

# PAU SABATER NÁCHER

Valencian living in Barcelona, Spain

Updated on August 25, 2023

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## EDUCATION

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**CFIS, Interdisciplinary Higher Education Centre**  
Technique University of Catalonia, BarcelonaTech (UPC)

September 2021 - Current

Honours bachelor's degrees in MATHEMATICS. Recipient of a full tuition fee waiver and an accommodation scholarship (awarded based on academic merit).

Honours bachelor's degrees in PHYSICS ENGINEERING. Recipient of a full tuition fee waiver and an accommodation scholarship (awarded based on academic merit).

**Maristas Mediterranea**

2019-2021

High-school diploma, with honours. University admission mark: 13.61/14

## EMPLOYMENT, PROFESSIONAL CAREER

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**Esperanto Technologies Europe S.L.**  
*SOFTWARE ENGINEER & DATA SCIENTIST.*

July 2023 - Currently

*Machine Learning Operator C++ implementation using RISC-V block assembling with Esperanto extension. Designing, implementing, and optimizing the ML stack. Massively-parallel AI accelerator targeting ML applications such as image-classifiers, object-detectors, recommendation systems, and NLP programs, and also integrating and validating the different components of the SW stack, and incorporating and qualifying new ML models of interest. Development of inference servers, integrating Machine Learning frameworks in the Esperanto stack like ONNX or Pytorch, and building a high-performance ML compiler targeting an specialized RISC-V architecture. Efficiency maximization using techniques such as vectorization, (multi-)threading and tensor extensions from Esperanto Technologies. Implementation with a functionality verification protocol using a test set in GTEST format and characterize the performance obtained by benchmarking with Esperanto ETSOC-1 devices.*

**Institut de Robòtica i Informàtica Industrial, CSIC-UPC**  
*INTERN ELECTRONIC RESEARCHER.*

February 2023 - June 2023

*Receipient of INIREC UPC research grant.*

*Drone thrust controller and software development for the High Dynamics Robotics department (HiDRo). Development and test towards a custom PCB implementing ADC, timer management and PID algorithm for drone helixes high dynamic procedures and communication. Experienced with GIT, STM32 Cube/MX/Prog/CubeIDE... for microcontroller programming, KiCAD for PCB design and other software tools (QGroundControl) for communication protocols (OneShot125).*

**UPC EcoRacing Formula Team, ESEIAAT Aeronautics, Barcelona**  
*ELECTRONIC ENGINEER.*

Sept 2021 - March 2022

*PCB design (with Proteus) and microcontroller programming (with C) for legal car improvement regulations under competition requirements updates.*

*DC-AC inverter design planification so as to substitute sponsor's one.*

*Technical and economic reports development. Team logistic management for international competitions.*

## MORE EDUCATION. OTHER ACTIVITIES AND FONDNESSES

<b>Feb 2022</b>	<b>Persuasive communication</b> and relational styles course - 5 fars Institute <i>Marketing, interpersonal, team and public communication for business and science.</i>
<b>2020</b>	<b>Data Analytics and Assessment for business</b> - Imperial Collage of London <i>Finance and economics course with Microsoft tools.</i>
<b>2013-2022</b>	<b>Violin Professional Studies</b> - Conservatori Mestre Vert, Carcaixent, Valencia. <i>Professional training in violin. Harmonic, analytical, piano and orchestral knowledge.</i>
<b>2015-2019</b>	<b>Mathematical Talent Stimulation (ESTALMAT CV)</b> <i>Advanced mathematics contest for young students. Contact with physics and mathematics eminences. Valencian universities collaboration.</i>

## ACHIEVEMENTS, AWARDS AND PRIZES

<b>Realfooder HACKATHON</b> - 3rd place <i>IMMUNE Tech Institute, Madrid. JavaScript database management for food distribution optimization.</i>	<i>Februrary 2022</i>
<b>CFIS accomodation scholarship</b> for double degree studies.	<i>Barcelona, July 2021</i>
<b>Medalla SOS</b> - Best academic trajectory in Maristas School	<i>June 2021</i>
<b>Guadalaviar Mathematics Olympiad</b> - 3rd place <i>Valencia mathematics olympiad. Sponsored by Banco Santander, and U-Tad Tech Institute.</i>	<i>April 2021</i>
<b>BIOLOGY National Olympiad OEB</b> - Comunitat Valenciana Winner <i>Theorical and practical skills competition.</i>	<i>March 2021</i>
<b>Generalitat Valenciana Academic Achivements Awards</b> <i>Recognition for excellent academic record. Average mark: 9.98/10</i>	<i>Sept 2019</i>
<b>Al-kwarismi Mathematics Olympiad</b> - Comunitat Valenciana 1 <sup>st</sup> place <i>Real Sociedad Española de Matemáticas olympiad for last high-school courses.</i>	<i>May 2019</i>
<b>Puig Adam Mathematics Olympiad</b> - 2nd place <i>Universidad Complutense de Madrid mathematic olympiad for last high-school courses.</i>	<i>March 2019</i>
<b>Kangaroo Mathematic Olympiad</b> - Comunitat Valenciana 6th place	<i>March 2019</i>
<b>Guadalaviar Mathematics Olympiad</b> - 1st place & Special Mention <i>Valencia mathematics olympiad. Sponsored by Banco Santander, and U-Tad Tech Institute.</i>	<i>April 2018</i>
<b>Kangaroo Mathematic Olympiad</b> - Comunitat Valenciana 5th place	<i>March 2018</i>
<b>Al-kwarismi Mathematics Olympiad</b> - Comunitat Valenciana 7 <sup>th</sup> place <i>Real Sociedad Española de Matemáticas olympiad for former high-school courses.</i>	<i>May 2017</i>
<b>Guadalaviar Mathematics Olympiad</b> - 1st place & Special Mention <i>Valencia mathematics olympiad. Sponsored by Banco Santander, and U-Tad Tech Institute.</i>	<i>April 2016</i>
<b>Generalitat Valenciana Academic Achivements Awards</b> <i>Recognition for excellent academic record.</i>	<i>Sept 2015</i>
<b>Al-kwarismi Mathematics Olympiad</b> - Comunitat Valenciana 1 <sup>st</sup> place <i>Real Sociedad Española de Matemáticas olympiad for children.</i>	<i>May 2015</i>
<b>Guadalaviar Mathematics Olympiad</b> - 1st place <i>Valencia mathematics olympiad. Sponsored by Banco Santander, and U-Tad Tech Institute.</i>	<i>April 2014</i>

## LANGUAGE SKILLS

Spanish	<i>NATIVE</i>
Catalan/Valencian: <i>Certificat Superior JQCV, C2</i>	
English: <i>Advanced Cambridge ESOL Certificate, C1</i>	<i>ADVANCED FLUENT</i>
Italian	<i>INTERMEDIATE</i>
Portuguese	<i>BASIC</i>
French	<i>BASIC</i>

## OTHER SKILLS & IMPLEMENTS

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### **Programming Languages**

Python, C, C++, Git, AMPL, SQL, JavaScript, MATLAB

### **Python Packages**

Pandas, Matplotlib, Numpy, Scipy, Jupyter,

### **Software & Tools**

JIRA, Confluence, Slack, HTML, LaTeX, Excel, Mathematica, Arduino, Raspberry, Spyder, VisualStudio, Atom, VIM, AutoCad, KiCAD, Proteus, Eagle, STM32, Multisim, DaVinci, Photoshop, Muscore

### **Methodologies**

Tracking, Agile