

Marios Kogias

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Research Focus

Operating Systems, Networking, Distributed Systems, Datacenters, Tail Latency, Remote Procedure Calls, Dataplanes, Scheduling, Load-balancing, Network Transports, In-Network Compute

Experience

Assistant Professor June 2022–Present
Imperial College London

Visiting Researcher June 2022–December 2025
Microsoft Azure Research, Cambridge, UK – Confidential Computing Group

Researcher September 2020–May 2022
Microsoft Research, Cambridge, UK – Confidential Computing Group

Research Intern June–September 2018
Microsoft Research, Redmond, US – Cloud Efficiency Group

Software Engineering Intern June–September 2016
Google, Mountain View, US – Platforms Group

Software Engineering Intern November 2014–April 2015
CERN, Geneva, CH

Education

Doctor of Philosophy September 2015–August 2020
École Polytechnique Fédérale de Lausanne (EPFL), Switzerland – Advisor: Edouard Bugnion

Diploma (Master's equivalent) October 2009–October 2014
National Technical University of Athens (NTUA), Greece – GPA: 9.36/10.00 (top 2%), Advisor: Nektarios Koziris

Awards

Distinguished Reviewer ASPLOS 2024
ABB Dissertation Award 2022
Dennis M. Ritchie Doctoral Dissertation Award 2021
Roger Needham 2021 Honorable Mention
ASPLOS 2021 Distinguished Artifact
Eurosys 2020 Best Student Paper
2019 IBM PhD Fellowship
EPFL PhD Fellowship 2015-2016

Teaching

Computing Research Collective (COM 60033) – Winter 2024, 2025

Networked Systems (COM 60032/7011) – Winter 2023, 2024, 2025

Computer Networks and Distributed Systems (COM 70041) – Spring 2023, 2024, 2025, 2026

Object Oriented Design and Programming (COM 70036) – Winter 2022

Professional Service

Program Committees: OSDI (2024-2026), SIGCOMM (2024), CoNEXT (2024-2026), NSDI (2023), EuroSys (2022-2026), ASPLOS (2022-2026), EuroSP(2026), Middleware (2023-2024), SOSR (2021,2022), VEE (2021), ANCS (2021), OOPSLA (2021), EuroDW (2021)

Leadership Roles: ACM SIGOPS European Chapter Treasurer 2024–now, ASPLOS 2027 Finance Chair, NINES 2026 European POD organiser, EuroSys Doctoral Workshop 2026 Co-chair, SOSP 2026 Sponsorship Co-chair, SysTEX’25 Workshop Co-chair, Workshops/Tutorials co-Chair EuroSys 2023, Workshops/Tutorials co-Chair ASPLOS 2022, Judge SOSP’23 SRC

Funding

PI ARIA Trust Everything, Everywhere pre-program discovery funding, 2025, £20,000

co-PI Unrestricted Gift VMWare/Broadcom , 2025, \$587,106

PI ERC Starting Grant, 2025, €1,499,000

PI EPSRC Systemic AI Safety Grant, 2025, £243,278

PI SUI Academic Research Award, 2024, £20,100

co-PI Imperial-NTU Collaboration Fund, 2024, £16,000

co-PI Center for Sectoral Economic Performance, 2024, £36,570,382

PI Unrestricted Gift Mysten Labs, 2023, £40,000

Conference Publications

2026

Patel, Jainil, Lucas Graeff Buhl-Nielsen, Adrien Ghosn, and Marios Kogias (2026). “KRAKENGUARD: Towards Fine-Grained eBPF Isolation”. In: *Proceedings of the 23rd USENIX Symposium on Networked Systems Design and Implementation (NSDI)*.

2025

Liu, Zhengqing, Musa Unal, Matthew J. Parkinson, and Marios Kogias (2025). “DORADD: Deterministic Parallel Execution in the Era of Microsecond-Scale Computing”. In: *Proceedings of the 30th ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP)*.

Prasopoulos, Konstantinos, Ryan Kosta, Edouard Bugnion, and Marios Kogias (2025). “SIRD: A Sender-Informed, Receiver-Driven Datacenter Transport Protocol”. In: *Proceedings of the 22nd USENIX Symposium on Networked Systems Design and Implementation (NSDI)*.

2023

Cheeseman, Luke, Matthew J. Parkinson, Sylvan Clebsch, Marios Kogias, Sophia Drossopoulou, David Chisnall, Tobias Wrigstad, and Paul Liétar (2023). “When Concurrency Matters: Behaviour-Oriented Concurrency”. In: *Proceedings of the ACM on Programming Languages (OOPSLA)*. Vol. 7. OOPSLA2.

Iyer, Rishabh, Musa Unal, Marios Kogias, and George Candea (2023). “Achieving Microsecond-Scale Tail Latency Efficiently with Approximate Optimal Scheduling”. In: *Proceedings of the 29th ACM Symposium on Operating Systems Principles (SOSP)*.

2021

Demoulin, Henri Maxime, Joshua Fried, Isaac Pedisich, Marios Kogias, Boon Thau Loo, Linh Thi Xuan Phan, and Irene Zhang (2021). “When Idling is Ideal: Optimizing Tail-Latency for Heavy-Tailed Datacenter Workloads with Perséphone”. In: *Proceedings of the 28th ACM Symposium on Operating Systems Principles (SOSP)*.

Ghosn, Adrien, Marios Kogias, Mathias Payer, James R. Larus, and Edouard Bugnion (2021). “Enclosure: language-based restriction of untrusted libraries”. In: *ASPLOS ’21: 26th ACM International Conference on Architectural Support for Programming Languages and Operating Systems, Virtual Event, USA, April 19-23, 2021*. Ed. by Tim Sherwood, Emery D. Berger, and Christos Kozyrakis. ACM, pp. 255–267.

Ustiugov, Dmitrii, Plamen Petrov, Marios Kogias, Edouard Bugnion, and Boris Grot (2021). “Benchmarking, Analysis, and Optimization of Serverless Function Snapshots”. In: *Proceedings of the 26th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*. Distinguished Artifact.

Wang, Yawen, Kapil Arya, Marios Kogias, Manohar Vanga, Aditya Bhandari, Neeraja J. Yadwadkar, Siddhartha Sen, Sameh Elnikety, Christos Kozyrakis, and Ricardo Bianchini (2021). “SmartHarvest: harvesting idle CPUs safely and efficiently in the cloud”. In: *EuroSys ’21: Sixteenth European Conference on Computer Systems, Online Event, United Kingdom, April 26-28, 2021*. Ed. by Antonio Barbalace, Pramod Bhatotia, Lorenzo Alvisi, and Cristian Cadar. ACM, pp. 1–16.

2020

Kogias, Marios and Edouard Bugnion (2020a). “HovercRaft: Scalability and Fault-tolerance for μ s-scale Datacenter Services”. In: *Proceedings of the 15th European Conference on Computer Systems (EuroSys)*. Best Student Paper Award.

Kogias, Marios, Rishabh R. Iyer, and Edouard Bugnion (2020). “Bypassing the load balancer without regrets”. In: *SoCC ’20: ACM Symposium on Cloud Computing, Virtual Event, USA, October 19-21, 2020*. Ed. by Rodrigo Fonseca, Christina Delimitrou, and Beng Chin Ooi. ACM, pp. 193–207.

2019

Kogias, Marios, Stephen Mallon, and Edouard Bugnion (2019). “Lancet: A self-correcting Latency Measuring Tool”. In: *Proceedings of the 2019 USENIX Annual Technical Conference, USENIX ATC 2019, Renton, WA, USA, July 10-12, 2019*. Ed. by Dahlia Malkhi and Dan Tsafir. USENIX Association, pp. 881–896.

Kogias, Marios, George Prekas, Adrien Ghosn, Jonas Fietz, and Edouard Bugnion (2019). “R2P2: Making RPCs first-class datacenter citizens”. In: *Proceedings of the 2019 USENIX Annual Technical Conference, USENIX ATC 2019, Renton, WA, USA, July 10-12, 2019*. Ed. by Dahlia Malkhi and Dan Tsafir. USENIX Association, pp. 863–880.

2017

Prekas, George, Marios Kogias, and Edouard Bugnion (2017). “ZygOS: Achieving Low Tail Latency for Microsecond-scale Networked Tasks”. In: *Proceedings of the 26th Symposium on Operating Systems Principles, Shanghai, China, October 28-31, 2017*. ACM, pp. 325–341.

Workshop Publications

2025

Abdollahi, Sina, Mohammad Maheri, Sandra Deepthy Siby, Marios Kogias, and Hamed Haddadi (2025). “An Early Experience With Confidential Computing Architecture for On-Device Model Protection”. In: *IEEE European Symposium on Security and Privacy, EuroS&P 2025 - Workshops, Venice, Italy, June 30 - July 4, 2025*. IEEE, pp. 401–410.

Jesalpura, Shyam, Dmitrii Ustiugov, Michal Baczun, Bora A Malper, Rustem Feyzkhanov, Edouard Bugnion, Marios Kogias, and Boris Grot (2025). “Shattering the ephemeral storage cost barrier for data-intensive serverless workflows”. In: *Proceedings of the 3rd Workshop on SErverless Systems, Applications and MEthodologies*, pp. 33–41.

Sefiane, Adel, Alireza Farshin, and Marios Kogias (2025). “MLSynth: Towards Synthetic ML Traces”. In: *Proceedings of the 2nd Workshop on Networks for AI Computing*, pp. 98–104.

Zheng, Yusheng, Panayiotis Gavriil, and Marios Kogias (2025). “uXDP: Frictionless XDP Deployments in Userspace”. In: *Proceedings of the 3rd Workshop on EBPF and Kernel Extensions*. eBPF ’25, pp. 8–14.

2024

Kubica, Szymon and Marios Kogias (2024). “ μ BPF: Using eBPF for Microcontroller Compartmentalization”. In: *Proceedings of the ACM SIGCOMM 2024 Workshop on eBPF and Kernel Extensions, eBPF 2024, Sydney, NSW, Australia, August 4-8, 2024*. ACM.

Lu, Dana, Boxuan Tang, Michael Paper, and Marios Kogias (2024). “Towards Functional Verification of eBPF Programs”. In: *Proceedings of the ACM SIGCOMM 2024 Workshop on eBPF and Kernel Extensions, eBPF 2024, Sydney, NSW, Australia, August 4-8, 2024*. ACM.

Siby, Sandra Deepthy, Sina Abdollahi, Mohammad Maheri, Marios Kogias, and Hamed Haddadi (2024). “GuaranTEE: Towards Attestable and Private ML with CCA”. In: *Proceedings of the 4th Workshop on Machine Learning and Systems, EuroMLSys 2024, Athens, Greece, 22 April 2024*. ACM, pp. 1–9.

2023

Castes, Charly, Adrien Ghosn, Neelu Shivprakash Kalani, Yuchen Qian, Marios Kogias, Mathias Payer, and Edouard Bugnion (2023). “Creating Trust by Abolishing Hierarchies”. In: *Proceedings of the 19th Workshop on Hot Topics in Operating Systems, HOTOS 2023, Providence, RI, USA, June 22-24, 2023*. Ed. by Malte Schwarzkopf, Andrew Baumann, and Natacha Crooks. ACM, pp. 231–238.

Lefeuvre, Hugo, David Chisnall, Marios Kogias, and Pierre Olivier (2023). “Towards (Really) Safe and Fast Confidential I/O”. In: *Proceedings of the 19th Workshop on Hot Topics in Operating Systems, HOTOS 2023, Providence, RI, USA, June 22-24, 2023*. Ed. by Malte Schwarzkopf, Andrew Baumann, and Natacha Crooks. ACM, pp. 214–222.

Yang, Rui and Marios Kogias (2023). “HEELS: A Host-Enabled eBPF-Based Load Balancing Scheme”. In: *Proceedings of the 1st Workshop on eBPF and Kernel Extensions, eBPF 2023, New York, NY, USA, 10 September 2023*. ACM, pp. 77–83.

2020

Kogias, Marios and Edouard Bugnion (2020b). “Tail-tolerance as a Systems Principle not a Metric”. In: *APNet ’20: 4th Asia-Pacific Workshop on Networking, Seoul, Korea, 3-4 August, 2020*. ACM, pp. 16–22.

2018

Kogias, Marios and Edouard Bugnion (2018). “Flow control for Latency-Critical RPCs”. In: *Proceedings of the 2018 Afternoon Workshop on Kernel Bypassing Networks, KBNets@SIGCOMM 2018, Budapest, Hungary, August 20, 2018*. ACM, pp. 15–21.

Pre-Prints

Ghosn, Adrien, Charly Castes, Neelu S. Kalani, Yuchen Qian, Marios Kogias, and Edouard Bugnion (2025). “Rethinking the confidential cloud through a unified low-level abstraction for composable isolation”. In: *CoRR* abs/2507.12364.

Neiheiser, Ray, Arman Babaei, Giannis Alexopoulos, Marios Kogias, and Eleftherios Kokoris-Kogias (2024). “CHIRON: Accelerating Node Synchronization without Security Trade-offs in Distributed Ledgers”. In: *CoRR* abs/2401.14278.