

DAVID ÁLVAREZ ROSA

Mathematics and Industrial Engineering student

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✉ C/ Agrupación Olaz nº 16, Bajo 📍 Olaz, Navarra
in david-alvarez-rosa 🎂 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.

A rigorous and proof-oriented course with a robust mathematical base, 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, Navarra

- 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, Navarra

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 Learning¹ 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 R

Experience in web development:

HTML CSS JavaScript PHP

Others: Linux Git ROS L^AT_EX

LANGUAGES



Spanish ●●●●●

Mother tongue.

English ●●●●●

C1 level accreditation (August 2017).

Catalan ●●●●●

Very good understanding of the language. Intermediate level in oral and written expression.

AWARDS



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

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

🏆 **Spanish Mathematical Olympiad**
📅 January 2016 📍 Pamplona, Navarra
Second position in the local 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 Toe³

75 hours

Polytechnic University of Catalonia – ETSEIB

January 2019 - June 2019

Creation of 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 page⁴.

Email server

15 hours

Personal project

August 2018 - September 2018

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

Study Schedule⁵

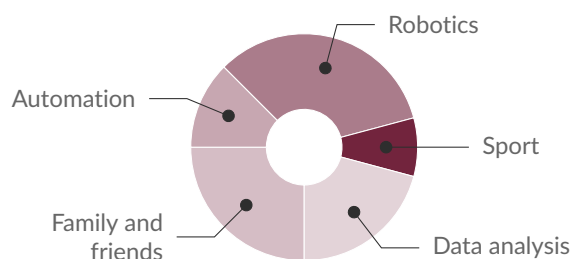
60 hours

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 user performance**.

INTERESTS



OTHERS



Former violinist

2008 - 2015

Pamplona, Navarre

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

Tutor

Academic classes of support and preparation for the Mathematical Olympiad.



Linux user

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



System administrator

Administrator of a personal Virtual Private Server: data synchronization between devices, website², email, personal Git server.



Athlete

Regular sportsman, runner and ex-triathlete.



Driving license

October 2017

Pamplona, Navarre

Spanish 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. david.alvarezrosa.com/tres-en-rama
4. gitlab.com/DavidAlvarez
5. <http://david.alvarezrosa.com:5000/>