Fotis Branikas

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Profile Summary

Software Engineer with combination of experience in high-performance computing, full stack development and data analysis. Demonstrated ability to build and optimize the performance of software systems, and deliver data-driven software tools for complex, low latency computational environments.

Strong foundation in scientific and numerical programming, with experience in algorithmic optimization and parallel computing (MPI, CUDA, OpenMP). Successfully developed performance benchmarking tools, CI/CD and HPC execution pipelines. Significantly contributed in the development and debugging of distributed computing systems.

Collaborative problem-solver, experienced in working with cross-functional teams in R&D environments. Proven ability to manage multiple projects while supporting day-to-day operational needs and delivering results under time pressure.

Self-driven and analytical with strong scientific and mathematical background. Looking to apply and further cultivate creative problem-solving skills through hard work, rationalism.

Skills

- **Programming languages**: C++, C, Python, Bash, Matlab, SQL, HTML, CSS, Javascript, Typescript (Angular), Java.
- **Data Analysis and Visualization Libraries**: NumPy, SciPy, Pandas, scikit-learn, Tensorflow, Matplotlib, Plotly, Dash.
- **Tools**: Git, Github CI/CD, Docker, GNU Debugger, Jira, Jupyter, slurm, reframe, neovim, building UIs with Qt.
- **Other Competencies**: Linux administration, Linux Kernel Module Development, knowledge of network protocols, monitoring and programming (low-level socket programming and with REST APIs), understanding of cryptography and software security concepts.
- **Languages**: Greek (native), English (Cambridge University Certificate of Proficiency C2), German (OSD Zertifikat B2)

Education

MEng Electrical and Computer Engineering *National Technical University of Athens* Oct 2017 - June 2024

- **Overall Grade**: 7.5/10, **Thesis Grade**: 10/10.
- **Thesis**: Performance Analysis and Modeling of Parallel Applications in Distributed Memory Architectures.
- **Relevant Coursework**: Computer Architecture, Data Structures and Algorithms, Operating Systems, Distributed Systems, Parallel Processing, Computer Networks, Neural Networks, Probability Theory and Statistics, Linear Algebra, Discrete Mathematics.

Mandatory Greek Military Training and Service Nov. 2019 - Nov. 2020

Experience

ICCS NTUA, Research Engineer - Athens, Greece Sep. 2024 - present

- Currently working as a Research Engineer focused on performance, scalability, communication and programmability of HPC systems. This is achieved through the continuous development of C++ benchmarking and profiling tools executed on top-performing systems of the Top500 list.
- Providing support for the efficient and error-free execution of scientific models, building scalable software pipelines and conducting data-driven analyses to assimilate and accommodate software in the available infrastructure.
- Also compiled a set of assignments for a Master's level course on Parallel Computing. This was focused around parallelizing the training and inference of a Neural Network (using CUDA, MPI and Python Multiprocessing).

Kallipos Academic Ebooks, Software Engineer (Part Time) - Athens, Greece July 2021 - Sep. 2024

- Undertook a project regarding the development of a streamlined process for generating versatile e-books for Kallipos, one of the biggest open-access ebook repositories in Europe.
- Developed the styling for HTML and PDF output formats of XML based books using CSS and XSLT stylesheet languages
- Designed a custom user-friendly software suite for document conversions and previews.
- Collaborated with non-technical staff to understand requirements of the delivered software.

Hilon Informatics, Frontend Engineer (Fixed Contract) - Athens, Greece Oct. 2023 - Jan. 2024

- Developed a CRUD Frontend using Angular. This was used as the student course dashboard of the National Technical University of Athens.

Tesla Motors, Software Engineering Internship - Athens, Greece March 2022 - July 2022

- Completed an internship role within Tesla's Motor R&D Department. Responsibilities were centered on a distributed

computing electrical motor simulation system written in MATLAB and executed on hundreds of machines.

- Contributed in the maintenance of existing software tools through meticulous manual debugging and automated testing.
- Designed and Implemented a Continuous Integration/Continuous Deployment (CI/CD) testing suite for the main production codebase using GitHub Actions, ultimately leading to a more efficient and error-free software development process.

Achievements & Recognition

First EULiST Student Conference, EULiST (eulist.university) - TUW, Vienna, Austria July 2024

Attended the conference as a speaker to present the software project developed with Kallipos Academic Ebooks.