

# Ben Simner

Curriculum Vitae

## Contact

University of Cambridge  
Department of Computer Science and Technology  
William Gates Building  
15 JJ Thomson Avenue  
Cambridge CB3 0FD

Email: [ben.simner@cl.cam.ac.uk](mailto:ben.simner@cl.cam.ac.uk)  
Web: <https://2plus2a.com>

## Positions & Experience

2025– **Research Associate**, Computer Science, University of Cambridge.  
2023-2025 **Research Assistant**, Computer Science, University of Cambridge.  
2018-2025 **PhD**, Computer Science, University of Cambridge.  
Autumn'18 **Intern**, University of Cambridge.  
Summer'17 **Intern**, Microsoft Research, Cambridge.  
Spring'17 **Webdev**, Jonathon Green's Dictionary of Slang<sup>1</sup>.  
Summer'16 **Intern**, University of York.  
May'13 **Work experience**, Citrix.

## Qualifications

2018-2025 **PhD**, Computer Science, University of Cambridge  
No corrections  
Thesis: Arm system semantics  
2014-2018 **MEng**, Computer Science, University of York  
First-class honours (with distinction)  
Dissertation: Automated comparison of implementations of purely functional data structures

## Grants/awards

- ▷ **Amazon Research Award**  
Gradual Lightweight Methods for High-Assurance Cloud Infrastructure. Automated Reasoning, Fall 2025. \$79,996.00 cash award plus \$10,000 in AWS credits. Peter Sewell (PI), **Ben Simner** (co-author), Kayvan Memarian (co-author), Rini Banerjee (co-author), Hiroyuki Katsura (co-author).
- ▷ **ERC Proof-of-Concept Grant**  
ELVER-CHECK: Well-grounded Lightweight Assurance for Critical Systems Software. 2024. ERC-2024-POC/101189371. €150,000. Peter Sewell (PI), **Ben Simner** (co-author), Kayvan Memarian (co-author), Jean Pichon-Pharabod (co-author).
- ▷ **Amazon Research Award**  
The Foundations of Cloud Virtual-machine Isolation. Automated Reasoning, Fall 2023. \$54,603 cash award plus \$20,000 in AWS credits. Peter Sewell (PI), **Ben Simner** (co-author).

## Publications

*Preamble* In this field, the primary venue for publication is peer-reviewed conference proceedings. These order authors by contribution, often (but not always) with the PI being last. Those listed are all full-length papers, and not extended abstracts or pre-publications. The Symposium on Operating System Principles (SOSP), International Symposium on Computer Architecture (ISCA), Computer Aided Verification (CAV), and the European Symposium on Programming (ESOP) are flagship venues in their fields, which [the Australian CORE rankings](#) rate as A or A\*, signifying the top 20% of leading Computer Science venues.

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<sup>1</sup><https://greensdictofslang.com/>

These venues are all competitively peer-reviewed, with acceptance rates typically around 15-25%, e.g. SOSPP'25 accepted 66 of 368 submissions (18%), ISCA'25 accepted 132 of 570 submissions (23%).

- ▷ **Ghost in the Android Shell: Pragmatic Test-oracle Specification of a Production Hypervisor** [pdf]  
Kayvan Memarian<sup>1</sup>, **Ben Simner**<sup>1</sup>, David Kaloper Meršinjak, Thibaut Pérami, Peter Sewell  
in Proceedings of the 31st ACM SIGOPS Symposium on Operating Systems Principles (SOSP'25), pp685-700 (16pp)  
<sup>1</sup>These authors contributed equally.
- ▷ **Arm system semantics** [pdf]  
**Ben Simner**  
PhD thesis, 2025
- ▷ **Precise exceptions in relaxed architectures** [pdf]  
**Ben Simner**, Alasdair Armstrong, Thomas Bauereiss, Brian Campbell, Ohad Kammar, Jean-Pichon Pharabod, and Peter Sewell  
in Proceedings of the 52nd International Symposium on Computer Architecture (ISCA'25), pp211-224 (14pp) BEST PAPER AWARD
- ▷ **Wait-Free Weak Reference Counting** [pdf]  
Matthew J. Parkinson, Sylvan Clebsch, and **Ben Simner**  
in Proceedings of the 2023 ACM SIGPLAN International Symposium on Memory Management, pp85-96 (12pp)
- ▷ **Isla: Integrating full-scale ISA semantics and axiomatic concurrency models (journal version)** [pdf]  
Alasdair Armstrong, Brian Campbell, **Ben Simner**, Christopher Pulte, and Peter Sewell  
in Formal Methods in System Design (FMSD), Volume 63, May 2023, pp110-133 (24pp)
- ▷ **Relaxed Virtual Memory in Armv8-A** [pdf]  
**Ben Simner**, Alasdair Armstrong, Jean Pichon-Pharabod, Christopher Pulte, Richard Grisenthwaite, and Peter Sewell  
in Programming Languages and Systems: 31st European Symposium on Programming (ESOP'22), pp143-173 (31pp) NOMINATED FOR BEST PAPER
- ▷ **Isla: Integrating full-scale ISA semantics and axiomatic concurrency models** [pdf]  
Alasdair Armstrong, Brian Campbell, **Ben Simner**, Christopher Pulte, and Peter Sewell  
in Proceedings Part I of Computer Aided Verification: 33rd International Conference (CAV'21), pp303-316 (14pp)
- ▷ **ARMv8-A system semantics: instruction fetch in relaxed architectures** [pdf]  
**Ben Simner**, Shaked Flur, Christopher Pulte, Alasdair Armstrong, Jean Pichon-Pharabod, Luc Maranget, Peter Sewell  
in Programming Languages and Systems: 29th European Symposium on Programming (ESOP'20), pp626-655 (30pp)
- ▷ **Starling: Lightweight Concurrency Verification With Views** [pdf]  
Matthew Windsor, Mike Dodds, **Ben Simner**, Matthew J Parkinson  
in Proceedings Part I of Computer Aided Verification: 29th International Conference (CAV'17), pp544-569 (26pp)

Note: Awards are in GREEN. Nominations are in BLUE.

## Preprints

- ▷ **Abstract architecture to catch concrete bugs: checking Android hypervisor TLB synchronisation** [pdf]  
**Ben Simner**, Thomas Fourier, Yeji Han, David Kaloper Meršinjak, Thibaut Pérami, Peter Sewell, Jean Pichon-Pharabod

## Teaching

Project students (co-supervisor):

2023-24 Jasper Parish, Part II.

2023-24 Ben Stokes, Part II.

Undergraduate teaching (supervisions):

2018-19 Foundations of Computer Science  
Part IA (3 groups)

2018-19 Hoare Logic & Model Checking  
Part II (3 groups)

2019-20 Concurrent & Distributed Systems  
Part IB (3 groups)

2023-24 Semantics  
Part IB (5 groups)

Courses (lecturing):

2025-26 *Multicore semantics (L304)*  
(Part III/MPhil, ~20 students)  
2hrs guest lectures

Note: Part IA is the first year, Part IB the second year, Part II the third year, and Part III the fourth year, in Cambridge nomenclature.