

Dimitrios Stamatios Bouras

Education

- 09/2025 – **PhD in Computer Science**, *Peking University*, Beijing, China
Present Programming Languages Laboratory (PL Lab).
Tentative PhD Thesis: *LLM-Based Program Analysis*.
- 09/2023 – **MSc Software Systems Engineering**, *University College London*, London, United Kingdom
09/2024 Graduated with High First-Class Honours (Grade: 79.6%)
Ranked **1st in Class of 2024**
- 09/2017 – **MEng, BSc in Electrical and Computer Engineering**, *National Technical University of Athens*, Athens, Greece
02/2023
Grade: 8.69/10 (*First Class Honours*)
5-year integrated master's degree; 300 ECTS. Selected Flows: Computer Systems, Computer Software, Management and Decision Support Systems.
- 09/2014 – **High School Diploma**, *2nd General High School Kalyvion*, Athens, Greece
06/2017 20.0/20.0, "*Distinction*", *Top of 2017 Class*

Professional Experience

- 09/2024 – **Research Associate**, *PL Lab Peking University*, Beijing, China
09/2025
 - Research Associate at the Programming Language Lab of Peking University
 - Affiliated Projects:
 - LLM assisted Crossover for Genetic Improvement of Software
 - Structural Reasoning about Programs in Natural Language
 - Diffusing symbolic execution logic bombs with LLM generated ghost code
 - AI assisted Verification of Smart Contracts
- 03/2023 – **DevOps Engineer**, *IBM*, Athens, Greece
09/2023
 - Engineer at the COSMOS project; implementation of a new core banking system for the National Bank of Greece.
 - Developed continuous integration, testing, and deployment pipelines.
 - Created a multipurpose release management web tool.
 - Provided production cloud support and monitoring solutions, ensuring high availability, optimal performance, and swift resolution of incidents
 - Managed cloud infrastructure using Terraform and Ansible
- 11/2022 – **Teaching Assistant**, *NTUA School of Electrical and Computer Engineering*, Athens, Greece
02/2023
 - Provided assistance in the Microcomputers Laboratory course.
 - Examined and graded students on semester exercises and final exams.
- 10/2021 – **Research Assistant**, *Microprocessors and Digital Systems Lab, NTUA*, Athens, Greece
02/2023
 - Assisted in energy efficiency, binary code lifting and heterogeneous computing research.
 - Deployed and maintained cloud infrastructure for the research performed.
- 07/2021 – **DevOps Integration Specialist Intern**, *IBM*, Athens, Greece
09/2021
 - Maintained and created CI/CD pipelines
 - Provided cloud automation solutions

Honors & Awards

- 2026 **ACM SIGSOFT Distinguished Paper Award**, ICSE 2026
- 2025 **National Natural Science Foundation of China (NSFC)** – Research Fund for Excellent International PhD Students. Principal Investigator of a nationally competitive grant for my work on verification-aware large language models, symbolic execution, and smart contract verification.
- 2025 **International Computer Science Excellent PhD Student Scholarship**, Peking University

- 2025 **Chinese Government Scholarship**, for Phd studies at Peking University
- 2024 **Top** of the 2024 UCL Software Systems Engineering Masters Class
- 2023 **Proud of Youth Scholarship by Helleniq Energy**, to promising youth, for Postgraduate Studies
- 2023 **Eugenides Foundation Scholarship** due to academic excellence, for Postgraduate Studies
- 2017 **National Chemistry Olympiad**, among top performers nationwide; selected as reserve for the Global Chemistry Olympiad.
- 2016 **European Youth Parliament of Greece**, among top participants nationwide; selected as reserve for the 87th International Session.

Skills

- Languages Python, C, C++, Java, Groovy, TypeScript, JavaScript, Go, SQL, Assembly (x86, RISC-V), Standard ML, Prolog, Matlab, Verilog, UML, VHDL.
- Tools Jenkins, OpenShift, KLEE (symbolic execution), SymCC (concolic execution), Large Language Models for automated software engineering, Agent development. Docker, Kubernetes, Azure DevOps, AWS DevOps, Maven, Terraform, Ansible, Infrastructure as Code (IaC), Prometheus, ELK, Android Studio, LLVM, Xilinx Vivado, Machine Learning (PyTorch, TensorFlow, Keras)

Publications

- ICSE 2026 *HoarePrompt: Structural Reasoning About Program Correctness in Natural Language* (**Distinguished Paper Award**)
- ISSTA 2026 *Gordian: Defusing Logic Bombs in Symbolic Execution with LLM-Generated Ghost Code*
- LLM4Code @ ICSE 2026 *Statistical Independence Aware Caching for LLM Workflows.*
- SSBSE 2025 *Optimised fitness functions for automated improvement of software's execution time*
- GI@ICSE 2025 *LLM-Assisted Crossover in Genetic Improvement of Software - "Best Presentation" Award*
- SAMOS XXIII *"Reliable Basic Block Energy Accounting"*

Dissertation Thesis

- NTUA Production of a reliable C code energy dataset at the Basic Block level, using LLVM, intel-rapl, and intel-perf.
- UCL Novel software performance metrics for software optimization using Genetic Improvement techniques.

Notable Projects

- Diffusing **Logic Bombs** in Symbolic Execution with LLM **ghost code** (under review @ **ISSTA**)
- **HoarePrompt** : Structural Reasoning About Programs in Natural Language
- **Expansion of the MAGPIE G.I framework**, with new fitness functions and LLM-assisted crossover
- **Microservices based LLVM Verification tool** for C function autocompletions using symbolic execution and static analysis
- **Parameter Optimization and Rightsizing Models** for the **Green Software Foundation** Project Impact Engine Framework (Team Leader), in collaboration with **NTT Data**
- **Custom OS implementation** from scratch for Armv8-A , implemented on Raspberry Pi 3
- **Distributed Neural Network Training Pipeline**, using Tensorflow
- **Electric car charging Station system**, user interface, cli and backend development
- **Parametrized Debayering Filter** design for ZYNQ SoC FPGA, using Xilinx Vivado - ISE

Languages

English (C2, Fluent) French (B2, Intermediate) Chinese (A1, Beginner) Greek (Native)