

# CURRICULUM VITAE

DR. SPYROS ZOUPANOS

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## PERSONAL INFORMATION

Date of birth: 3rd of December, 1982

Nationality: Greek

Spoken languages: English, French, Greek

Current position: Researcher and software engineer at École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

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I am a researcher, software engineer and data management professional, currently working at École Polytechnique Fédérale de Lausanne (EPFL) in Switzerland as a scientific collaborator and lead developer of the AiiDA platform (<http://www.aiida.net>). I have obtained a Ph.D. from INRIA, France in efficient peer-to-peer data management as well as a B.Sc. and an M.Sc. in Computer Science from the National University of Athens, Greece. I spent two years at the Max-Planck-Institut für Informatik in Germany as a post-doctoral fellow pursuing big data analytics problems. I have also worked at Quartet Financial Systems in Paris, France on the development of an in-memory multidimensional database and at Max-Planck-Institut für Physik in Germany where I managed and implemented the single sign-on project of the Institute.

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## CURRENT POSITION

6/2015-present Researcher and software engineer at EPFL, Lausanne, Switzerland.

AiiDA (Automated Interactive Infrastructure and Database for Atomistic simulations), developed within MARVEL-EPFL, is a complex framework that acts as a flexible and scalable infrastructure for high-throughput computational materials science. My responsibility as one of the lead developers is to contribute to the data management, scalability, query optimization and software engineering problems that arise.

Technologies used: Python 2.7, SQLAlchemy, Django, relational databases (PostgreSQL).

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## RECENT POSITIONS

7/2014-6/2015 Software engineer and manager of the single sign-on project at Max-Planck-Institut für Physik, Munich, Germany.

Single sign-on infrastructure allows users to authenticate in a secure way using the same credentials in various systems enabling them to use a variety of services. I analysed the institute's needs, I designed and I performed the migration to the new authentication mechanism.

Technologies used: Kerberos, LDAP, NFS, Active Directory, Samba, Linux, Windows.

10/2012-7/2014 Senior developer at Quartet Financial Systems, Paris, France.

ActivePivot is an in-memory database platform that enables instant analysis of complex and dynamic data. I provided efficient solutions to open problems, redesigned parts of the system and participated in the analysis and the documentation of complex parts of the platform. Moreover, I made the connection between academia and I also adapted ActivePivot to Quartet's clients needs.

Technologies used: Java 8 core and Web services.

9/2010-9/2012 Post-doctoral fellow at Max-Planck-Institut für Informatik, Saarbrücken, Germany.

The post-doc focused on knowledge extraction from large document collections. We analysed journal articles by extracting useful information categorised in certain relations. We also worked on the extraction of frequent word sequences (with gap) from big document sets. We developed and optimized distributed

(MapReduce) algorithms focusing on good partitioning of the given collection and problem. Research results presented in top-tier international conferences (see extended CV).

Technologies used: Java 7, MapReduce, Hadoop, HBase, HDFS.

- 12/2009-9/2010 Post-doctoral collaborator of the Leo Team at INRIA-Saclay-Ile de France, Orsay, France.  
After the end of my Ph.D. thesis, I continued working in the same team on remaining open problems.
- 9/2009-9/2010 Teaching assistant at University Paris 9 (Dauphine). For more information, please see below.
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## EDUCATION

- 10/2006–12/2009 Ph.D. student at INRIA-Futurs (Gemo Team), Orsay, France.  
Thesis title: *Efficient peer-to-peer data management*, Supervisors: *Prof. Serge Abiteboul and Prof. Ioana Manolescu*.  
The ActiveXML language enables the declarative specification of distributed applications integrating XML data and Web services. During the first half of my thesis, I worked on specifying and prototyping an AXML optimizer. In the sequel, I worked on the efficient rewriting of XQuery queries using stored views at a structured P2P network. We developed a full application able to index views, rewrite queries based on the available views and execute the rewritten queries. Large scale experiments were performed using 250 computers. Research results presented and prototypes demonstrated in top-tier international conferences and national summer schools(see extended CV).  
Technologies used: Java core and Web services, XML, XQuery, XPath, XSLT, bash scripting.
- 10/2004–10/2006 Postgraduate Student (M.Sc. in Advanced Information Systems) at the Department of Computer Science and Telecommunications, National University of Athens, Greece. GPA: 8.66/10  
Thesis title: *Optimizing queries using materialized views*, Supervisor: *Prof. Alex Delis*.  
The thesis focused on building a tool illustrating the performance gains enabled by the usage of materialized views in a relational database management system by estimating query costs and by visualising relational plans.  
Technologies used: C++, QT for the GUI.
- 10/2000–10/2004 Undergraduate Student at the Department of Computer Science and Telecommunications, National University of Athens, Greece. GPA: 7.79/10  
Thesis title: *Performance Measuring Tool for Database Systems*, Supervisor: *Prof. Yannis Ioannidis*.  
We developed a web-based application enabling students to test the performance of a relational database without the need to know SQL.  
Technologies used: HTML, Javascript, Oracle database.
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## PROGRAMMING AND SYSTEMS EXPERIENCE

- Programming skills: Java 8 (core and Web services), Python (experience with frameworks: SQLAlchemy and Django) C++, C, Bash, XSLT, XPath, XQuery, JavaScript.
  - Databases: PostgreSQL, Oracle, Microsoft Analysis Services, ActivePivot.
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## OTHER ACTIVITIES

- Participated in the Swiss national project MARVEL, the European projects CoherentPaaS & LAWA and the project Views in P2P within ANR Codex (see extended CV).
  - Taught and assisted to XML, database and data management courses at M.Sc. & B.Sc. level (see extended CV).
  - Reviewer and external reviewer at international journals and conferences (see extended CV).
  - ACM's SIGMOD 2008 experimental repeatability committee member.
  - Attended 8th EDBT Summer School Database Technologies for Novel Applications.
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## LANGUAGE SKILLS

- Greek (native tongue), English (proficient), French (advanced), German (beginner).