

Cosmin-Gabriel SAMOILĂ

 +40 7xxxxxxxxx  gabrielcsmo@gmail.com
 <https://github.com/gabrielcsmo> |  <https://www.linkedin.com/in/cgs10/>

SKILLS

Programming Languages	C, Python , Parallel programming (CUDA, MPI, OpenMP, TBB)
Computer Science	High Performance Computing , Compilers, Profiling and Optimization
Language Skills	English (C1) , French (A1)

WORK EXPERIENCE

Principal Engineer (Development Tools) @ Microchip Technology	Aug 2022 - present Mar 2019 - May 2022
Key Projects and Contributions: Procedural Abstraction Tool, Smart-IO Optimization, Stack Usage Analysis, Memory Report by Module, Pure Code Support for XOM, Board Farm Management System, LibC Integration with XC32, Automated Benchmarking Framework, Zephyr RTOS Support in XC32	
Research & Teaching Assistant @ Politehnica University of Bucharest	Oct 2014 - Oct 2025
<ul style="list-style-type: none">Teaching Assistant - Faculty of Automatic Control and Computer Science: Computer Systems Architecture, Parallel Processing ArchitecturesResearch Assistant - AMI Lab (AIMAS) Computer Vision: Face detection and recognitionScientific Research Assistant - Space Science Institute High Performance Computing (CORSIKA)Research Assistant - ATLAS Experiment at LHC/ATLAS (CERN): Porting Athena C++ Algorithms to GPU (CUDA)	
Software Engineer @ Adobe	May 2022 - Aug 2022
Horizon - Tooling Infrastructure	
Software Engineer (Linux Kernel) @ NXP Semiconductors	Sept 2017 - Mar 2019
Key Projects and Contributions: Linux kernel audio drivers for NXP's i.MX MPUs, firmware and bootloader development, board management system, upstream contributions to Linux kernel	
Software Engineer @ Luxoft	Jan 2017 - Aug 2017
Network Function Virtualization	
Software Engineer @ Intel	Jun 2015 - Jan 2017
<ul style="list-style-type: none">Internship (Bachelor's Thesis): Developed a Branch Hinting Tool as part of my Bachelor's degree thesis, which aimed to improve branch prediction accuracy and overall CPU performance on Intel processors.Software Engineer: Promoted to Software Engineer, where I focused on speed optimizations for interpreted languages (PHP, HHVM, Python) to enhance performance on Intel Xeon datacenter processors.Designed and implemented optimizations that improved execution efficiency for high-performance workloads commonly found in data centers.Created and maintained benchmarking frameworks used for Profile Guided Optimizations (PGO), providing essential data for tuning interpreters and further optimizing their runtime performance.Collaborated with cross-functional teams to integrate optimizations into Intel's software stack, driving tangible improvements in server-side performance for enterprise clients.	
Software Engineering Intern @ Teamnet	Summer 2014
Opinion mining for social media and news items	

EDUCATION

- 2018 - 2024 PhD (High Performance Computing) at **Politehnica University of Bucharest**
- 2016 - 2018 Master's Degree (Parallel and Distributed Computer Systems) at **Faculty of Automatic Control and Computer Science - Politehnica University of Bucharest**
- 2012 - 2016 Bachelor's Degree (Computer Science) at **Faculty of Automatic Control and Computer Science - Politehnica University of Bucharest**
- 2021 Certificate of Examination - ATLAS GPU Training in CUDA at **CERN/NVidia**
- 2019 Certificate of Examination - CERN School of Computing at **CERN**

PUBLICATIONS

Gabriel, Samoila Cosmin, Predescu Maria, Slusanschi Emil Ioan, et al. (2024). "High-Throughput Computing: Case Study of Medical Image Processing Applications". In: *Workshop on AI and Scientific Computing at Scale using Flexible Computing Infrastructures (FlexScience '24)*. URL: <https://dl.acm.org/doi/abs/10.1145/3659995.3660039>.

Gabriel, Samoila Cosmin et al. (2024). "Performance Analysis of Medical Imaging Workflows". In: *U.P.B Scientific Bulletin - Series C* 86.3. ISSN: 2286-3540. URL: https://www.scientificbulletin.upb.ro/rev_docs_arhiva/rez61c_220678.pdf.

Gabriel, Samoila Cosmin et al. (2023). "COSMOS Framework: Simulation and Optimization of 3D Search". In: *U.P.B Scientific Bulletin - Series C* 85.1. ISSN: 2286-3540. URL: https://www.scientificbulletin.upb.ro/rev_docs_arhiva/rezb44_158379.pdf.

Gabriel, Samoila Cosmin, Muraru Sebastian, et al. (2020). "Molecular Dynamics Simulations of DNA Adsorption on Graphene Oxide and Reduced Graphene Oxide-PEG-NH₂ in the Presence of Mg²⁺ and Cl⁻ ions". In: *Coatings* 10.3. ISSN: 2079-6412. DOI: [10.3390/coatings10030289](https://doi.org/10.3390/coatings10030289). URL: <https://www.mdpi.com/2079-6412/10/3/289>.

Cosmin-Gabriel, Samoila and Slusanschi Emil-Ioan (2019). "COSMOS-Framework for Combining Optimization and Simulation Software". In: *2019 22nd International Conference on Control Systems and Computer Science (CSCS)*, pp. 162–169. URL: <https://ieeexplore.ieee.org/abstract/document/8744916>.

Cosmin-Gabriel, Samoila, Carabas Mihai, et al. (2018). "Integrating Parallel Computing in the Curriculum of the University Politehnica of Bucharest". In: *24th International European Conference on Parallel and Distributed Computing*. URL: https://link.springer.com/chapter/10.1007/978-3-030-10549-5_18.

Gabriel, Samoila Cosmin et al. (2014). "Experimenting Face Detection and Recognition in an Ambient Intelligence Laboratory". In: *The 20th International Conference on Control Systems and Computer Science (CSCS20-2015)*, Submitted for review. URL: https://drive.google.com/file/d/1nyMYXjmtqzX1si6MkwGRV0_qdlnG6rKD/view?usp=sharing.

PROJECTS

COSMOS Framework	Link to Code
Branch Hinting Tool	Link to Code
PHP Profile Guided Optimization (PGO) Training Benchmark	Link to Code