Stelios Tsampas

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Germany

CURRENT POSITION

Tenure-track Assistant Professor   **Feb. 2025 − present**
University of Southern Denmark, **SDU**

PAST POSITIONS

Postdoctoral Researcher   **Sep. 2021 − Jan. 2025**
Chair of Theoretical Computer Science at **FAU Erlangen-Nürnberg**
- 09.2021 − 12.2023, CoMoC: *Coalgebraic Model Checking*
- from 03.2024, ATLaS: *Abstract Techniques for Programming Languages and Secure Compilation* (personal project)

EDUCATION

KU Leuven   **2016 − 2021**
Ph.D. in Computer Science
- *Thesis*: Formal Reasoning about Equivalences: from Secure Compilation to Categorical Weak Bisimulation
- *Advisor*: Prof. Frank Piessens

Aristotle University of Thessaloniki   **2006 − 2014**
Master in Electrical and Computer Engineering
- *Thesis*: A Vulnerable System and Wargame
- *Advisor*: Prof. Andreas L. Symeonidis

RESEARCH INTERESTS

Foundations of Programming Languages; Computer Security; Formal Methods; Verified Compilation; Categorical Structures in Computer Science

GRANTS

Deutsche Forschungsgemeinschaft (DFG):
ATLaS: *Abstract Techniques for Programming Languages and Secure Compilation*
PIs: Stelios Tsampas, Sergey Goncharov. € 674.636 (€ 348.725 personal share). 01.2024 − 12.2026.

ADVISING

Pouya Partow, co-advised with Sergey Goncharov, from 03.2024, ATLaS.

NON-ACADEMIC EMPLOYMENT

IT Security Engineer (external partner), Anvil Secure   **Mar. 2021 − present**

IT Security Engineer, Census S.A.   **Jun. 2013 − Apr. 2016**

PUBLICATIONS (CONFERENCE)

Abstract Operational Methods for Call-by-Push-Value   POPL 2025
Sergey Goncharov, Stelios Tsampas, Henning Urbat
ACM SIGPLAN Symposium on Principles of Programming Languages

Bialgebraic Reasoning on Higher-Order Program Equivalence   LICS 2024
Sergey Goncharov, Stefan Milius, Stelios Tsampas, Henning Urbat
ACM/IEEE Symposium on Logic in Computer Science

Logical Predicates in Higher-Order Mathematical Operational Semantics   FoSSaCS 2024
Sergey Goncharov, Alessio Santamaria, Lutz Schröder, Stelios Tsampas,
Henning Urbat
Foundations of Software Science and Computation Structures

Weak Similarity in Higher-Order Mathematical Operational Semantics   LICS 2023
Henning Urbat, Stelios Tsampas, Sergey Goncharov, Stefan Milius, Lutz Schröder
ACM/IEEE Symposium on Logic in Computer Science

Towards a Higher-Order Mathematical Operational Semantics   POPL 2023
Sergey Goncharov, Stefan Milius, Lutz Schröder, Stelios Tsampas, Henning Urbat
ACM SIGPLAN Symposium on Principles of Programming Languages
Invited for submission to J. Funct. Program.

Stateful Structural Operational Semantics   FSCD 2022
Sergey Goncharov, Stefan Milius, Lutz Schröder, Stelios Tsampas, Henning Urbat
International Conference on Formal Structures for Computation and Deduction

CapablePtrs: Securely Compiling Partial Programs   CSF 2021
    Using the Pointers-as-Capabilities Principle
Akram El-Korashy, Stelios Tsampas, Marco Patrignani, Dominique Devriese,
Deepak Garg, Frank Piessens
IEEE Computer Security Foundations Symposium

Abstract Congruence Criteria for Weak Bisimilarity   MFCS 2021
Stelios Tsampas, Christian Williams, Andreas Nuyts, Dominique Devriese,
Frank Piessens
International Symposium on Mathematical Foundations of Computer Science

Fully Abstract and Robust Compilation,   APLAS 2021
    and How to Reconcile the Two, Abstractly
Carmine Abate, Matteo Busi, Stelios Tsampas
Asian Symposium on Programming Languages and Systems

A Categorical Approach to Secure Compilation   CMCS 2020
Stelios Tsampas, Andreas Nuyts, Dominique Devriese, Frank Piessens
Coalgebraic Methods in Computer Science

Temporal Safety for Stack Allocated Memory on Capability Machines   CSF 2019
Stelios Tsampas, Dominique Devriese, Frank Piessens
IEEE Computer Security Foundations Symposium

MANUSCRIPTS UNDER REVIEW (JOURNAL AND CONFERENCE)

Higher-Order Mathematical Operational Semantics
Sergey Goncharov, Stefan Milius, Lutz Schröder, Stelios Tsampas, Henning Urbat
Journal of Functional Programming

OTHER PUBLICATIONS

CRDTs, Coalgebraically (Early Ideas) — CALCO 2023
Nathan Liittschwager, Stelios Tsampas, Jonathan Castello, Lindsey Kuper
Conference on Algebra and Coalgebra in Computer Science

Higher-Order Mathematical Operational Semantics (Early Ideas) — CALCO 2023
Sergey Goncharov, Stefan Milius, Lutz Schröder, Stelios Tsampas, Henning Urbat
Conference on Algebra and Coalgebra in Computer Science

TALKS

Logical Relations in Higher-Order Mathematical Operational Semantics — CHoCoLa
*CHoCoLa meeting, Lyon, May 2024 (**Invited Talk**)*

Logical Relations in Higher-Order Mathematical Operational Semantics — WG6 Leuven
WG6 meeting, Leuven, April 2024

A categorical approach to secure compilation — USCD PS
*UCSD PS Seminar, February 2021 (**Invited Talk**)*

A summary on categorical contextual reasoning — ACT 2019
Applied Category Theory

Towards Automatic Compartmentalization of C on Capability Machines — FCS 2017
Workshop on Foundations of Computer Security (FCS)

SERVICE

PC Member

- Mathematical Foundations of Programming Semantics (MFPS) 2025
- Principles of Secure Compilation (PriSC) 2023, 2024
- Foundations of Computer Security (FCS) 2022, 2023

Reviewer

- POPL, FoSSaCS, CSL

TEACHING

KU Leuven

Teaching Assistant

- B-KUL-H01P5A, *Computer Architecture and Software Systems*
  Fall 2016, Fall 2017, Fall 2018, Fall 2019, Fall 2020
- B-KUL-H01P1A, *Object-Oriented Programming*
  Spring 2017, Spring 2019, Spring 2021
- B-KUL-G0Q40C, *Software Design*
  Spring 2018