Guillem Tutusaus Alcaraz

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I am a graduate student in Mathematics at Universitat Autònoma de Barcelona. Currently, I am looking to join the Aeronautical and Aerospace Industries. My main interests range from Stochastic processes, applied to Financial Engineering, to Fluid Dynamics and other aspects in Computer Science, Physics and Engineering.

EDUCATION

Bachelor's Degree in Mathematics   September 2018 - July 2024
Universitat Autònoma de Barcelona   Cerdanyola, Spain

WORKING EXPERIENCE

Private Tutor   November 2023 - Currently
ONA Centre   Barberà del Vallès, Spain

- Mathematics, Physics and Chemistry on a Baccalaureate level.

Market Research Analyst `IBM SPSS` `MS Excel` `R`   August 2023 - November 2023
Biotecnal S.A.   Sant Quirze del Vallès, Spain

- Studied consumer behavior, designing and controlling all kinds of products, allowed to respond to the demands of the market in front of consumers, manufacturers and distributors.
- Used IBM SPSS as well as MS Excel and R to make inference on data using diferent statistical tests.

Private Tutor   October 2018 - June 2020
Professors particulars DAFME   On-site, Spain

- Collaborated with students to comprehend the lesson, identify lacking skills and correct weaknesses. Also prepared students for the University access exam (PAU).

ACTIVITIES & VOLUNTEERING

UABTheHack 2024 `Python` `Problem-solving` `Git`   May 18 - May 19, 2024
by Universitat Autònoma de Barcelona   Cerdanyola, Spain
                                                                                    Code

- Participated on Caixa d'Enginyers' challenge for their upcoming travelling cashier service.
- Their challenge was to create a program, which given some parameters like initial position, time and destinations it would give a route to follow by solving the Travelling Salesman Problem (TSP).

HackUPC 2024 `C++` `AI` `Programming`   May 3 - May 5, 2024
by Universitat Politècnica de Catalunya   Barcelona, Spain
                                                                                    Code

- Hackathon where different companies such as ESA, Vueling, TravelPerk and others posted different real-life challenges for students to solve.
- Gained knowledge on the heuristics of artificial intelligence and the optimization of time in algorithms.

ICIAM Lecture Coordinator   July 15 - July 19, 2019
by Universitat de València   València, Spain

- In charge of coordinating the interventions of the congressmen who presented their research applied to different industries.

SELECTED PROJECTS AND REPORTS

Knots and the Jones Polynomial   February 2024 - June 2024
Reidemeister Theorem, Algebraic Invariants   📄 Report

- Study of Mathematical Knots making special emphasis to the Jones Polynomial Invariant and its aplications in Quantum Computing and Medicine.
- Advised by Joan Porti Piqué.

AI for Connect-4 Game   September 2022 - November 2022
Connect 4, C, AI, Minimax, Heuristics   ⌂ Code

- Implemented artificial intelligence for the classical Connect-4 game using the Minimax algorithm.
- Project conducted as part of the course *Advanced Mathematics* at the Autonomous University of Barcelona.
- Advised by Vicenç Soler.

Construction of a Low-Cost Weather Balloon   June 2017 - September 2018
Weather Balloon, Arduino, C++   📄 Report | ⌂ Code

- Built a Weather Balloon capable of taking multiple atmospheric measurements and record until reacing the atmosphere (30Km). This project was self-funded.
- Used Arduino and different sensors to take measures.
- Advised by Íngrid Muñoz, Joshua Tristancho and Núria Salán.

SKILLS

Industry knowledge	Programming │ Mathematical Modeling │ Numerical Analysis │ Time Series │ Financial Engineering │ Fast Fourier Transform
Programming Languages	C │ C++ │ Python │ LaTeX │ Maple │ Java │ R │ HTML │ SQL
Libraries and Frameworks	Numpy │ Matplotlib │ Make │ Cmake │ Pandas │ Pygame
Tools and Platforms	Microsoft Excel │ Microsoft PowerPoint │ VSCode │ Git │ Jupyter Notebook │ SageMath │ Arduino │ IBM SPSS
Soft Skills and Others	Resourceful │ Team Builder │ Innovative │ Curious │ Committed │ Persistent │ Competitive │ Ambitious │ Open-minded │ Responsible │ Problem-solving

LANGUAGES

English	Advanced (Level C1)
French	Basic (level A2)
Spanish	Native
Catalan	Native

OTHERS

Interests	Rockets │ Planes │ Engineering │ Hiking │ Swimming │ Climbing
Driving licenses	B