

# DACOSTA AGYEI

AI Engineer · Full-Stack Systems Engineer · Machine Learning Researcher

Accra, Ghana · Open to Remote Work — Global · UTC+0 · 6+ Years Experience

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## PROFESSIONAL SUMMARY

AI Engineer and Full-Stack Systems Engineer based in Accra, Ghana, with over 6 years of professional experience building and deploying intelligent, production-grade applications. Specialises in bridging machine learning and software engineering integrating Computer Vision and Natural Language Processing models into scalable web, mobile, and enterprise platforms. Holds an MSc in Computer Science (GPA 3.27) from the University of Ghana and a BSc in Information Technology (First Class Honours, CWA 71.04) from Ghana Communication Technology University.

Proven ability to lead engineering teams from concept through production delivery, collaborate effectively in remote-first distributed environments, and communicate clearly with both technical and non-technical stakeholders. Actively seeking full-time or contract remote opportunities worldwide, with flexibility across US, EU, and APAC time zones.

## RESEARCH INTERESTS

- ▶ Software Engineering · Artificial Intelligence & Machine Learning · Deep Learning
- ▶ Vision Transformers · Natural Language Processing · AI Applications in Agriculture & Healthcare

## TECHNICAL SKILLS

### Programming Languages

**Python:** Skilled in data analysis, machine learning, backend development, and automation scripting.

**JavaScript:** Proficient in developing interactive web and mobile applications using modern ES6+ standards.

**TypeScript:** Experienced in type-safe application development for large-scale React and Node.js projects.

**PHP:** Experienced in server-side scripting and backend development for web platforms.

**Dart:** Core language for Flutter mobile development across iOS and Android platforms.

### AI / Machine Learning

**PyTorch:** Primary deep learning framework for building, training, and deploying neural network models.

**TensorFlow / Keras:** Experience in model development and deployment pipelines for production ML systems.

*Available for full-time or contract remote roles · Flexible across US, EU & APAC time zones · Response within 24 hours*

**Hugging Face Transformers:** Building NLP pipelines, fine-tuning language models, and implementing RAG architectures.

**Computer Vision:** Real-time facial recognition, object detection, and image classification using OpenCV and PyTorch.

**scikit-learn:** Classical ML algorithms, model evaluation, hyperparameter tuning, and feature engineering.

**NLP:** Text processing, sentiment analysis, named entity recognition, and document summarisation.

### Frameworks & Libraries

**ReactJS:** Expert in building dynamic and responsive web applications with modern component architecture.

**Next.js:** Full-stack React framework for SSR, SEO-optimised web applications and API routes.

**React Native:** Proficient in developing cross-platform mobile applications with native performance.

**Flutter:** Experienced in creating high-quality native interfaces on iOS and Android from a single codebase.

**FastAPI:** High-performance Python API framework used for ML model serving and REST API development.

**Django:** Python web framework for building robust backend systems with ORM and admin interfaces.

**Node.js:** Server-side JavaScript for scalable backend services, REST APIs, and real-time applications.

### Web Development

**Frontend:** Deep understanding of HTML5, CSS3, TailwindCSS, and JavaScript for visually appealing and responsive web designs.

**Backend:** Strong experience in server-side logic, database handling, API development, and authentication systems.

**Web3:** Experience integrating blockchain technologies for secure transaction-enabled applications.

### Database Technologies

**PostgreSQL:** Skilled in designing, implementing, and managing relational databases for production systems.

**MySQL:** Experienced in relational database design and query optimisation.

**Firebase:** Experienced in real-time database management, authentication, and backend-as-a-service.

**Supabase:** Open-source Firebase alternative for modern full-stack applications.

### Development Tools & Environments

**Docker:** Proficient in containerisation technologies for developing, testing, and deploying applications.

**Git:** Experienced in version control and team collaboration with branching strategies and code reviews.

**GitHub Actions:** CI/CD pipelines for automated testing and deployment workflows.

**Linux:** Comfortable in Linux server environments for deployment and system administration.

**Vercel:** Deployment platform for Next.js and frontend applications with edge functions.

### Design Tools

**Figma:** Experienced in UI/UX design and prototyping for web and mobile applications.

**Photoshop:** Skilled in graphic design, photo editing, and visual asset creation.

### Professional & Collaboration Skills

**Leadership:** Demonstrated strong leadership, organisational, and communication skills through roles as SRC Vice President and President (GCTU), and NASPA President (Asunafo North).

**Remote Work:** Extensive experience in async-first, distributed remote team environments across multiple time zones.

**Agile / Scrum:** Experienced in sprint planning, code reviews, standups, and iterative product delivery.

## WORK EXPERIENCE

### Senior Full-Stack & AI Systems Engineer (Team Lead)

2025 – Present

*Public Sector Organisation · Confidential · Full-time · Accra, Ghana*

Leading the design and deployment of AI-powered analytics and automation systems for a large public sector organisation. Responsible for the full engineering lifecycle — from requirements gathering through to production deployment — while managing a cross-functional engineering team and interfacing with senior non-technical stakeholders.

#### Key responsibilities and achievements:

- ▶ Architected and deployed AI-driven analytics and automation systems handling live operational data across multiple departments, integrating real-time ML inference into existing enterprise workflows
- ▶ Integrated production machine learning models into enterprise platforms, reducing manual processing time by an estimated 40% and improving reporting accuracy
- ▶ Led a cross-functional engineering team covering technical strategy, code reviews, sprint planning, and individual mentorship
- ▶ Built scalable backend systems and secure internal platforms with well-documented APIs serving HR, operations, and asset management stakeholders
- ▶ Constructed end-to-end AI pipelines from data ingestion and model training through to API deployment and stakeholder-facing dashboards

### Software Engineer

February 2023 – Present

*ZK Block · Hybrid · Accra, Ghana*

As a Software Engineer at ZK Block, a pioneering blockchain technology company, specialising in developing robust and scalable applications leveraging blockchain technology. Role involves extensive use of React Native, ReactJS, and Web3 to deliver cutting-edge solutions that enhance user experiences and drive the company's technological advancements.

#### Key responsibilities and achievements:

- ▶ **Application Development:** Designing and implementing scalable blockchain applications using React Native, ensuring seamless performance across mobile platforms
- ▶ **Frontend Engineering:** Developing dynamic and responsive web interfaces with ReactJS, enhancing user engagement and experience
- ▶ **Blockchain Integration:** Integrating Web3 technologies to enable secure and efficient blockchain transactions, fostering innovation in blockchain applications
- ▶ **Collaboration and Leadership:** Working closely with cross-functional teams to define project requirements, timelines, and deliverables, contributing to the agile development process
- ▶ **Continuous Learning:** Keeping abreast of the latest blockchain technologies and frameworks to drive continuous improvement in application development

### Applications Developer

February 2022 – February 2023

*Escripts Solutions · Full-time · Accra, Ghana*

At Escripts Solutions, a leading tech firm in Ghana, played a pivotal role in the development of MedFind — a mobile application designed to connect users with pharmacies for purchasing medicines and prescriptions. Led the full development lifecycle using Flutter, encompassing design, development, testing, and deployment phases.

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### Key responsibilities and achievements:

- ▶ **Mobile Application Development:** Led end-to-end development of the MedFind app using Flutter, ensuring a seamless cross-platform user experience enabling efficient medicine purchases
- ▶ **UI/UX Design:** Collaborated closely with the design team to conceptualise and implement intuitive user interfaces, significantly enhancing user engagement and satisfaction
- ▶ **API Integration:** Integrated APIs for real-time inventory updates, secure payment processing, and user authentication, enhancing the application's functionality and user trust
- ▶ **Quality Assurance:** Implemented rigorous testing protocols to ensure application reliability, security, and performance, resulting in a robust and user-friendly product
- ▶ **Project Management:** Managed project timelines, coordinated with stakeholders, and led a multidisciplinary team to deliver within the set deadlines and budget

### Applications Developer / IT Manager

January 2019 – 2022

*Daakye Welfare Fund* · Remote · Koforidua, Ghana

As the IT Manager at Daakye Welfare Fund, a financial institution dedicated to empowering its members through loans, spearheaded the development of a comprehensive loan management system and the organisation's website. Utilised HTML, CSS, JavaScript, and PHP to deliver a robust platform that streamlined loan processing and enhanced member engagement.

### Key responsibilities and achievements:

- ▶ **System Development:** Led the design and implementation of a full loan management system, optimising loan processing, member tracking, and financial reporting
- ▶ **Website Development:** Developed and maintained the organisation's website, focusing on user experience and accessibility to facilitate easy information dissemination and member services
- ▶ **Team Leadership:** Managed a team of developers and designers, fostering a collaborative environment to drive project success and technological innovation
- ▶ **Strategic IT Planning:** Directed the organisation's IT strategy, aligning technology solutions with business goals to enhance operational efficiency and member satisfaction
- ▶ **Technical Solutions:** Implemented secure, scalable technology solutions that supported the organisation's growth and adapted to evolving member needs

## RESEARCH & PUBLICATIONS

### A Modified Hierarchical Vision Transformer Model for Poultry Disease Detection

**Status:** Submitted for Publication · *Role:* Researcher · *Technologies:* Python, PyTorch

Developed an advanced transformer-based deep learning architecture to diagnose poultry diseases, contributing to the field of AI applications in agriculture. The model introduces a modified hierarchical attention mechanism applied to poultry pathology images, enhancing both interpretability and diagnostic precision compared to baseline vision transformer architectures. This research demonstrates the practical application of state-of-the-art deep learning techniques in addressing real-world agricultural challenges in the Ghanaian context.

### AI / Machine Learning Projects

#### **Presence360 — Real-Time AI Attendance System**

Role: *Lead Developer* Technologies: *Python, PyTorch, OpenCV, FastAPI, PostgreSQL*

Computer vision pipeline for real-time facial recognition supporting over 500 registered identities with sub-second inference latency. Integrated the system via FastAPI into a production enterprise backend with full audit trail, identity management dashboard, and real-time alerting.

#### **AI Knowledge Assistant**

Role: *Lead Developer* Technologies: *Python, Hugging Face Transformers, FastAPI, NLP, RAG*

Retrieval-augmented NLP assistant integrated into internal enterprise platforms. Users can ask natural language questions over operational documents and receive instant, contextually accurate responses. Significantly reduced manual information lookup time across departments.

#### **Modified Hierarchical Vision Transformer (ViT)**

Role: *Researcher* Technologies: *Python, PyTorch*

Advanced AI model for poultry disease detection developed as part of published research. Enhances interpretability and diagnostic precision through modified hierarchical attention mechanisms.

#### **Document Summarisation & Response AI**

Role: *Lead Developer* Technologies: *Python, NLP, FastAPI*

Automated NLP pipeline for document summarisation and structured response generation, saving over 5 manual hours per week in internal reporting workflows.

### Full-Stack & Web Applications

#### **WedeyForYou — Marketplace Platform**

Role: *Full-Stack Engineer* Technologies: *Flutter, React Native, FastAPI, React, PostgreSQL*

Complete marketplace ecosystem built from scratch including Flutter & React Native mobile apps, FastAPI backend, React admin dashboard, and marketing website. Features role-based access, integrated payment processing, and real-time notifications.

#### **AMPSAC City Clean Website**

Role: *Full-Stack Developer* Technologies: *ReactJS*

Fully functioning commercial cleaning services website with service listings and client engagement features.

<https://ampsaccleaning.com/>

#### **PichaStock Platform**

Role: *Frontend Developer* Technologies: *ReactJS*

Front-end development for a professional photo licensing platform.

<https://pichastock.com>

#### **RESC Real Estate Website**

Role: *Full-Stack Developer* Technologies: *HTML, CSS, JavaScript, PHP*

Fully functioning real estate website with dynamic property listings and user interaction features.

<https://rescgh.com/>

#### **Shaq Express E-Commerce Platform**

Role: *Frontend Developer* Technologies: *ReactJS*

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Comprehensive e-commerce platform with product catalogue, cart, and checkout functionality.

<https://store.shaqexpress.com/>

### **Daakye Welfare Loan / Member Management System**

Role: Full-Stack Developer Technologies: PHP, HTML, CSS, JavaScript

Web-based application managing loans, savings, and contributions for Daakye Welfare Fund members.

<https://daakyewelfare.com/>

### **Welfare Management System — Ghana Water Company**

Role: Developer Technologies: PHP, HTML, CSS, JavaScript

Secure and efficient web-based welfare management system for Ghana Water Company Ltd — Dome and Kwabenya District.

### **School Management System**

Role: Developer Technologies: PHP, HTML, CSS, JavaScript

Comprehensive system for managing school administrative and academic operations including attendance, grades, and timetables.

### **NASPA Voting System**

Role: Developer Technologies: PHP, HTML, CSS, JavaScript

Web-based application facilitating smooth and transparent electoral processes for NASPA Goaso.

### **Point of Sales Management System**

Role: Developer Technologies: PHP, HTML, CSS, JavaScript

Robust POS system for efficient sales tracking, inventory management, and transaction reporting.

### **Nsawabode — Community Contribution Platform**

Role: Full-Stack Developer Technologies: React, Node.js, PostgreSQL

Payment-enabled community savings and contribution platform with integrated payment gateway and reporting.

## **Mobile Applications**

### **zkWallet — Blockchain Digital Wallet**

Role: Frontend Developer Technologies: React Native, Web3

Cross-platform blockchain wallet with anonymity features, secure transaction workflows, and auditing tools for digital asset management.

### **MedFind — Electronic Pharmacy App**

Role: Lead Developer Technologies: Flutter, Dart, FastAPI

Full mobile application for an electronic pharmacy platform enabling users to search, locate, and purchase medicines and prescriptions. Deployed to Google Play Store.

<https://play.google.com/store/apps/details?id=com.medfind.medfind>

### **Crime Reporter**

Role: Developer Technologies: Flutter, Node.js

Mobile application enabling citizens to report crimes directly to the appropriate authorities, enhancing community safety and police response times.

### **XRide — Ride-Sharing Application**

Role: Developer Technologies: Flutter

Contributed to the development of a ride-sharing application improving local transportation options and connecting drivers with passengers.

## PROFESSIONAL CERTIFICATIONS

### Deep Learning Specialization

DeepLearning.AI · 2020

[Verify credential →](#)

### Google Data Analytics

Google · 2024

[Verify credential →](#)

### Data Science Certificate

Blossom Academy · 2025

*Certificate available on request*

### Front-End Developer

ALX Software Engineering · 2024

[Verify credential →](#)

### Flutter Development using Dart

The App Brewery (Udemy) · 2021

[Verify credential →](#)

### Foundations: JS, HTML & CSS

Duke University · 2020

[Verify credential →](#)

### Introduction to HTML5

University of Michigan · 2021

[Verify credential →](#)

### Data Science

ALX Data Science · 2025

[Verify credential →](#)

## EDUCATION

### MSc Computer Science

*University of Ghana* · Accra, Ghana

**GPA: 3.27**

October 2023 – August 2024

### BSc Information Technology

*Ghana Communication Technology University* · Accra, Ghana

**First Class Honours · Cumulative Weighted Average (CWA): 71.04**

September 2017 – October 2021

### Senior High School Certificate — General Arts

*Ahafoman Senior High Technical School* · Goaso, Ghana

October 2012 – May 2015

### Junior High School Certificate

*A.M.E. ZION School* · Kumasi – Asafo, Ghana

October 2009 – April 2012

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### **SRC Vice President & President**

*Ghana Communication Technology University (GCTU)*

Served as both Vice President and President of the Student Representative Council at GCTU, demonstrating strong leadership, organisational, and communication skills. Led student advocacy initiatives, coordinated campus events, and represented the student body in institutional decision-making processes.

### **NASPA President — Asunafo North District**

*National Association of Students and Pupils of Asunafo (NASPA)*

Led NASPA in the Asunafo North District, overseeing community initiatives, youth development programmes, and transparent electoral processes. Represented student and youth interests at regional level and drove collaboration between educational institutions in the district.

## REFEREES

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*Two senior referees available upon request.*