LUKE CHARLESWORTH

246 East 51st St., Apt 24, NY, NY 10022 | 585-953-8053 | Lukecharops@gmail.com |

EDUCATION
University of Pittsburgh
Bachelor of Science in Computer Science, History minor, GPA: 3.7   **December 2023**
Relevant Courses: Machine Learning, Cryptography and Computer Security, Data Structures & Algorithms, Web Applications, Game Development, Practical Applications of AI, Operating Systems, Computer Assembly, Formal Computational Methods

SPECIALIZED SKILLS
Programming Languages: JavaScript, TypeScript, Python, Rust, Java
Frontend Frameworks and Libraries: React, React Native, Next.js, Expo, Video.js, Prebid.js, Tailwind CSS
Backend Frameworks: Node.js, FastAPI, tsoa, Flask, Spring Boot
Databases and ORMs: PostgreSQL, GraphQL, Prisma, Drizzle
DevOps: Linux, nginx, Cloudflare, SBC's (Radxa), Squidproxy, Vercel, Tailscale, Sendgrid, Resend, Hetzner, Wasabi (S3)
Development Methodologies: API Design, UX Prototyping, Performance Optimization, Game Development, Embedded Systems
Human Languages: English, French, West-African Krio (conversational), Spanish (beginner)

PROFESSIONAL EXPERIENCE
Founding Engineer — *Videonest,* Manhattan, NY   **May 2024 — Present**
- Designed video asset management platform from concept to production. Scaled userbase from 0 to 430+ creators and 6 enterprise media companies; currently 162,000 video assets under management and $12K MRR.
- Developed realtime YouTube ingestion pipeline, complete with a distributed proxy network, cookie rotation, Cloud Task Queues for scalable download compute, and SMTP integration for automated user notifications.
- Drove partnership acquisitions with Video Elephant, MiddleBlock, and Microsoft Start by engineering RESTful API and MRSS feed integrations into these platforms, culminating in the launch of the Videonest Distribution Network.
- Architected AI-powered video metadata enrichment pipeline leveraging Vertex AI and Gemini models.
- Shipped custom Video Player NPM package, integrating Video.js with Prebid.js for publisher monetization. The SDK averages ~27 weekly downloads and has been implemented on high-traffic domains (e.g., Scrolller.com and Bitcoin.live).

Researcher and Technical Lead —*Sierra Leone Remote Learning Initiative*   **March 2022 — Present**
- Designed a cost-efficient remote learning technology tool by pioneering a method for turning any donated laptop into a Linux Mint-based server that locally serves open-source educational content from Kolibri and Khan Academy.
- Assembled an interdisciplinary team of three professors (Information Science, Computer Science, Africana Studies) and won the 2023-2024 Pitt Momentum Priming Grant to deploy this technology in Leonean primary schools.
- Led two 6 week deployment missions to primary schools in the Kabala, Senekedugu, and Fadugu villages, implementing this tool and corresponding lightweight solar system. Collaborated with school administrators, designed and delivered teaching training programs.
- Engineered a Natural Language Processor that localizes cultural references in the provided academic materials, automatically converting US-centric examples (such as math problems referencing pizza and baseball) into Sierra-Leone-relevant contexts, improving student comprehension and engagement.
- This sustainable technology currently serves 300 Class 6 students across the Koinadugu district, through an ongoing partnership with the local NGO World Possible Sierra Leone and the University of Pittsburgh.

Digital Solutions Analyst Intern — *Westinghouse Electric Company,* Pittsburgh, PA   **June 2023 — Sept 2023**
- Collaborated with an intern cohort to implement a localized radiation monitoring schema for the Waltz Mill Nuclear Repair Plant.
- Performed continuous unit testing on robotic cavity cleaning product suite; simulated foreign object retrieval from PWR (Pressurized Water Reactor) cores.
- Designed modular control console and relevant product specifications for Wide Brush Crawler and Multi-Surface Cleaner.

Website Developer — *University of Pittsburgh Medical Center,* Pittsburgh, PA   **Jan 2023 —June 2023**
- Optimized two UPMC educational websites focused on adolescent mental health, ensuring compliance with HIPAA, WCAG 2.1 accessibility standards, and COPPA privacy regulations.
- Built internal research tool for data extraction powered by SQL queries, process website metrics, and user interaction data.
- Supported cloud migration initiative to transition both websites from a WordPress infrastructure to the Microsoft Azure platform; improved scalability and response times.

AWARDS AND ACTIVITIES
School of Computing and Information Science Summer Scholar Award (2022, 2023), International Studies Fund Grant Recipient (2023), Africana Studies Study Abroad Scholarship Recipient (2023), Mascorow Center for Sustainable Innovation Student Sustainability and Prototyping Grant Recipient (2023), Pitt Momentum Priming Grant Recipient (2023), Pitts Men's Club Soccer (2022, 2023)