

# RONALD OSSAI

BRIGHTON, UNITED KINGDOM · +447767693627

[ronjossai@gmail.com](mailto:ronjossai@gmail.com) · [LinkedIn: Ronald Ossai](#) ·

**Summary** – Software Engineer/Full Stack Developer interested in Software Development, Machine Learning, Blockchain, Physics, Math, and Robotics. 8 Years programming, 2+ Years of Professional work experience.

## PROFESSIONAL WORK EXPERIENCE

**2015 (JULY-AUGUST)**

### TECHNICAL SUPPORT OFFICER- PC CORNER

- Facilitated the sales of various computer models to customers of different interests.
- Explained the technical specifications of products to customers prior to sale e.g., GPU hardware and display capability, refresh rate etc.- improved customer service skills.
- Gained exponential knowledge on the functionality of technical software and hardware.

**2020 (JULY-SEPTEMBER)**

### INTERNSHIP-GRAFFITI FURNITURES LTD

- Learned procedural and imperative programming language to help further understand the basic functions of the CNC machine.
- Learned about the functionality of rendering software for interior architecture.
- Facilitated logistical management tasks e.g. the movement of materials from the shop floor to the installation venue.
- Utilization of G-Code, M-Code to calculate dimensional drilling functions.

**2021-2022 (SEPTEMBER-JUNE)**

### STUDENT AMBASSADOR-ICA EW LTD

- Social media brand handler in the University of Sussex
- Opening STEM opportunities for Ethnic minorities on the University Campus

**2022-2023 (SEPTEMBER-SEPTEMBER)**

### IT TRAINEE PLACEMENT YEAR-ALLIANZ

- Junior Developer for Allianz 2022/2023, 1-year full-time work experience
- Utilized Docker for containerization of applications, streamlining development, testing, and deployment workflows.
- Contributed to DevOps and software development initiatives using Python, JavaScript, and SQL.
- Supported and maintained CI/CD pipelines, enhancing deployment efficiency and reliability. Gained hands-on experience with Amazon Web Services (AWS), supporting cloud-based infrastructure and deployment workflows.

## SKILLS

Python 2.0 and 3.0 (Django)  
Java (Learning Kotlin currently)  
SQL  
Microsoft Excel  
Visio  
Power BI  
Blender  
C++  
C#  
C  
R  
Rust (novice)  
AGILE  
Windows OS  
Computer Engineering  
Machine Learning  
Cybersecurity  
CNC Machinery  
Object Oriented Programming  
Functional Programming  
Imperative Programming  
Procedural Programming  
Amazon Web Services.

Teamwork  
Problem Solving  
Public Speaking and Extrovert  
Logic  
Adaptive Learning  
Grit  
Compassion

JavaScript  
Visual Basic  
HTML & CSS  
Microsoft Access  
Mathematics  
Physics (Quantum Physics and General Relativity + Astrophysics)  
Ui/UX  
Blender  
Unix  
Unity  
Unreal Engine  
Electronics  
Computer Graphics  
Computer Architecture  
Computer Vision  
Web 3D applications (threejs + bootstrap)  
TypeScript  
React/Tailwind  
Video Editing  
Linux  
IT support

Time management  
Conceptual Thinking  
Report Writing

## EDUCATION

2021-2025

**COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE (WITH AN INDUSTRIAL PLACEMENT YEAR) BSC**, UNIVERSITY OF SUSSEX

Undergraduate Honors in Computer Science and Artificial Intelligence BSc on track for 2:1

Key modules included are:

Natural Language Engineering  
Compilers and Computer Architecture  
Machine learning  
Computer Vision  
Neural Networks

2017-2019

**FOUNDATION**, BRIDGEHOUSE COLLEGE – INCLUDING A IN IT, A IN MATHS

2017

**IGCSE**, DAYWATERMAN COLLEGE NG- 2 A\*S (INCLUDING ICT), 3A'S (INCLUDING MATHEMATICS AND PHYSICS) 3 B'S (INCLUDING ENGLISH LANGUAGE, CHEMISTRY AND FURTHER MATEHMATICS)

## ACTIVITIES

My personal activities include learning mathematics/physics, music, football and game development and producing software. I play football and I am an active swimmer. I develop projects in Python as well as Java and JavaScript. I use C++/C/Rust for low level and embedded systems. I try to find creative ways to combine my interest with computing and mathematical tools.

### Clubs and Societies / student roles

- Student Representative Council head (2013/2014).
- Clique sports football club (2012-2016)
- Boarding House computer Prefect (2016/2017)
- ICAEW Brand Ambassador

## PROJECTS

### Particle Life Simulator (Python, Pygame)

Simulated particle interactions using a color-coded system and a matrix-driven physics model. Designed a modular architecture separating physics, graphics, and particle behavior classes. Achieved emergent behavior using simple rules with  $O(n^2)$  complexity.

### 2D Arena Shooter – Brotato Style (Unity, C#)

Built a 2D wave-based arena shooter with procedural enemy spawning, object pooling, and Scriptable Object-driven weapons. Integrated UI for score/health, and optimized for desktop/web deployment.

### .NET Inventory Management System (C#, ASP.NET Core, SQL Server)

Created a full-stack CRUD inventory system with role-based authentication, RESTful APIs, and Dockerized local deployment. Implemented data validation and responsive UI using Razor pages and EF Core.

### Weather Aggregator API (C#, ASP.NET Core)

Developed an API that aggregates real-time weather data using external REST APIs with caching, fallback logic, and Swagger documentation. Emphasized modularity and testability through DI and clean architecture.

### Property Tycoon Game (Java)

Created a Monopoly-style game with a custom game engine and UI. Implemented entity-based architecture for cards, properties, and board logic. Restricted resolution compatibility and added error-handling feedback.

#### **Binary Classification – MLP Neural Network (Python)**

Implemented a multilayer perceptron for binary classification using backpropagation and MSE minimization. Preprocessed and standardized data, achieving 83.5% accuracy. Split data using 80/20 train-test ratio.

#### **Computer Vision – Face Alignment & Recognition (Python, OpenCV)**

Explored face alignment methods with grayscale normalization, HOG descriptors, and linear regression. Processed images with cv2 pipelines and evaluated feature extraction techniques for facial geometry alignment.

#### **Reinforcement Learning with Genetic Algorithms (Python, OpenAI Gym)**

Developed a REINFORCE-style learning system where agents evolve via genetic algorithms. Neural network weights encoded as genes; fitness function maximized cumulative reward. Saved and visualized top-performing agents.

#### **Physics Engine – Verlet Integration (C++)**

Simulated classical mechanics using deterministic Verlet integration. Implemented collision detection, gravity, and constraints with  $O(n^2)$  complexity. Structured functions to modularize physics updates.

#### **Toy Quantum Circuit Editor (Python, PyQt6, NumPy)**

Designed a GUI tool for drag-and-drop quantum gate simulation. Supported Bell states, superpositions, and OpenQASM 2.0 output. Applied Kronecker products to simulate multi-qubit systems and entanglement.

#### **Computer Security Web Platform – Lovejoy Antiques (PHP, JS, MySQL)**

Built a secure evaluation platform with email verification, RBAC, MFA, and brute-force prevention. Hardened the application against XSS, SQLi, and CSRF. Applied bcrypt hashing, Google reCAPTCHA, and secure file uploads.

## **LINKS**

GITHUB: [HTTPS://GITHUB.COM/RONALDOSSAI?TAB=OVERVIEW&FROM=2025-06-01&TO=2025-06-16](https://github.com/RONALDOSSAI?tab=overview&from=2025-06-01&to=2025-06-16)

PORTFOLIO: [HTTPS://RONALD-OSSAI-PORTFOLIO.VERCEL.APP](https://RONALD-OSSAI-PORTFOLIO.VERCEL.APP)

LINKEDIN: [HTTPS://WWW.LINKEDIN.COM/IN/RONALD-OSSAI-B66670206/](https://www.linkedin.com/in/RONALD-OSSAI-B66670206/)