in production. My <a href="#">dissertation work</a> 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	<b>Ecole Polytechnique Federale de Lausanne (EPFL)</b> <span style="float: right;"><i>2017-2023</i></span> Doctor of Philosophy (PhD), Computer Science Thesis: Latency Interfaces for Systems Code Advisors: Prof. George Candea & Prof. Katerina Argyraki	
	<b>Indian Institute of Technology Bombay (IITB)</b> <span style="float: right;"><i>2013-2017</i></span> Bachelor of Technology with Honours, Electrical Engineering Thesis: Performance Modelling and Dynamic Scheduling for Heterogeneous ISA Processors Advisor: Prof. Virendra Singh	
PROFESSIONAL EXPERIENCE	<b>Postdoctoral Scholar at UC Berkeley</b> <span style="float: right;"><i>March 2024 - Present</i></span> Supervisor: Prof. Sylvia Ratnasamy and Prof. Scott Shenker Working on verifying performance properties of wide-area networks.	
	<b>Postdoctoral Scholar at EPFL</b> <span style="float: right;"><i>Sep 2023 - Feb 2024</i></span> Supervisor: Prof. George Candea Worked on a wide range of topics centred around on building systems with predictable performance behavior	
	<b>Visiting Researcher at UC Berkeley</b> <span style="float: right;"><i>Sep 2022 - Feb 2023</i></span> Supervisor: Prof. Sylvia Ratnasamy Worked on Performance Interfaces for Hardware Accelerators	
	<b>Summer Intern at EPFL</b> <span style="float: right;"><i>May - July 2016</i></span> 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"> <li>• Dimitris N. Chorafas Dissertation Award <span style="float: right;"><i>2024</i></span></li> <li>• eBPF Foundation Research Award <span style="float: right;"><i>2024</i></span></li> <li>• Eurosys Roger Needham Dissertation Award <span style="float: right;"><i>2024</i></span></li> <li>• ACM SIGOPS Dennis M. Ritchie Doctoral Dissertation Award <span style="float: right;"><i>2023</i></span></li> <li>• Thesis nominated by EPFL for ACM Doctoral Dissertation Award <span style="float: right;"><i>2023</i></span></li> <li>• Best Paper Award <span style="float: right;"><i>VDAT 2019</i></span></li> <li>• EPFL Doctoral Fellowship <span style="float: right;"><i>2017</i></span></li> </ul>	
PUBLICATIONS	<ul style="list-style-type: none"> <li>• <b>Fast, Flexible, and Practical Kernel Extensions</b>              Kumar Kartikeya Dwivedi, <a href="#">Rishabh Iyer</a>, Sanidhya Kashyap.  <i>Symposium on Operating Systems Principles (SOSP)</i>, 2024. Acceptance rate: 17.3%  <b>Also accepted to the Linux Plumbers Conference (LPC) 2024.</b>  <a href="#">eBPF Foundation Research Award 2024.</a> </li> </ul>	

- **Automatically Reasoning About How Systems Code Uses the CPU Cache**  
Rishabh Iyer, Katerina Argyraki, George Candea.  
*Symposium on Operating Systems Design and Implementation (OSDI)*, 2024. Acceptance rate: 15.6%  
**Also accepted to the Linux Plumbers Conference (LPC) 2024.**
- **Performance Interfaces for Hardware Accelerators**  
Jiacheng Ma, Rishabh Iyer, Sahand Kashani, Mahyar Emami, Thomas Bourgeat, George Candea.  
*Symposium on Operating Systems Design and Implementation (OSDI)*, 2024. Acceptance rate: 15.6%
- **Achieving Microsecond-Scale Tail Latency Efficiently with Approximate Optimal Scheduling**  
Rishabh Iyer, Musa Unal, Marios Kogias, George Candea.  
*Symposium on Operating Systems Principles (SOSP)*, 2023. Acceptance rate: 18.7%
- **The Case for Performance Interfaces for Hardware Accelerators**  
Rishabh Iyer, Jiacheng Ma, Katerina Argyraki, George Candea, Sylvia Ratnasamy.  
*Hot Topics in Operating Systems (HotOS)*, 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 (VDAT)*, 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 (VDAT)*, 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)	Fall 2019, 2020, 2021, 2022
ASSISTANTSHIPS	CS 305: Software Engineering (EPFL)	Fall 2018
	MA 207: Analysis 4 - Vector Calculus (EPFL)	Spring 2018, 2019
	PH 107: Quantum Physics (IITB)	Fall 2014
RESEARCH	• Jiacheng Ma (PhD student at EPFL)	Fall 2022 - Present
MENTORSHIP	Performance interfaces for hardware accelerators	
	Second author on <a href="#">publication</a> at HotOS'23, lead author on publication at OSDI'24.	
	• Musa Unal (PhD student at EPFL)	Summer 2022 - Fall 2023
	Cooperative scheduling for microsecond-scale datacenter applications	
	Second author on <a href="#">publication</a> at SOSP'23.	
	• Kumar Kartikeya Dwivedi (PhD student at EPFL)	Summer 2023 - Present
	Fast, flexible, and practical kernel extensions	

- Lead author on publication at SOSP'24
- Ayoub Chouak (summer intern at EPFL) *Summer 2021*  
 Leveraging performance interfaces to identify constant-time violations in cryptographic code  
 Significant contributor to [publication](#) at NSDI'22.
  - Yugesh Kothari (PhD student at EPFL) *Fall 2022*  
 Performance interfaces for eBPF offloads in the Linux kernel  
 Significant contributor to the [PIX](#) open source tool.
  - Alexander Krenstsel (PhD student at UC Berkeley) *Spring 2024 - Present*  
 Input Validation for Software-Defined Wide Area Networks  
 Lead author on submission to HotNets 2024.
  - Ziming Mao (PhD student at UC Berkeley) *Spring 2024 - Present*  
 Revisiting cache freshness for emerging real-time applications  
 Lead author on submission to HotNets 2024.
  - Rathin Singla (PhD student at UCLA) *Fall 2022 - Present*  
 A verified, extensible transport stack  
 Lead author on submission to HotNets 2024.
  - Narek Galstyan (PhD student at UC Berkeley) *Fall 2022 - Spring 2023*  
 Application-integrated record and replay for distributed systems