

Kyle Simpson

Résumé

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Kyle Simpson is a Research Associate in the Networked Systems Research Laboratory at the School of Computing Science, University of Glasgow. His research focusses on the use of programmable dataplane technology to make tomorrow's networks smarter and more adaptive, such as how they can enable reinforcement learning and other data-driven techniques in the dataplane. He has previously acted as an affiliate and research intern at the Lawrence Berkeley National Laboratory.

University Education

2017–2022 **PhD, Computing Science (Expected November 2022)**, University of Glasgow, Scotland

Thesis: *Online Learning on the Programmable Dataplane*

2012–2017 **MSci (1st Class), Computing Science**, University of Glasgow, Scotland

Focus: *Networks, Operating Systems, Combinatorics*. **Class Prize 2015–2017**.

Skills

- **Languages:** **Rust**, **C**, **P4 (Tofino)**, Go, Javascript, TypeScript, Python, Java, C++, SQL, and C#.
- **Tech:** Networked and distributed applications, embedded SmartNIC programming, eBPF, XDP, DPDK, SDN control and data plane design, and Linux testbed administration.
- **Presentation:** Years of **technical and scientific writing** experience (publications, OSS documentation, blogs), data analysis, oral presentation.
- **Critical analysis:** Scientific review and shadow programme committee experience for high-impact venues, e.g., ACM EuroSys, IEEE INFOCOM, IEEE TNSM.

Awards and Scholarships

2022 **SICSA PhD Conference 2022 – Best Research Paper Award**

“Revisiting the Classics: Online RL in the Programmable Dataplane” [1]

2022 **NOMS 2022 Student Travel Grant**, \$500

2020 **CoNEXT 2020 Registration Grant**, \$80

Last updated on September 7, 2022

- 2017 **EPSRC PhD Scholarship**, approx. £63,500
Engineering and Physical Sciences Research Council (EPSRC) funded PhD (3.5 years) at the University of Glasgow.
- 2015–2017 **Class Prizes**, £100 ea
Awarded to the student with the highest GPA in **Level 3** (18.8/22.0), **Hons** (20.7/22.0), and **MSci** (20.3/22.0)

Publications

- 2022** [1] **Kyle A. Simpson** and Dimitrios P. Pazaros. “Revisiting the Classics: On-line RL in the Programmable Dataplane”. In: *2022 IEEE/IFIP Network Operations and Management Symposium, NOMS 2022, Budapest, Hungary, April 25-29, 2022*. CORE 2021 Ranking: B, **SICSA PhD Conference 2022 Best Paper**. IEEE, 2022, pp. 1–10.
- 2021** [2] **Kyle A. Simpson** and Dimitrios P. Pazaros. “Poster: Online RL in the programmable dataplane with OPaL”. In: *CoNEXT ’21: The 17th International Conference on emerging Networking EXperiments and Technologies, Virtual Event, Munich, Germany, December 7–10, 2021*. CORE 2021 **Ranking: A**. ACM, 2021, pp. 471–472.
- 2020** [3] **Kyle A. Simpson**, Richard Cziva, and Dimitrios P. Pazaros. “Seiðr: Dataplane Assisted Flow Classification Using ML”. In: *IEEE Global Communications Conference, GLOBECOM 2020, Virtual Event, Taiwan, December 7–11, 2020*. CORE 2020 Ranking: B. IEEE, 2020, pp. 1–6.
- [4] **Kyle A. Simpson**, Simon Rogers, and Dimitrios P. Pazaros. “Per-Host DDoS Mitigation by Direct-Control Reinforcement Learning”. In: *IEEE Trans. Netw. Serv. Manag.* 17.1 (2020). SJR **Ranking: Q1**, pp. 103–117.
- 2017** [5] Ciaran McCreesh, Patrick Prosser, **Kyle Simpson**, and James Trimble. “On Maximum Weight Clique Algorithms, and How They Are Evaluated”. In: *Principles and Practice of Constraint Programming - 23rd International Conference, CP 2017, Melbourne, VIC, Australia, August 28 - September 1, 2017, Proceedings*. CORE 2017 **Ranking: A**. 2017, pp. 206–225.