

PERSONAL INFORMATION



Francisco Javier Pulido Arrebola

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Sex Male | Date of birth 06 September 1982 | Nationality Spanish

WORK EXPERIENCE

February 2015 – present

Research assistant at project: Intelligent Platform for Dynamic Management of Traffic Flows.

Universidad de Málaga, Departamento de Ingeniería de las Comunicaciones.

- Project granted by Junta de Andalucía (Spain) G-GI3001/IDI0 and funded by the European Union (ERDF).

- Design and development of an online route planner. Experience with the following technologies: C++11, OSRM, Open Street Maps, Linux.

June 2009 – January 2013

Research assistant at project: Efficient Algorithms for Multicriteria Heuristic Search.

Universidad de Málaga, Departamento de Lenguajes y Ciencias de la Computación

- Excellence research project granted by Junta de Andalucía (Spain) P07-TIC-03018. Projects involved:

- 1.5 years of experience in analysis, design and development of graph search algorithms to implement the planning and scheduling of the shots taken by an Earth Observing Satellite. Technologies employed: C++, Java, and Common Lisp.
- 2 years of experience in analysis, design, development and test of graph search methods and algorithms with multiple criteria. Development of benchmarks for an adequate comparison and experimental evaluation of those graph search algorithms. Formal analyses of their correctness and empirical analyses of their relative performance on random grid problems and the road networks of the USA were conducted. Technologies employed: Common Lisp to extend data structures, design and implement algorithms, run experiments and visualize results through graphics. C++ 11 with Boost to develop algorithms in collaboration with Greek colleges. Finally, Matlab and Latex to create graphic comparisons and write scientific documents, respectively.

June 2008 – February 2009

Research internship

Quidamtur SLL in collaboration with Universidad de Málaga.

- R&D Project: "Indicadores de turismo responsable"

Analysis and design of a web application and a fuzzy database to assess sustainability of tourism services. Evaluate the sustainability of the tourism agencies involved and the possibility of online booking by users. Technologies employed: Java and library Ext-JS, JSON, Fuzzy SQL and PL-SQL. Database: Oracle 10g.

October 2007 – June 2008

Research grant

Grantee by Spanish Ministry of Education and Science

Research Project: Client application to manage Fuzzy Oracle databases. Development, testing and maintenance of a desktop application written in Delphi to manage Oracle databases with the capability to perform fuzzy queries.

EDUCATION AND TRAINING

2011-Current

Ph.D in Computer Science (*expected July 2015*)

Universidad de Malaga, Spain.

Analysis, development, testing and debugging of Multicriteria Graph Search Algorithms with goal-based preferences. Several contributions have been made in this field, first, introducing new algorithms and proving mathematically and empirically that they outperform previous approaches in literature, second, the proposition of a new time efficient technique to speed-up Label-setting exact Multicriteria Graph Search Algorithms runtime in several orders of magnitude.

In addition, I stayed in the Department of Computer Engineering & Informatics in Patras, Greece, collaborating with professor Christos Zaroliagis in the development of PGL: A library of efficient graph structures and algorithms for large scale networks, developed in C++ with Boost.

<https://www.ceid.upatras.gr/webpages/faculty/zaro/software/pgl/index.html>

Technologies employed in the development of these algorithms in my PhD: Common Lisp and C++.

2009-2010

Masters of Science in Software Engineering and Artificial Intelligence

Universidad de Malaga, Spain

- Dissertation: Multiobjective heuristic graph search for scheduling an earth observing satellite. Development of planning and scheduling algorithms for an EOS. Technologies employed: C++.

2005-2009

Bachelor of Science in Computer Engineering

Universidad de Malaga, Spain

- Dissertation (with honors): *FuzzyTourism*, Tourism Services Information System with Fuzzy Evaluation of Sustainability. Technologies employed: Java and library Ext-JS, JSON, Fuzzy SQL and PL-SQL. Oracle 10g.

2000-2005

Bachelor of Science in Software Engineering

Universidad de Málaga, Spain

- Dissertation: *Medusa 2*, an enhanced client for Oracle. Windows client application to manage Oracle databases. Technologies employed: Delphi and Oracle 8i. http://www.lcc.uma.es/~ppgg/PFC/Medusa/Medusa2_Eng.exe

PERSONAL SKILLS

Mother tongue(s)

Spanish

Other language(s)

UNDERSTANDING

SPEAKING

WRITING

Listening

Reading

Spoken interaction

Spoken production

English

C1

C2

C1

C1

C2

Italian

A2

A2

A2

A2

A2

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Communication skills

- Team work: I have worked in various types of teams, from research teams to national league volleyball teams (semi-professional volleyball player for 8 years). I coordinated and organized several National and European University Volleyball Championships.
- Collaborator in several projects and congresses: I was granted by the European Higher Education Area in Spain and I collaborated in the 18th European Summer School of Logic and Language Information organization.

Programming language skills

- Functional and Logic Programming: Common Lisp, Haskell, and Prolog.
- Object Oriented Programming and Modeling: C++, Delphi, J2EE, and UML.
- Web Programming: HTML5, CSS, Javascript, JSON, and XML.
- Other Scientific Programming Languages: Matlab, TeX/LaTeX, Lex, and Yacc.

Database skills

- Oracle, PL-SQL, Access, MySQL.

Driving licence

A and B

ADDITIONAL ACADEMIC INFORMATION

University stages

- Department of Computer Science, University of Maths, Belgrade (Serbia). February-March 2013.
- Computer Engineering & Informatics Department, University of Patras (Greece). May-July 2013.

Publications

- An Analysis of Bidirectional Heuristic Search in Game Maps, CAEPIA 2011.
- A Two-Phase Bidirectional Heuristic Search Algorithm, Frontiers in Artificial Intelligence and Applications, 240-251, STAIRS 2012.
- Searching Graphs with Lexicographic Goal References, 22nd International Conference on Multiple Criteria Decision Making - MCDM 2013.
- Multiobjective Search with Lexicographic Goal-based Preferences, European Journal of Operational Research 239(1): 89-101 (2014). <http://dx.doi.org/10.1016/j.ejor.2014.05.008>
- Dimensionality Reduction in Multiobjective Shortest Path Search, Computers & Operations Research (2015). Accepted paper. <http://dx.doi.org/10.1016/j.cor.2015.05.007>