

# ISAAC ADJEI

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## PROFILE

Electronic Engineering and Computer Science student at Aston University (Predicted First Class) and Top 40 Finalist in the Black Heritage Undergraduate of the Year Award 2026 (TargetJobs & Sky). Builds across the full engineering stack - from PCB-level analogue circuit design and embedded firmware to production IoT platforms and secure full-stack web applications. Seeking internships, industrial placements and professional experiences in embedded systems, hardware-software integration, software engineering, cybersecurity, cloud, AI/ML and data.

## EDUCATION

### Aston University, Birmingham, United Kingdom

Oct 2024 – Jul 2028

BEng (Hons), Electronic Engineering and Computer Science · **Predicted: First Class**

Top 40 Finalist – Black Heritage Undergraduate of the Year Award 2026 (TargetJobs & Sky)

**Relevant Modules:** Internet Applications and Databases, Foundations of AI and Data Science, Introductory Programming for Digital Science (Python), Electronics 1, Electronics 2, Introductory Mathematics for Engineering, Power Skills

- Developing strong foundations in software engineering, electronics and applied mathematics while building practical project experience across embedded systems, AI/data and full-stack development

### Stanmore College, London, United Kingdom

Sep 2022 – Jul 2024

Pearson BTEC Level 3 National Extended Diploma in Engineering · **D\*DD (Distinction\*, Distinction, Distinction)**

Best and Most Hardworking Student Award

**Relevant Modules:** Engineering Product Design and Manufacture, Microcontroller Systems for Engineers, Engineering Principles, Specialist Engineering Project, CAD in Engineering, Electronic Devices and Circuits, Calculus to Solve Engineering Problems, Electronic Measurement and Testing of Circuits

- Completed intensive hands-on training in engineering design, testing and documentation, applying microcontroller, electronics and CAD skills through practical coursework and projects

## SKILLS (PROFESSIONAL AND TECHNICAL)

**Languages:** C, C++, Python, Java, TypeScript, JavaScript, PHP, SQL, MATLAB

**Embedded & Hardware:** Arduino, STM32, ESP32, Raspberry Pi, AVR, KiCad, Proteus, PCB Layout, Circuit Design, Oscilloscope, I2C / UART / SPI, FPGA, VHDL

**Web and Frameworks:** Next.js, React, Node.js, Tailwind CSS, PHP, MySQL, Apache

**AI/ML and Data:** TensorFlow, PyTorch, NumPy, Pandas, Scikit-Learn, OpenCV, Jupyter Notebooks

**Cloud & DevOps:** AWS, Azure, Docker, Kubernetes, Vercel, Cloudflare, GitHub Actions

**Professional:** Problem Solving, Critical Thinking, Communication, Team Collaboration, Leadership, Time Management, Adaptability, Attention to Detail

## PROJECTS

### PHAEMOS: Smart Maintenance Platform

2026, ongoing

FastAPI, Python, Next.js 14, PostgreSQL, Redis, scikit-learn, Docker, ESP32, Arduino, STM32

[GitHub](#) ↗ | [Website](#) ↗

- End-to-end **IoT predictive maintenance platform** (in active development): ESP32, Arduino and STM32 nodes POST sensor telemetry to a FastAPI backend with PostgreSQL and Redis, processed in **under 200ms per request**
- Unsupervised Isolation Forest anomaly detection scores every telemetry reading; above 0.7 triggers an alert and auto-generates a maintenance ticket, above 0.85 attaches a diagnostic recommendation
- **JWT auth with role-based access control** (Admin, Technician, Viewer) enforced at API and UI level with a full **immutable audit log**

### Two-Stage Audio Amplifier

2026

Analogue Design, PCB Design, KiCad, Proteus, Electronics

[Portfolio](#) ↗

- Delivered a **full engineering workflow: simulation, breadboard validation, PCB layout and bench testing**
- Validated performance with measured output of **2.980 Vpp against a 3 Vpp design target**

### 4x4x4 NeoPixel LED Cube

2025

Arduino, C++, WS2812B, Embedded Systems

[GitHub](#) ↗ | [Portfolio](#) ↗

- Built a 64-LED interactive display with a **non-blocking state machine architecture** using millis()
- Introduced four animation modes, ambient-light adaptive brightness and debounced user controls

### AstonCV – Full-Stack CV Database

2026

PHP, MySQL, CSS, Apache, Cloudflare

[GitHub](#) ↗ | [Website](#) ↗

- Engineered **12+ security controls** including **bcrypt hashing, CSRF tokens, PDO prepared statements and brute-force protection**
- **Deployed live** with searchable profiles, sorting/filtering and server-side PDF export

### CNC Milling Machine Control System

2024

Arduino, C++, Safety Systems, State Machines

[Portfolio](#) ↗

- Engineered a **safety-focused controller** using **finite state machine logic** and strict transition validation
- Integrated door interlocks, **emergency stop handling**, timed cooldown and LCD status feedback for safe operation

## git-unlocked – Open Source Git Course

Git, GitHub, GitLab, Markdown, Open Source

2026

[GitHub ↗](#) | [Portfolio ↗](#)

- Created a structured learning resource with **217+ topic files** covering fundamentals to advanced workflows across Git, GitHub, GitLab and 5 other platforms
- Maintained contributor workflow with issue templates, PR standards and CI checks

## EXPERIENCE

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### Student Representative

**Aston Students' Union, Birmingham, UK**

*Student advocacy, stakeholder communication, academic liaison*

*Sep 2025 – Present*

- Collect and communicate **student feedback** to academic staff through **SSLC, Senate and Council meetings**
- Delivered improvements to **learning delivery** and the wider **course experience**

### Engineering Operations & Maintenance Planning (Virtual Experience)

**British Airways via Forage, Remote**

*Maintenance planning, risk analysis, reporting*

*Oct 2025*

- Reviewed **A320 maintenance schedules**, diagnosed component faults and produced structured **WREQ engineering reports**
- Developed **material forecasts** and **maintenance planning reports** for six aircraft with risk-mitigation recommendations

### Smart Mobility & Digital Tech (Virtual Work Experience)

**Yunex Traffic via Springpod, Remote**

*Intelligent transport systems, sensor integration, data-driven urban mobility*

*Aug 2025*

- Examined **intelligent transport systems** and **digital solutions** to evaluate their impact on air quality and **urban mobility efficiency**
- Delivered **technical insight outputs** based on **real-time pollution sensing** and smart traffic workflows

### Consular Intern

**Ghana High Commission, London, UK**

*Consular operations, document processing, client support*

*Jul 2024 – Aug 2024*

- Operated **end-to-end consular processing workflows** using **official diplomatic management systems** - handling **application intake, biometric data capture, document authentication** and physical **visa and passport production** from print to issuance, supporting **100+ daily client interactions**

### Diplomatic Administrative & Estates Intern

**Ghana High Commission, London, UK**

*Facilities coordination, document handling, office operations*

*Mar 2024*

- Coordinated **diplomatic property operations** by accompanying officers on **site inspections** and **facility surveys**, managing **estates documentation, maintenance schedules** and **office workflows** to maintain **mission operational standards**

### Junior Apprentice HVAC Technician

**Massive Refrigeration Services, Accra, Ghana**

*Field servicing, diagnostics, installation support*

*Jul 2019 – Jul 2021*

- Serviced, installed and maintained **50+ air conditioning units** using standard **diagnostic tools and field servicing techniques**

## VOLUNTEERING

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### Student Judge – National Emerging Talent Awards 2026

*Feb 2026*

*targetjobs UK (Group GTI)*

- Evaluated employer submissions for **Best Placement or Internship Programme** using qualitative and scoring criteria; commended for a thorough, timely and high-quality approach

### Fundraising Volunteer – 10 Days of 5K Challenge

*Feb – Mar 2026*

*Cancer Research UK*

- Completed **10 x 5km runs (50km+)** for the Cancer Research UK 10 Days of 5K Challenge, managing a fundraising page that contributed to a campaign raising over **£797,424.64** (plus £159,224.14 Gift Aid)

## SPOKEN LANGUAGES

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**English** (Full professional), **Twi & Ga** (Full Native), **French & Spanish** (Elementary)