Enosh Earnest

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Computer Science student and AI explorer, leveraging computational mathematics to build intelligent applications—from accessibility focused mobile apps to autonomous resource allocation systems. My work thrives where mathematical rigour meets human complexity, crafting systems that amplify rather than automate judgement.

TECHNICAL SKILLS

Languages: Python (PyCryptodome, asyncio, OOP, APIs, Automation), SQL.
Machine Learning & AI: Applied scikit-learn for predictive modeling (regression, classification, model evaluation); explored ethical AI development, prompt engineering, and generative AI tools.
Web & Cloud: Microsoft Azure, Django, HTML, Bootstrap, SSL/TLS, Flask, Node.js.
Databases: SQL Server, MongoDB Atlas, SQLite.
Tools: Git, Figma (wireframes, user-centered design), Jupyter Notebooks, DaVinci Resolve, MongoDB Compass.
Concepts: Object-Oriented Programming (OOP), Encryption (AES, Diffie-Hellman), Software Testing, Agile/Scrum, User-Centered Design, Accessibility Principles.

EDUCATION

University of Derby
Bachelor of Science (Honours) in Computer Science   **Expected: Sep 2026**

Relevant Campus Coursework: Functional Programming, Computational Mathematics, Network System Development, Software Engineering, Games Technologies, Data Driven Systems, Legal/ Ethical and Sustainability Issues.

Relevant Online Coursework Includes: The Complete Python Bootcamp (*Udemy*), Machine Learning with Python (*LinkedIn Learning*), AI Essentials (*Google*), Fundamentals of UI/UX Design (*Microsoft Learn*).

Organisations: Computing Society, Christian Union, Sports and Enhancement Center, Boxing Club.

PROJECTS

SEEC - A Public Transport App for the Visually Impaired | *React Native (Expo), Node.js, Express.js, Google Maps/Directions API, Expo AV*   **GitHub**

- Developed a voice-controlled mobile application tailored for **Journeo Plc** to assist visually impaired users in navigating bus journeys, integrating **Google Directions API** and real-time location tracking **via Expo Location** to achieve **95% accuracy** in route generation and **90% adherence** to turn-by-turn guidance.

- Integrated an advanced image-to-text feature, utilizing **Expo ImagePicker** for direct camera capture or gallery selection, which processes images via **Google Vision API** to extract text with **98% OCR accuracy**, enabling conversion of physical sign information into audible format for enhanced accessibility.

- Implemented an accessible voice feedback system **via Expo Speech** providing dynamic, step-by-step navigation alerts, which, through user acceptance testing with visually impaired participants, demonstrated a **30% improvement** in ease of following transit instructions and a **25% reduction** in reported navigational anxiety.

SnapBack - An Employee Fatigue Monitoring Platform | *Python, Flask, SQLite, Pygame*   **GitHub**

- Built a role-based web app with distinct dashboards (Employee, Manager, HR) and **15+ routes**, integrating fatigue scoring from **4 cognitive games and daily wellness surveys**, enabling real-time fatigue tracking for **25+ users across 3 teams.**

- Engineered and deployed 4 accessible games (reaction test, visual oddity finder etc.) using Pygame, with real-time score submission via Flask API, tracking **500+ session metrics (reaction time, accuracy, fatigue, decision making) across 10 simulated days.**

- Implemented team fatigue trend analytics with Chart.js, dynamic SQL joins, and threshold-based alerts (<40 fatigue score), generating real-time insights for managers with **<150 ms dashboard render time** and 100% session log retention.

Pandemic Resilience Management System | *Python, Flask, SQL Server, MongoDB Atlas, HTML/CSS*   **GitHub**
- Engineered a secure role-based web platform with 3 dashboards and 20+ endpoints using Flask and SQL Server, enabling authentication-based access via Flask-Login and supporting over **500+ dynamic data operations** across structured and unstructured sources.
- Developed a hybrid data architecture integrating SQL Server for compliance-critical data and MongoDB Atlas for semi-structured & instantaneous data, executing **complex joins and aggregations across 7 tables and collections** with <100 ms query response under load.
- Implemented secure password hashing (PBKDF2 via Werkzeug), vaccination validation logic, and automatic compliance alerts, achieving **100% password encryption compliance** and improving error handling and data consistency across all users by **~80%**.

Secure Smart Home Client-Server System | *Python, asyncio, SQLite, PyCryptodome*   **GitHub**
- Engineered a high-performance client-server system supporting secure communication with **AES-CBC encryption, Diffie-Hellman key exchange, and multi-client architecture**, handling 10+ concurrent clients and encrypting **500+ messages** with zero errors.
- Implemented advanced features like connection **timeout handling** (30s idle disconnection) and a **heartbeat mechanism**, ensuring **98% reliability** in maintaining active client-server communication during extensive testing.
- Implemented a **command processing pipeline** capable of handling **over 100 client requests per second**, with **99.9% accuracy** during stress tests conducted over a **48-hour period**.

EXPERIENCE

Designer (Intern) - <u>University of Derby Enterprise Centre</u>   **Mar 2024 - July 2024**
<u>Keywords</u>: Template Designing, Content creation, Database management, MS Dynamics
<u>Tools</u>: Davinci Resolve 19, Canva, MS Excel, Microsoft Dynamics 365
- Created an average of **13 new digital content templates** to be integrated into newsletters, chats, LinkedIn feeds, and in-person presentations, streamlining future content creation.
- Updated CRM records for up to **400 individuals**, optimising data organisation and enhancing the efficiency of internal processes for smoother client management.
- Updated and refined **up to 8 databases** to ensure **accuracy, consistency, and data normalisation**, improving user-friendliness, accessibility options, and encryption.

Marketing/ Communications (Intern) - <u>Not Another Agency</u>   **Jan 2023 - June 2023**
<u>Keywords</u>: Social Media management, Performance marketing, Ad analytics
<u>Tools</u>: Meta Business Suite, Google Analytics, Adobe Photoshop
- Managed up to **6 organisations** across various platforms **(Facebook, Instagram, Twitter, LinkedIn, YouTube, TikTok)**, an NGO focused on postpartum depression.
- Achieved a **30% increase** in follower count for a luxury villa through **strategic content creation and targeted campaigns.**
- Curated a **3x increase** in ad frequency for an NGO dedicated towards under-previledged youth, significantly boosting engagement and helping the organisation reach a wider, more relevant audience.