Jonathan Ouwerx

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EDUCATION

Duke University, Trinity College of Arts and Sciences, Durham, NC **Aug 2023 – May 2026**
B.S. in Mathematics | B.S. in Computer Science — **GPA: 4.0**

- Coursework**:** Linear Algebra, Data Structures & Algorithms, Computer Architecture, Computer Security, Machine Learning
- Clubs**:** Duke Applied Machine Learning (DAML), DSP Business Organization, Catalyst Tech Pre-Professional Organization

Eton College, London, UK *King's Scholar (Academic Scholarship)* **Sep 2017 – Jun 2022**

WORK EXPERIENCE

Threefold **Aug 2022 – Jul 2023**
Software Developer (Decentralized Cloud Computing) *Zanzibar City, Tanzania*

- Utilized APIs and SQL to design and create a developer-facing client/SDK for Threefold's product management tool
- Created a declarative framework for building software based on the actor model, a concurrent computation architecture
- Developed prototype smart contracts on the Algorand blockchain to facilitate the use of NFTs as an authentication tool

Sustainable Growth Management (SGM) **Jun 2022 – Jul 2023**
Project Lead & Software Developer (Private Equity) *London, UK (Hybrid)*

- Created a deal-sourcing and pipeline management CRM for SGM's current ($500M AUM) and future assets
- Managed and coordinated four software developers using product management, version control and communication tools
- Utilized Django (Python) backend for database and Rest API / server, ReactJS for the client-side, Git & GitHub

Rolls Royce **Dec 2020 – Jun 2021**
Student Engineering Researcher (Aerospace & Defence) *London, UK*

- Researched Non-Destructive Testing solutions for the main circumferential weld of Rolls Royce nuclear reactors
- Worked in a team to perform experiments and create a 130-page research paper, liaising with a Rolls Royce mentor
- Awarded a British Science Association's CREST scheme Gold Medal for effective planning, leadership, and implementation

PROJECTS & COMPETITIONS

Jump CLI Tool & Online Demo **Jan 2025**
Personal Project – Online Demo (https://jump-demo-nine.vercel.app/)

- Developed a CLI tool in V to let users "jump" to preset directories, speeding up navigation in terminal workflows.
- Created a browser-based online simulator (TypeScript, React, Vite, Wouter, xterm.js) showcasing the CLI.

Duke Applied Machine Learning **Sep 2023 – Present**
Director (Jul 2024), Software Co-Head (Jan 2024), Developer (Sep 2023) *Durham, US*

- Coordinate a 300+ student club, managing and leading internal and client projects in data science, software and hardware
- Led the backend development of a hackathon application portal, Tech Tree Root, in Django using product management tools

Non-Trivial Fellowship Runner Up **Aug 2023**
Automated Parliaments – A Solution to Decision Uncertainty and Misalignment in Language Models (arXiv: 2311.10098)

- Awarded $5000 for proposing a multi-model AI parliament to solve decision uncertainty in a 40-page research paper
- Led a team that produced a mathematical model and attained experimental results showing the efficacy of the framework

Huxley Science Prize Winner **Sep 2021**
Theoretical and Practical Effectiveness of Greedy Algorithms for the Travelling Salesman Problem

- Composed a scientific paper proving tour length upper bounds of greedy algorithms and investigating efficiency differences
- Defended the paper in a 30-minute interview to an external adjudicator, a professor at Oxford University

Computational Physics Prize Winner **May 2021**
Computational Modelling of a Rover Descent from Atmosphere to Surface of Mars

- Modelled, using Python, a rover descent in 3D, accounting for Mars' rotation, stochastic wind, temperature, and air density
- Presented and defended project in 45-minute interview to a panel, writing in Jupyter Notebooks and LaTeX

SKILLS & INTERESTS

- **Technical Skills:** Python, Golang, Vlang, C, Java, JavaScript, React.js, Django, Git, HTML, CSS, SQL, Unix, Rest APIs
- **Interests:** French (fluent), Rugby, Tennis, Skiing, Carpentry, History, Effective Altruism (philanthropy)
- **A Levels:** A* Further Maths, A* Maths, A* History, A* Physics, **GCSEs:** 11 9s in various subjects (highest grade)
- **SATs:** 1580/1600, **Honors:** top 400 nationally in U18 British Maths Olympiad, 21st nationally in U16 Bebras Computational Thinking Challenge, top 127 nationally in the U16 British Physics Olympiad, Rugby 1st XV Colours, 2nd VI Tennis Colours