

George Z. Zachos

Master of Engineering in Computer Science & Engineering

General Information

Military Duty:
Pending

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Languages

Greek: Native
English: C2 (2010)

Last updated:

December 20th, 2021

Education

2013-2021 **M.Eng. in Computer Science and Engineering** University of Ioannina
Master of Engineering program at the Computer Science & Engineering Department (CSED), School of Engineering, University of Ioannina (UOI).
Thesis title: "Topology and synchronization in OpenMP for manycore NUMA systems" Advisor: Vassilios V. Dimakopoulos

Work Experience

10/2013-02/2016 **Computer and Network Technician** CSED, University of Ioannina
The *Computer Systems Support Group* provides assistant work in the management of departmental computing resources, develops software applications for departmental use & aids in the operation of educational computer laboratories. In the last two months I conducted my internship.

Research Groups

02/2015-09/2021 **Parallel Processing Group (PPG)** CSED, University of Ioannina
PPG's main research interests lie in the area of parallel and distributed systems. I was also the lead system administrator of PPG since 2016.
For more information visit: paragroup.cse.uoi.gr

Projects

09/2017-08/2018 **PRACE-5IP** National Infrastructures for Research & Technology (GRNET)
I participated as a parallel programming instructor in the first year of operation of the *Partnership for Advanced Computing in Europe* (PRACE) Training Centre (PTC) established by GRNET.

Teaching Assistance

2016-2021 **Systems Programming (core undergraduate)** CSED, University of Ioannina
The C programming language and POSIX systems programming using C.
Semesters: Fall 2016, 2017, 2018, 2019, 2020 (remote due to COVID-19)

Visit gzachos.com
for an electronic
version of this CV.

Programming Skills

- General-purpose programming: C, Java SE, Python
- Shells: Bash, Bourne Shell
- Parallel programming: POSIX threads, OpenMP, MPI
- Systems programming: GNU/Linux
- GPIO library: WiringPi (for Raspberry Pi)
- Scientific computing: GNU Octave
- Other tools: Portable Hardware Locality (hwloc)

I am also familiar with MIPS Assembly, C++, Haskell, JavaFX, JUnit and Apache Lucene.

Computing Skills

- Backup Tool: Attic
- Databases: Round Robin Database (*RRDtool*)
- Hypervisors: VirtualBox, VMware ESXi, VMware Workstation
- Operating Systems: GNU/Linux (*Debian-based distributions*)
- Packet Analyzer: Wireshark
- Server Administration: Debian, Raspberry Pi OS, CentOS
- Single Board Computer: Raspberry Pi
- Version Control System: Git, Gitolite (Git Repository Hosting)

Software Projects

- 06/2016-09/2021 **OMPI compiler** Parallel Processing Group, CSED, UOI
An open source OpenMP compiler and runtime system for C. Among others, I implemented a NUMA-aware barrier, the OpenMP places and OpenMP processor binding policies. For more information visit: cse.uoi.gr/~ompi
- 02/2018-02/2021 **MARS Stack Visualizer** CSED, University of Ioannina
A tool for MIPS Assembler and Runtime Simulator (MARS) that allows real time visualization of stack segment modification operations. Thesis topic provided by Aris Efthymiou; conducted as a side project. For more information visit: gzachos.com/mars-stack-visualizer
- 16-20/04/2016 **Implementation of FSS policy in MINIX** CSED, University of Ioannina
During the Operating Systems course, I extended the system kernel of MINIX 3.2.0 to support the fair-share scheduling (FSS) policy.
- 01/2015-02/2016 **Aeolus Logger** Computer Systems Support Group, CSED, UOI
This project is about the implementation of a logging system and it's integration with Emerson cooling units, so that it can be used to monitor the environmental conditions of the cluster room in CSE Department.

Repositories

- **Backup-script** [*BASH*] - gzachos.com/backup-script
 - A shell script that backs up the directories specified in the configuration section and manages old backup files.
- **Door-monitor** [*C*] - gzachos.com/door-monitor
 - Door status monitoring and email notification system using Raspberry Pi.
- **Nla-course-uoι** [*C, Octave*] - gzachos.com/nla-course-uoι
 - Implementation of the Cholesky decomposition, Steepest Descent and Conjugate Gradients methods for solving linear systems.
- **Compilers-course-uoι** [*Python*] - gzachos.com/compilers-course-uoι
 - A compiler implementation for a minimal programming language that has borrowed its characteristics from C and Pascal, targeting the MIPS32 ISA.
- **Cgis-course-uoι** [*C++*] - gzachos.com/cgis-course-uoι
 - OpenGL application for polygon drawing, coloring, clipping and 3D extrusion.

For a full list of my publicly available repositories visit my GitHub profile.

Honors and Awards

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|------------|--|---|
| 21/10/2016 | Recognition Award | CSED, University of Ioannina |
| | The Dean of CSED awarded me for my contribution to the Computer Systems Support Group. | |
| 19/11/2015 | Contribution Award | Greek Free and Open Source Software Society |
| | Awarded for the localization of Elgg social networking engine. | |

Seminars

PARTICIPATED AS A SPEAKER

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|------|---|----------|
| 2014 | University of Ioannina IEEE Student Branch | Ioannina |
| | Participated in two seminars covering various GNU/Linux-related topics. | |

Organizations

6/2014-Present Greek Free and Open Source Software Society (GFOSS)