

ALESSANDRA FRENCH

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EDUCATION

University of Oxford, Oxford UK MEng Engineering Science	Oct 2021 - Present
Predicted First Class Honours, Ranked 29/174 Engineering Students in Class Part B exam marks: 77 overall, including 92 in Information Systems Engineering and 88 in Control Systems Engineering <small>* On leave March 2024 – Dec 2024 for orthopedic hip surgery</small>	
The Perse School, Cambridge UK A*A*A* in Maths, Further Maths, Physics, and Chemistry A-Levels	Sept 2019 - June 2021

AWARDS AND HONOURS

Institute of Engineering Technology Boost Scholarship, Future Talent Award	Dec 2023
Somerville College Scholarship , Awarded for academic performance	2025-2026
Somerville College Scholarship , Awarded for academic performance	2022-2023
Institute of Engineering Technology Diamond Jubilee Scholarship	Oct 2021
Gold Industrial Cadetship Award, Gold Crest Award Awarded for an Engineering Education Scheme project	April 2020

PROJECTS

Alternating Minimization Algorithms for Fast Path Planning <i>Master's Thesis (Ongoing)</i>	Oct 2025 - Present
· Ongoing project where I am developing algorithms that solve motion planning problems in high-dimensional environments with obstacles.	
Model free control policy search for liftable systems <i>EPSRC-funded Research Internship</i>	July – Sept 2023
· Selected for one of 15 Engineering and Physical Sciences Research Council (EPSRC)-funded summer research internships at Oxford University's Engineering Department (10 weeks). · Developed a Python-based solver to compute the LQR-optimal nonlinear controller for a nonlinear dynamical system in a model-free context. · Applied to nonlinear systems that admit finite-dimensional linear representations by selecting appropriate nonlinear observable functions on the state to form a Koopman-invariant subspace. · Analyzed rates of convergence with varying uncertainty in the polynomial degree of the system dynamics.	

SoleMate <i>Undergraduate Group Design Project</i>	Oct 2023 – June 2025
· Designed a somatosensory feedback replacement device to improve the walking gait of lower limb amputees.	

MathWorks Minidrone Competition <i>Team Competition</i>	June 2023
· Awarded 3rd place out of 152 teams competing from Europe, the Middle East, and Africa. · Competition where I used MATLAB and Simulink to program a drone to use an onboard camera and real-time control strategies to follow a previously unseen path and land on a landing pad.	

WORK EXPERIENCE AND INTERNSHIPS

Maths and Physics Tutor 2020 - Present
Private Tutor, Cambridge UK

- Teach maths and physics to two Year 10 students during my school holidays, prepared them for secondary school entrance exams and currently preparing them for GCSEs.

AstraZeneca Aug 2019
Internship, Cambridge UK

- Learned about bioinformatics and computational chemistry.

Cambridge University Hospitals: Addenbrooke's July 2019
Internship, Cambridge UK

- Shadowed clinicians during patient meetings (in neurophysiology and neurology departments) and helped set up EEGs or patients who had experienced seizures, learned about how clinicians interpret EEG data to give accurate diagnoses.

Vesper MEMS July 2019
Internship, Cambridge UK

- Engineering intern at a nanotechnology company developing microphones.
- Conducted experiments on the durability of a MEMS microphone; assessed the prototypes for any structural damage before and after tests using a powerful microscope, tested response to sound.

SKILLS

Programming Languages	Python, MATLAB, C++
Languages	French, Portuguese
Other Skills	Simulink, Stateflow, SolidWorks, BenchVue

EXTRACURRICULAR ACTIVITIES

- Oxford University Mixed Martial Arts** Varsity Team, won my bout. Started women's only MMA sessions as Women's Officer. Received Somerville College Sports Award. Oct 2022 - Present
- Gym Renovation Committee** Selected by the Somerville College Oxford Junior Common Room Committee to renovate college gym. Included repainting, purchasing powerlifting equipment, and replacing dangerous equipment. Required project planning, budgeting, public speaking, and teamwork. Feb – Nov 2023
- Volunteer Computer Science Teacher, Cambridge UK** Volunteer teacher to 30 Year 5 students in computer programming using BBC: Micro Bit, taught at Queen Edith and Fen Ditton Primary Schools. Sept. 2018 – April 2019

OTHER INFORMATION

I am a US Citizen and have Indefinite Leave to Remain in the UK (UK Home Student Fee Status).