DAVID ÁLVAREZ ROSA

Mathematics and Industrial Engineering student

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🔗 david.alvarezrosa.com   gitlab.com/DavidAlvarez   🎂 October 10, 1998

EDUCATION

Degree in Mathematics   240 ECTS
Polytechnic University of Catalonia – FME

📅 September 2016 – Present   📍 Barcelona, Catalonia

- Relevant **subjects**: Linear Algebra, Calculus, Mathematical Programming, Algorithmics, Abstract Algebra, Geometry, Analysis, Differential Equations, Probability and Statistics.

Rigorous and proof-oriented course with a robust mathematical base and providing a solid knowledge in its applications (algorithms, computing).

Degree in Industrial Technology Engineering   240 ECTS
Polytechnic University of Catalonia – ETSEIB

📅 September 2016 – Present   📍 Barcelona, Catalonia

- Relevant **subjects**: Mechanics, Thermodynamics, Electromagnetism, Electrotechnics, Fluid Mechanics, Materials and Electronics.

Multidisciplinary and integrative vision of industrial engineering. Acquired knowledge and skills essential for future technological development.

Scientific and Technological Baccalaureate   2 years
Irabia-Izaga school

📅 September 2014 – June 2016   📍 Burlada, Navarre

- Final grade: 9,47/10.
- University access exam grade (*Selectividad*): 12,76/14.

Compulsory Secondary Education   4 years
Irabia-Izaga school

📅 September 2010 – June 2014   📍 Burlada, Navarre

COURSES

Game theory   20 hours
Polytechnic University of Catalonia – CFIS

📅 April 2019   📍 Barcelona, Catalonia

Game theory is the study of **mathematical models** of strategic interaction among **rational** decision-makers. It has applications in fields such as economics, logic and computer science.

Introduction to Machine Learning & Deep Learning[1]   20 hours
Polytechnic University of Catalonia – CFIS

📅 January 2019   📍 Barcelona, Catalonia

- Basic principles of machine learning and classical methods.
- Introduction to deep learning from both an algorithmic and computational point of view.
- Study of its applications to reinforced learning and the analysis of multimedia content.

INSPIRATION

"The science of today is the technology of tomorrow."

SKILLS

Accustomed to working in a team, motivated and detailed in projects.

Programming languages.

Solid knowledge of:

C++   Python   Octave/Matlab

Notions of: AMPL   Bash

Experience in **web development**:

HTML   CSS   JavaScript   PHP

Others: Linux   Git   ROS   LaTeX

LANGUAGES

Spanish   ●●●●●
Mother tongue.

English   ●●●●◐
C1 level accreditation in August 2017.

Catalan   ●●●○○
Very good understanding of the language. Basic level in oral and written expression.

AWARDS

🏆 **Spanish Mathematical Olympiad**
📅 January 2016   📍 Pamplona, Navarre
Second position in the local phase.

🏆 **Spanish Physics Olympiad**
📅 March 2016   📍 Pamplona, Navarre
Winner of the local phase.

🏆 **Spanish Physics Olympiad**
📅 April 2016   📍 Seville, Andalusia
Silver medal in the national phase.

PROJECTS

Driverless – Motorsport

20 hours/week

Polytechnic University of Catalonia – ETSEIB

September 2019 - Present

I'm part of the **Perception** section of Driverless UPC team, which is a team formed by undergraduate engineers in charge of the designing, manufacturing and testing of a **fully autonomous** car that will participate in national and international competitions between universities.

Robotic Arm – Tic Tac Toe[3]

75 hours

Polytechnic University of Catalonia – ETSEIB

January 2019 - June 2019

Creation of a virtual animation of a **robotic arm** able to play the Tic Tac Toe game and **never lose**. The source code of this project can be found in my personal Gitlab page[4].

Email server

15 hours

Personal project

August 2018 - September 2018

- Configuration of a modern and secure personal email server based on free software (Postfix and Dovecot).
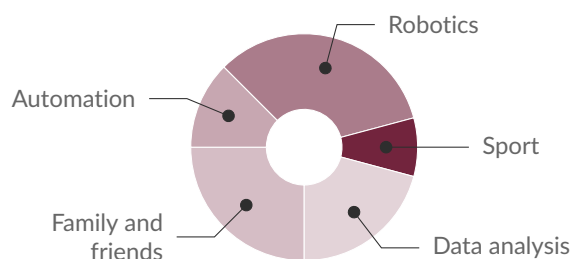- Supports opportunistic TLS and IMAP access.

Study Schedule[5]

60 hours

Polytechnic University of Catalonia – ETSEIB

January 2018 - June 2018

Creation of a customized study schedule generator adapted to students, through **data analysis**: clustering/k-nearest-neighbours. In particular, based on past grades, desired performance and schedule restrictions we were able to create the best study schedule possible to **maximize** the user **performance**.

INTERESTS

OTHERS

Former violinist
2008 - 2015   Pamplona, Navarre

I played the violin in the conservatory in the first courses.

Tutor
Academic classes of support and preparation for the Mathematical Olympiad.

Linux user
Years of use of Linux distributions (Arch, Debian y Ubuntu).

System administrator
Administrator of personal Virtual Private Server: data synchronization between devices, website[2], email, personal Git server.

Athlete
Regular sportsman, runner and ex-triathlete.

Driving license
October 2017   Pamplona, Navarre

Spanish car driving license (B).

FOOTNOTES

For the accessibility of the document, the most relevant links are included.

1. sites.google.com/view/dlcfis2019/home
2. david.alvarezrosa.com
3. gitlab.com/DavidAlvarez
4. david.alvarezrosa.com/tres-en-raya
5. http://david.alvarezrosa.com:5000/