

# BENJAMIN AGYEKUM

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## PROFESSIONAL SUMMARY

Frontend-focused software engineer with extensive experience in crafting engaging user interfaces using React and optimizing performance for large-scale applications. Successfully increased user engagement by over 60% through intuitive UI design and impactful frontend solutions, reaching over 5,000 users. Proven ability to lead projects that enhance user experience and drive business growth. Eager to leverage frontend expertise to build scalable and innovative solutions in a dynamic environment.

## TECHNICAL SKILLS

- **Programming Languages:** Python, JavaScript, TypeScript, C, C++, Go, HTML, CSS, Java
- **Web & Application Development:** React, Vue, TailwindCSS, Node.js, Express.js, HTML/CSS, RESTful APIs, GraphQL, Real-time websockets, Full-Stack Development, Bootstrap, UI/UX Principles, Webpack, Yarn, React Native
- **Database Systems:** SQL, NoSQL, MySQL, MongoDB, PostgreSQL, Prisma ORM, Database Management
- **Machine Learning & Computer Vision:** Machine Learning, Computer Vision, RAG, LLMS, PyTorch, OpenCV, Transformers
- **DevOps & Tools:** Docker, Git, VS Code, WSL2, Bash, CI pipelines, DevOps Tools, AWS Lambda

## EDUCATION

### Colorado State University

*Master's, Electrical Engineering*

**Aug 2023 - May 2025**

- **GPA:** 3.7

- **Coursework:** AI for Software Engineering, Embedded Systems and Machine learning, Computer Architecture

### Kwame Nkrumah University of Science and Technology

*Bachelor's, Physics*

**Aug 2017 - Nov 2021**

- **GPA:** 3.5

- **Coursework:** Intro to Python, Intro to C++, Intro to Java, Intro to Microprocessor, Intro to compiler

## CERTIFICATIONS

- Machine Learning & AI Engineer, Data Structure and Algorithm, Natural Language Processing and Artificial Intelligence

## PROFESSIONAL EXPERIENCE

### Studyfetch

*Full-Stack Software Engineer (AI & EdTech)*

**Aug 2025 - Present**

*California*

- Engineered and deployed full-stack web applications using React Native, Next.js, and TypeScript, delivering seamless, responsive user experiences for StudyFetch's AI-powered learning platform.
- Designed and optimized database architectures with MongoDB and PostgreSQL, improving data retrieval efficiency and enabling scalable storage of user study materials.
- Integrated OpenAI APIs to build intelligent tutoring features, including context-aware Q&A, interactive chat, and smart annotations, enhancing student engagement and comprehension.
- Collaborated cross-functionally with product and design teams to develop AI-driven PDF tutoring tools that support voice interaction, real-time explanations, and visual highlights, increasing product adoption and user satisfaction.
- Implemented end-to-end testing, CI/CD pipelines, and performance optimization to ensure reliability and scalability of production systems, reducing deployment time and improving platform stability.

### Colorado State University

*Graduate Teaching Assistant(Machine learning)*

**Aug 2024 - Dec 2024**

*Fort Collins, CO, USA*

- Boosted student engagement and comprehension in Machine Learning by leading hands-on lab sessions and projects, leveraging strong problem-solving and communication skills.
- Elevated proficiency in Python and CI/CD practices by incorporating them into lab exercises and collaborative projects.

### Colorado Science and Engineering Policy Fellowship

*Research Intern*

**Jun 2024 - Aug 2024**

*Downtown, Denver, CO, USA*

- Revamped the organization's website to a full-stack Next.js/Node.js architecture, enhancing responsiveness and SEO, leading to a 30% boost in user engagement and a 80% rise in search rankings.
- Developed a secure user registration system for onboarding new Fellows using Next.js and Node.js, integrating MongoDB for efficient data storage and RESTful APIs for seamless authentication, improving platform accessibility, and allowing many new users to register

### luupli.com

*Senior Mobile Developer*

**Apr 2021 - Mar 2024**

*Remote*

- Led the creation of a React Native mobile app with Material UI, boosting community engagement by 45% for Luupli's social media e-commerce platform serving underserved creators.
- Engineered advanced UI features including video playback, real-time notifications, and interactive feeds using React Navigation, Redux Toolkit, and TypeScript, boosting user retention by over 60% and enhancing authentic user interactions.
- Integrated secure e-commerce functionalities with RESTful APIs to enable influencer monetization, product discovery, and in-app purchasing, driving a 40% increase in transactional activity during the beta phase, aligning with Luupli's mission to empower creators.

- Mentored junior mobile developers and led code reviews, fostering high code quality and team growth, while coordinating cross-functional Agile teams with designers and product managers to deliver features ahead of schedule in five consecutive sprints, improving project efficiency by 30%.

### **Teamalfy.com**

#### *Full-Stack Developer*

**Apr 2017 - Nov 2020**

*Remote*

- Built and deployed production-grade platforms across industries including logistics (Juba Group), finance (Libra, Tuaneka), social media marketing (Rankit), and coworking spaces (Zulu Desk) using Next.js, Node.js, and Django, impacting over 5,000 users.
- Led end-to-end architecture and deployment of platforms like Bookelu and TypingTest by implementing SEO best practices, including structured, accessible UIs and performance optimizations that achieved 90+ Lighthouse scores and sub-second Time to Interactive via Next.js SSR.
- Designed secure RESTful APIs and real-time services for financial and e-commerce platforms, enabling secure payment transactions, invoicing, and user authentication with JWT and OAuth 2.0, processing over 400 transactions monthly with zero security breaches.
- Achieved 99.9% service uptime and reduced deployment times by 60% through Agile collaboration, managing Git workflows, conducting code reviews, and automating deployment pipelines with Docker, GitHub Actions, while prioritizing user-centered design.

### **Microverse**

#### *Software Developer Intern*

**Jan 2022 - Jun 2022**

*San Francisco*

- Collaborated in a global remote team to design and build an ongoing analytics dashboard for Microverse learners, delivering real-time insights on student progress, assignments, and performance metrics using React.js, D3.js.
- Integrated Node.js with Azure cloud services to build scalable backend APIs, enabling seamless data exchange and improving application performance by 25% through optimized server-side processing for a remote development environment.

### **AmaliTech gGmbH**

#### *Software Engineer Intern*

**Mar 2021 - Sep 2021**

*Remote*

- Developed a scalable back-end for a Community Learning Platform using Python and Django, implementing secure RESTful APIs and integrating PostgreSQL to manage user data and course materials, reducing API response times by 15% and supporting 300+ users.
- Built responsive front-end interfaces with React.js, leveraging Redux for state management to create dynamic course dashboards, improving user engagement by 30% and achieving cross-device compatibility.

## **PROJECTS & OUTSIDE EXPERIENCE**

### **AI-Powered PDF Tutor | [Project Link](#)**

**Aug 2025 - Sep 2025**

- Designed and implemented a full-stack AI tutor platform using Next.js (React / SSR) + FastAPI backend, integrating OpenAI APIs, real-time PDF annotation, and voice interaction to deliver context-aware tutoring.
- Built and orchestrated the AI workflow pipeline (RAG, embedding store, prompt generation) with LangChain / LlamaIndex / vector DB, ensuring sub-second response latency and high reliability for interactive chat and visual explanations.
- Engineered scalable RESTful APIs, microservices, and WebSocket endpoints, enabling live document highlights, speaker feedback, and smooth frontend-backend synchronization under high concurrency.
- Optimized model inference performance (quantization, caching, batching) and GPU utilization to reduce API costs by > 40%, while delivering real-time responsiveness to users.

### **DevSecOps Engineer | [Project link](#)**

**Jan 2025 - Present**

#### *TerraGuard - AI-Powered CIS-Compliant Terraform Generator*

*Fort Collins, CO, USA*

- Engineered a secure LLM-driven Terraform code assistant using Retrieval-Augmented Generation (RAG) with Langchain and LlamaIndex to generate infrastructure-as-code aligned with CIS AWS Benchmarks.
- Built a scalable vector-based knowledge base indexing AWS Terraform schemas and structured CIS security rules, enhancing AI context-awareness and reducing misconfiguration risks.

### **AI Mobile App Developer | React Native Engineer | [Project link](#)**

**Jan 2025 - Present**

#### *IntervuAI - AI-Powered Interview Prep App*

*Fort Collins, CO, USA*

- Built an AI-driven mobile interview preparation app using React Native (Expo), Firebase, and Vapi, enabling users to simulate real-time mock interviews with voice-based AI interactions.
- Integrated Google Gemini to deliver dynamic performance feedback and interview analysis, helping users improve responses with contextual recommendations.
- Developed a secure and scalable backend leveraging cloud technologies, including Firebase Authentication and Firestore, to support user data and interview history, while incorporating REST APIs and test automation for improved functionality.

### **Resume AI – Intelligent Resume Tailoring System | [Project link](#)**

**May 2025 - Present**

- Architected and implemented an end-to-end AI-powered resume optimization platform using FastAPI, React TypeScript, PostgreSQL, enabling real-time NLP-driven content enhancement and achieving 95% resume parsing accuracy and 90% ATS compatibility rate.
- Engineered an AI/ML pipeline integrating OpenAI GPT, NLP, RAG systems, and custom ML algorithms to perform job description parsing, skills gap analysis, and context-aware resume generation, reducing manual tailoring time by 80% for users.
- Optimized backend performance by developing asynchronous APIs in Python (FastAPI) with PostgreSQL + SQLAlchemy, achieving less than 3s API response times and improving scalability for enterprise-grade deployments.
- Designed and deployed a modern frontend with React 18, TypeScript, TailwindCSS, and shadcn/ui, implementing real-time job intelligence and resume enhancement dashboards that improved user engagement by 40%.