KELVIN MANU OWUSU

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EDUCATION

Colby College – Waterville , ME USA   **Major:** Computer Science & Mathematics   Graduating May 2026
Relevant Coursework : Data Structures & Algorithms, Web Programming, Computer Organization, Data Visualization & Analysis, Software Engineering, Operating Systems, Distributed Systems, Database Systems.

SKILLS AND INTERESTS

- **Languages:** Python, Java, JavaScript/TypeScript, C, C++, C#, SQL
- **Frameworks/Tools:** React, Node.js, Django, GraphQL, TensorFlow.js, JUnit
- **Cloud & Systems:** AWS (Neptune, Neptune Analytics, Fargate, Lambda, EventBridge, S3, Coral Service), Git, Docker

EXPERIENCE

Amazon - Software Development Engineer Intern   May, 2025 - Aug, 2025
- Designed and implemented an **ASIN Relationship Graph Service using Amazon Neptune** to centralize and store sophisticated product relationships (beyond parent–child), enabling condition-based recommendations.
- Deployed a serverless event-driven pipeline (**EventBridge, Fargate**) to process **100K+ ASIN updates** from Cosmos Knowledge Base via **S3**, with similarity scores from **SageMaker ML batch jobs** written into Neptune for graph updates.
- Leveraged **Neptune Analytics' Label Propagation Algorithm** with openCypher queries to efficiently cluster related products, enabling effective product grouping and improving search relevance for health-related **queries by 10%.**
- **Developed RESTful APIs using Coral Service** to expose graph operations for both downstream services and an operations visualization tool, enabling teams to query clusters and view product relationships in real time.

Microsoft - Mentorship Program (SWE + PM)   July - Aug, 2024
- Led a team of 4 to build MealPilot, **an AI-powered meal recommendation platform** that generated personalized dietary suggestions based on health needs, allergies, and user preferences using Power Apps, Co-Pilot, and Power Automate**.**
- Implemented multi-user family meal planning and leaderboards with Django and Redis to support large groups.
- Enhanced user experience with meal suggestions, **smart shopping integration, and a community-driven** recipe sharing feature built with React and Node.js.

StyleSyncs - Co-Founder & Tech Lead   stylesyncs.com   Feb 2024 - Present
- Led the design and implementation of **StyleSyncs' digital wardrobe,** an AI-driven outfit visualization system that shows how users' existing wardrobe items combine with clothing they want to shop online.
- Co-developed an **outfit visualization engine that rendered photorealistic try-ons** using custom avatars based on body type, skin tone, and user-uploaded images, with advanced features to ensure inclusivity.
- Built a marketplace feature by developing REST and GraphQL APIs with Django, integrating **10+ fashion retailers** so brands can advertise clothing and users can preview new items alongside their existing wardrobes.
- Launched beta testing **with 200 users**, refining model selection, outfit visualization, and wardrobe management features.

Tech Innovation Hub - Lead Mentor & Co-Founder   Sept, 2023 - Present
- Collaborated with student developers and mentors to design hands-on programming challenges for **45+** students.
- Designed and deployed a responsive website hosting lessons and articles, currently serving ~**100 students.**
- Led fundraising efforts**,** raising **$10,000** to secure **10 laptops** and computers for **underrepresented students** in Ghana**,** increasing technology access and providing critical educational resources.

PROJECTS

HackMIT - *Student Stress Solver(S3) App*   September, 2024
- Collaborated in a team of 4 to develop a student stress management platform using React, TensorFlow.js, and Firebase, implementing predictive analytics for personalized wellness recommendations.
- Designed a stress intervention feature that delivered personalized coping strategies and break reminders based on user schedules and assessment results, and collected feedback from **35+ users with SurveyJS to guide iteration.**

StreamFlex | React, TypeScript
- Built a video streaming service with a responsive interface powered by Material-UI for seamless cross-device interaction.
- Engineered an ML recommendation engine to optimize content discovery based on user behavior and viewing patterns.
- Implemented advanced search features using GraphQL for efficient data querying and Elasticsearch for rapid search.

LEADERSHIP AND PERSONAL DEVELOPMENT

Computational Science – *Teaching Assistant*   August 2023 - Present
- Assisted **50+** students in mastering programming concepts in Python**,** resolving coding issues, and completing projects.
- Developed supplementary learning materials and coding exercises to reinforce concepts and improve understanding.

Programs & Fellowships: Google SWE x Basta, Jane Street Focus Fellow, JP Morgan Code for Good, ColorStack, NSBE.