

# Thodoris Sotiropoulos

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## Research Interests

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My research interests lie in the area of programming languages, program analysis, and software testing.

## Education

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### Ph.D. in Computer Science

ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS (AUEB)

Athens, Greece

Dec 2018 – Oct 2022

- Abstractions for Software Testing
- Advisor: Prof Diomidis Spinellis

### M.Sc. in Advanced Computing (Distinction)

IMPERIAL COLLEGE LONDON

London, UK

Sept 2017 – Sept 2018

- Thesis: Static Analysis for Asynchronous JavaScript Programs (Distinguished)
- Advisor: Dr Benjamin Livshits

### B.Sc. in Management Science & Technology (GPA 8.7/10)

ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS (AUEB)

Athens, Greece

Oct 2012 – Jul 2017

- Thesis: Search Engine Similarity Analysis: A Combined Content and Rankings Approach
- Advisor: Dr Panos Louridas

## Experience

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### Department of Computer Science, ETH Zurich

POSTDOCTORAL RESEARCHER

Zurich, Switzerland

Jan 2023 – Present

Member of the Advanced Software Technologies Group (mentored by Prof. Zhendong Su).

### Amazon Web Services (AWS)

APPLIED SCIENTIST INTERN

Seattle, USA

Jan 2022 – Apr 2022

Designing and developing static analysis for identifying security vulnerabilities in AWS codebase.

### Athens University of Economics and Business (AUEB)

RESEARCHER

Athens, Greece

Dec 2018 – Jun 2022

Research scientist for two European Research Projects, namely CROSSMINER, and FASTEN. I have been working on generating C call graphs for the whole Debian ecosystem using static analysis techniques and providing a framework to enable various analyses to tackle security and risk evaluation problems, license compliance, and change impact analysis.

### National Infrastructures for Research and Technology (GRNET)

SOFTWARE ENGINEER

Athens, Greece

Mar 2016 – Aug 2017

Cloud engineer for Synnefo, the open-source IAAS software developed by GRNET. Synnefo empowers okeanos, which is the GRNET's cloud service.

## Honors & Awards

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Jun 2022 **PLDI'22 Distinguished Paper Award**, Finding Typing Compiler Bugs

San Diego, USA

Jun 2022 **PLDI'22 Best Artifact Award**, Finding Typing Compiler Bugs

San Diego, USA

Jun 2021 **ICSE'21 Distinguished Artifact Award**, Data-Oriented Differential Testing of Object-Relational Mapping Systems

Virtual

## Service

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PROGRAM COMMITTEE

**PLDI** ACM SIGPLAN Conference on Programming Language Design and Implementation: 2024  
**ECOOP** European Conference on Object-Oriented Programming: 2023  
**PLDI Artifacts** ACM SIGPLAN Conference on Programming Language Design and Implementation – Artifacts: 2022, 2023  
**OOPSLA Artifacts** Object-Oriented Programming, Systems, Languages, and Applications – Artifacts: 2021

## EXTERNAL REVIEWER

**ISSTA** ACM SIGSOFT International Symposium on Software Testing and Analysis: 2022  
**FSE Industry Track** ESEC/FSE Industry Track: 2021  
**MSR** Mining Software Repositories Conference: 2020

## Teaching

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### Teaching Assistant, Automated Software Testing (Postgraduate course)

ETH ZURICH

Zurich, Switzerland

Springs 2023–2024

### Teaching Assistant, Programming II (Undergraduate course)

ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS (AUEB)

Athens, Greece

Falls 2019 – 2022

### Teaching Assistant, Decision Making (Undergraduate course)

ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS (AUEB)

Athens, Greece

Fall 2013

## Software Artifacts

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**HEPHAESTUS** A framework for validating compilers' type checkers.  
**CYNTHIA** Data-oriented differential testing of Object-Relational Mapping Systems.  
**BuildFs** A dynamic method for detecting faults in incremental and parallel builds.  
**FSmove** A command-line tool that detects missing ordering relationships and missing notifiers in Puppet programs.  
**APIMAS** A framework for building scalable REST APIs through declarative specifications.

## Publications

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- Georgios-Petros Drosos, **Thodoris Sotiropoulos**, Diomidis Spinellis, Dimitris Mitropoulos. Bloat beneath Python's Scales: A Fine-Grained Inter-Project Dependency Analysis. *In Proceedings of the ACM on Software Engineering*, FSE'24, 2024.
- Thodoris Sotiropoulos**, Stefanos Chaliasos, Zhendong Su. API-driven Program Synthesis for Testing Static Typing Implementations. *In Proceedings of the ACM on Programming Languages*, POPL'24, 2024.
- Charalambos Mitropoulos, **Thodoris Sotiropoulos**, Sotiris Ioannidis, Dimitris Mitropoulos. Syntax-Aware Mutation for Testing the Solidity Compiler. *In Proceedings of the 28th European Symposium on Research in Computer Security*, ESORICS'23, 2023.
- Stefanos Chaliasos\*, **Thodoris Sotiropoulos\***, Diomidis Spinellis, Arthur Gervais, Benjamin Livshits, Dimitris Mitropoulos. Finding Typing Compiler Bugs. *In Proceedings of the 43rd ACM SIGPLAN Conference on Programming Language Design and Implementation*, PLDI'22, 2022. 10.1145/3519939.3523427. *Distinguished Paper Award; Best Artifact Award*.
- Stefanos Chaliasos\*, **Thodoris Sotiropoulos\***, Georgios-Petros Drosos, Charalambos Mitropoulos, Dimitris Mitropoulos, Diomidis Spinellis. Well-Typed Programs Can Go Wrong: A Study of Typing-Related Bugs in JVM Compilers. *In Proceedings of the ACM on Programming Languages*, OOPSLA'21, 2021. 10.1145/3485500.
- Thodoris Sotiropoulos**, Stefanos Chaliasos, Vaggelis Atlidakis, Dimitris Mitropoulos, Diomidis Spinellis. Data-Oriented Differential Testing of Object-Relational Mapping Systems. *In Proceedings of the 43rd International Conference on Software Engineering*, ICSE'21, 2021, 10.1109/ICSE43902.2021.00137. *Distinguished Artifact Award*.
- Vitalis Salis, **Thodoris Sotiropoulos**, Panos Louridas, Diomidis Spinellis, Dimitris Mitropoulos. PyCG: Practical Call Graph Construction in Python Programs. *In Proceedings of the 43rd International Conference on Software Engineering*, ICSE'21, 2021. 10.1109/ICSE43902.2021.00146.

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\*These authors contributed equally.

8. **Thodoris Sotiropoulos**, Stefanos Chaliasos, Dimitris Mitropoulos, Diomidis Spinellis. A Model for Detecting Faults in Build Specifications. *In Proceedings of the ACM on Programming Languages*, OOPSLA'20, 2020. doi:10.1145/3428212.
9. **Thodoris Sotiropoulos**, Dimitris Mitropoulos, Diomidis Spinellis. Practical Fault Detection in Puppet Programs. *In Proceedings of the 42nd International Conference on Software Engineering*, ICSE '20, 2020. doi:10.1145/3377811.3380384.
10. Konstantina Dritsa\*, **Thodoris Sotiropoulos\***, Haris Skarpetis, Panos Louridas. Search Engine Similarity Analysis: A Combined Content and Rankings Approach. *In Proceedings of the 21st International Conference on Web Information Systems Engineering*, WISE '20, 2020. doi:10.1007/978-3-030-62008-0\_2.
11. **Thodoris Sotiropoulos**, Benjamin Livshits. Static Analysis for Asynchronous JavaScript Programs. *In Proceedings of the 33rd European Conference on Object-Oriented Programming*, ECOOP '19, 2019. doi:10.4230/LIPIcs.ECOOP.2019.8.
12. Dimitris Mitropoulos, **Thodoris Sotiropoulos**, Nikos Koutsovasilis, Diomidis Spinellis. PDGuard: an architecture for the control and secure processing of personal data. *In Proceedings of the International Journal of Information Security.*, 2019. doi:10.1007/s10207-019-00468-5.