

SALVADOR ALCÁNTARA



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EDUCATION

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|-----------|---|
| 2005–2011 | MSc, PhD in <i>Industrial Informatics—Automatic Control</i> (Computer Science/Eng. program) Dept. of Telecommunications and Systems Engineering Universitat Autònoma de Barcelona Doctoral Thesis: <i>Analytical design of feedback compensators based on robustness/performance and servo/regulator trade- offs: utility in PID control applications</i> |
| 2006–2010 | Completed 210 credits towards the BSc in Mathematics Universitat Autònoma de Barcelona Lacking 3 electives (18 credits) and the FYP (12 credits) |
| 1999–2004 | BSc in Computer Science/Eng. (5-year degree) Universitat Autònoma de Barcelona Diploma Thesis: <i>Fast Discrete Wavelet Transform</i> Awarded <i>Distinction with Honours</i> in around 10 subjects |
| 1995–1999 | Secondary school VIARÓ (private school) <i>Special Award</i> (got my first year at university for free) |

WORKING EXPERIENCE

11/2018–Present Software Engineer
Auvik

Software development within the *Traffic Insights* project.

09/2015–11/2018 Full Stack Engineer
Talaia

I join Talaia (now Auvik) to help migrate from a coupled monolith to a (micro-)service/distributed architecture. Overall, I work on different fronts, playing a traversal role within the company, where I am a shareholder since late 2017.

Frontend:

- Add new features using Python/Django and Javascript (jQuery, D3, React)
- Conversion into multi-tenant SaaS
- Integration with IdPs (login via SAML/SSO)
- REST APIs (Django REST Framework)

Backend:

- Add new features and fix bugs in the existing —legacy— NetFlow core processor written in C
- Minor excursions into Go for network-related tasks (e.g., replicate a NetFlow stream)
- Create small DSLs using ANTLR4
- Develop the app classification module within the new (distributed) NetFlow processing engine using Scala/Apache Flink and Machine Learning techniques
- Getting familiar with specialized data structures and algorithms (Bloom Filters, Count Min Sketches, Decision Trees, Frequent Itemset Mining, Stream Processing)

DevOps/Others:

- Ansible, Fabric, Vagrant, Docker, GCP (Kubernetes), Gitlab CI, Fluentd, Collectd, Grafana
- Occasionally, conduct onpremise installations and provide support/training to our customers
- Write and review deliverables for different projects (project funding)

08/2014–09/2015 Project Engineer
Sipro Ingeniería

Execution of software-related tasks within Industrial Automation Projects:

- System Integration Services
- Industrial Control Systems: SCADA and PLC programming (Wonderware, Citect, Unity, S7)
- Development of reporting applications for sensor data (SQL Server, SSRS, .NET)

09/2012–08/2014 R&D Engineer / Marie Curie fellow
Pure Air Solutions
Zwolle, The Netherlands

Experienced Researcher within the european IAPP project Next Air Biotreat, where I (technically) lead one of the work packages.

Tasks:

- Supervision of Early Stage Researchers
- Modelling and simulation using MATLAB (see this)
- Study and evaluation of different control strategies (Fuzzy control, PID control + decoupling)
- PLCs/SCADA programming for the control of industrial biotrickling filters (PLC used: TBOX MS32 from CSE Semaphore)
- Design and implementation of a web-based monitoring platform for the company's PLCs data. Technologies used:
 - VB.NET, MODBUS/TCP
 - HTML, CSS, Javascript and PHP (Yii framework)
 - MySQL database

10/2011–09/2012 Postdoctoral Researcher
Dept. of Telecommunications and Systems Engineering (UAB)
Obtained the accreditation for the following (tenure-track) positions:

- *Profesor Ayudante Doctor* (Spanish level)
- *Professor Lector* (Catalonia)

09/2007–09/2011 Predoctoral Scholar (PhD student)
Dept. of Telecommunications and Systems Engineering (UAB)

- 09/2005–09/2007 Adjunct Lecturer
Dept. of Telecommunications and Systems Engineering (UAB)
Some teaching within the Computer Eng. degree (only labs):
- Signals and Systems (3rd year subject)
 - Signal Processing (3rd year subject)
 - Automatic Control (4th year subject)
 - Supervisor of around 10 FYP students
- 07/2004–09/2005 Software Engineer
Intelogistica—later Coordina, finally acquired by TomTom
- Tasks:
- Symbian smartphones programming in C++. Design and implementation of GPS-based applications
 - Brief exposure to some JAVA frameworks (Hibernate, Spring)
- 06/2003–07/2004 Junior Web Programmer
PHP, JavaScript, MySql (Half-day work)
Track SL
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FURTHER EDUCATION / TRAINING (MOST RECENT ONLY)

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| 2018 | Courses on SOLID, Hexagonal Architecture, ES/CQRS CodelyTV |
| 06/2018 | deeplearning.ai specialization Coursera |
| 04/2018 | Machine Learning course Coursera, Stanford University |
| 08/2017 | Deep Learning Nanodegree Udacity |
| 03/2014 | OPC Connectivity Hands-on training workshop by MatrikonOPC Barcelona, Spain |

LANGUAGE KNOWLEDGE

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| English | 12/2007 Certificate in Advanced English (CAE) Cambridge English — Language Assessment |
| Spanish/Catalan | Mother tongues (bilingual) |

INTERESTS AND ACTIVITIES

- Software Engineering (SOLID, TDD, DDD, ES/CQRS)
- Databases, Big Data, Distributed Systems
- Machine Learning (Deep Learning)
- DevOps (CI & CD)
- Control Engineering (PLCs, PID control, Kalman filtering)
- Functional Programming, Category Theory
- Blockchain, Cryptocurrencies
- Jogging, Bodybuilding

REFERENCES

These persons are familiar with my professional qualifications and my character:

(from industry)

Josep Sanjuàs Cuxart

Co-founder, CTO at IoMob

Former Co-founder, CEO at Talaia, acquired by Auvik

Linkedin: <https://www.linkedin.com/in/jsanjuas/>

Feliu Sempere

R&D Engineer at AIMPLAS · Technological Institute of Plastics

Former Process Engineer at Pure Air Solutions

Linkedin: <https://www.linkedin.com/in/feliu-sempere/>

Cristian Martí

Founder at Methinks

Former CEO at Coordina, now a TomTom company

Linkedin: <http://www.linkedin.com/in/cristianmarti/>

(from academia)

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Prof. Weidong Zhang

Shanghai Jiao Tong University (Dept. of Automation)

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Prof. Sigurd Skogestad

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December 17, 2018