

# Georgios Vavouliotis | Curriculum Vitae

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## Profile

I earned my diploma on Electrical and Computer Engineering Department of National Technical University of Athens (NTUA). During my studies, I completed numerous projects that gave me a solid background in Computer Science and Software Engineering. Currently, I am a 3rd year Ph.D. student in Universitat Politècnica de Catalunya (UPC) and Barcelona Supercomputing Center (BSC-CNS). My supervisors are Dr. Marc Casas Guix from BSC-CNS and Dr. Lluc Alvarez from UPC. Moreover, I collaborate with Prof. Daniel A. Jiménez from Texas A&M University and Prof. Boris Grot from University of Edinburgh. Finally, my research aims at building microarchitectural prefetching mechanisms that inherently use artificial intelligence algorithms.

## Areas of Interest

- Computer Architecture
- Artificial Intelligence
- System Software
- Operating Systems

## Education

- **Universitat Politècnica de Catalunya (UPC)** **Barcelona**  
*Doctor of Philosophy (Ph.D.)* *September 2018-now*  
*Leveraging Artificial Intelligence Algorithms for Hardware Prediction*
- **National Technical University of Athens (NTUA)** **Athens**  
*Diploma on Electrical & Computer Engineering, 300 ECTS, GPA: 8.9/10* *2012-March 2018*  
*Academic Directions*.....
  - Computer Systems & Software
  - Computer Networks and Networks Security
  - Signal Processing, Automatic Control and Robotics*Diploma Thesis*.....  
*Performance Analysis of TLB Prefetching Mechanisms, GPA: 10/10*
- **General Lyceum, Chalkida, Greece** **Chalkida**  
*Apolytirion, Top 0.1% in National Qualification Exams, GPA: 19.5/20* *2009-2012*

## Research Experience

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- **Barcelona Supercomputing Center (BSC-CNS)** **Barcelona**  
*Research Student* *September 2018–now*
- **National Technical University of Athens (NTUA)** **Athens**  
*Research Student on Computer Systems Laboratory (CSLab)* *February 2018–July 2018*

## Participation in Projects

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- **SOW 5.3 - Intel and BSC-CNS Collaboration** **Barcelona**  
*Barcelona Supercomputing Center (BSC-CNS)* *September 2018–now*
- **High Performance Computing VII** **Barcelona**  
*Barcelona Supercomputing Center (BSC-CNS)* *September 2018–now*

## Publications

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- [1] **Georgios Vavouliotis**, Goumas Georgios, "[Performance Analysis of TLB Prefetching Mechanisms](#)". Book of my diploma thesis.
- [2] **Georgios Vavouliotis**, Lluc Alvarez, Daniel A. Jimenez, Marc Casas Guix, [Cost-Effective Instruction TLB Prefetching](#). Second Young Architect Workshop (YArch 2020). In conjunction with The 25th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS 2020), Lausanne.
- [3] **Georgios Vavouliotis**, Lluc Alvarez, Vasileios Karakostas, Konstantinos Nikas, Nectarios Koziris, Daniel A. Jimenez, Marc Casas Guix, ***Exploiting Page Table Locality for Agile TLB Prefetching***. Submitted to 48th International Symposium on Computer Architecture (ISCA) [[under review](#)].
- [4] **Georgios Vavouliotis**, Lluc Alvarez, Boris Grot, Daniel A. Jimenez, Marc Casas Guix, ***Morrigan: A Composite Instruction TLB Prefetcher***. Submitted to 48th International Symposium on Computer Architecture (ISCA) [[under review](#)].

## Seminars and Training Courses

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- **Summer Schools**
  - *Participation in accredited Summer Schools (**certification provided**)*
    - **HPC Architectures for Artificial Intelligence and Dedicated Applications**
      - Provided by **ACM-Europe**, 17 - 24 July 2019
- **Seminars**
  - *Participation in accredited seminars (**certification provided**)*
    - **Introduction to Heterogenous Memory Usage**
      - Provided by **PACT BSC-CNS**, 26 February 2019
- **Online Courses (MOOCs)**
  - *Courses offered by accredited universities and training programs (**certification provided**)*

### **Machine Learning**

- Provided by **Stanford University** (Prof. Andrew Ng), May 2018 - July 2018, **GPA: 10/10**
  - Supervised Learning (Regression Models, SVMs, NN)
  - Unsupervised Learning (Clustering, Dimensionality Reduction)

### **Advanced Programming with Python**

- Provided by **Mathesis Online Platform**, March 2018 - April 2018, **GPA: 10/10**
  - Object Oriented Programming
  - Data Storage (sqlite3, pickle, JSON)
  - Graphic Interface Programming and Game Development

## **Teaching Experience**

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### **Private Tutor**

**Athens**

- During my Diploma I was giving private lectures to:

2013–2018

#### **Undergraduate students of Computer Science Department**

- C programming, Computer Architecture, Operating Systems, Automatic Control

#### **High school students**

- Mathematics, Physics

### **Lab Assistant at National Technical University of Athens (NTUA)**

**Athens**

- C programming, Operating Systems

2013–2017

## **Technical and Personal skills**

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### **Programming Languages:**

- Proficient: C, Python,
- Basic knowledge: C++, Matlab-Simulink, Assembly (8085, 8086, AVR), R, Prolog, SML/NJ, Java

### **Software Skills:**

- Proficient: Unix Bash, L<sup>A</sup>T<sub>E</sub>X
- Basic knowledge: Git, MS Office (Word, Excel, PowerPoint), HTML, CSS, PHP, Javascript, CACTI, TCL - AWK - Wireshark

### **Simulators:**

- Proficient: ChampSim
- Basic knowledge: Gem5

### **Operating Systems:**

- Proficient: Linux, Mac OS, Windows

### **General Business Skills:**

- Ability to work with a team
- Very good presentation skills
- Able to write well organized and structured reports

## **Honors and Awards**

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### **2019 FPI Doctoral Fellowship**

**Barcelona**

- Funded by Spanish Government (MINECO)

2019–2022

- **Mathematics Award - National Technical University of Athens (NTUA)** **Athens**  
*Excellent marks in all mathematical courses during the first two (2) years.* 2014
- **"The Great Moment of Education" Eurobank EFG Scholarship** **Chalkida**  
*Highest rank in National Qualifications Exams in my school - 1000 Euros* 2012

## Affiliations

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- Affiliated PhD student in HiPEAC (European Network of Excellence on High Performance and Embedded Architecture and Compilation)
- IEEE member

## Languages

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- **Greek** (Native)
- **Italian** (Beginner)
- **English** (B2 (FCE, KPG))
- **Spanish** (Beginner)

## Personal Interests and extra-curricular activity

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- Challenges
- Writing
- Travelling
- Cooking
- Basketball
- Cinema

## References

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References available upon request.