Michail Pardalos

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About me

I am a graduate of Electronic and Information Engineering from Imperial College London. This degree has allowed me to develop skills in hardware design, software engineering and systems architecture. With significant research experience for an undergraduate programme, I am now looking to apply my skills — and acquire new ones — in an applied, industrial environment.

Interests

Programming Language Theory Functional Programming Linux Gaming

Photography

Education

Imperial College London *(2017–2021)*

Electronic and Information Engineering

- Focused on a mix of Electronic Engineering and Computer Science.
- Master's Thesis: Formally verified resource sharing for High Level Synthesis
- Completed with **1st class honours**.

Costeas Geitonas School *(2015–2017)*

International Baccalaureate

- Earned a school scholarship for both years of the Baccalaureate.
- Final mark: 38/45

Experience

Imperial College London – Circuits and Systems Group *(August–September 2021)*

Research — Formally verified resource sharing for High Level Synthesis

- Implementing an optimisation for a High-Level-Synthesis (C-to-hardware) compiler
- Used the Coq proof assistant
- Formal verification goal has required a focus on correct, simple and easy to reason about code

Imperial College London – Circuits and Systems Group *(July–August 2019)*

Research — Modelling SQL Transaction Isolation

- Used the **Alloy** modelling language and **OCaml** to model SQL transaction isolation to check for concurrency issues
- Rediscovered an inconsistency in the SQL standard's specification of serializability
- Gave a well-received seminar about my project to the research group.

Google Summer of Code *(June–August 2020)*

Add OpenTelemetry tracing to ghcide

- Added tracing to the **Haskell** Language Server
- Required learning about GHC internals, including memory management and the RTS
- Working in an open-source context meant learning about a large, existing codebase and cooperating with a large group of contributors

Atticsoft *(July–August 2017)*

Web development Internship

- Web development company in Greece
- Developed an internal website for managing employees' time off
- Final product remained in use after the end of my internship
- Technologies used: **C#**, **Umbraco CMS** and **VueJS**

Projects

Kima

Programming language design and implementation

- Interpreter for a language of my own design
- Current features: static typing, algebraic data types, higher-order functions, algebraic effects
- Implemented in **Haskell** and tested using **HSpec**, **Quickcheck**, and **Gitlab CI**
- Website link: kima.xyz (https://kima.xyz)

Self Organising Multi-Agent Systems

Multi-agent simulation

- Built a simulator for a game of social organisation
- Helped in organising the team of 43 students
- Built using Go, Typescript and Webassembly

MIPS Simulator

Software simulator for MIPS-1 ISA

- Developed as a coursework project for Computer Architecture module
- Written in C++
- Includes testbench of nearly 200 tests
- Final mark: 83%
- Github link: github.com/mpardalos/MIPS-Simulator

Forest Ranger

Illegal logging alarm

- University project to develop a solution for monitoring illegal logging
- Embedded development using Python and the Raspberry Pi
- Developed a monitoring dashboard using Typescript and Firebase

Skills

Programming Languages

Haskell	**Proficient**
Python	**Proficient**
Coq	**Proficient**
Alloy	**Proficient**
C,C++	**Competent**
OCaml	**Competent**
C#	**Competent**
JS, HTML, CSS	**Competent**
Idris	**Competent**
Scala	**Familiar**

Languages

English	**Proficient (C2)**
Greek	**Native**
German	**Comfortable (C1)**
Spanish	**Learning**