Ashish Kumar Jha *Software Engineer*

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Education

Carnegie Mellon University, Silicon Valley, CA
M.S. In Computer Software Engineering (Applied Study)
Teaching Assistant for Foundations of Software Engineering and Functional Programming, **Research Assistant**

Professional Experience

Software Engineer, *Algorizin* Sep 2023 – Present | New York (Remote)

- Developed an **Enterprise-Grade Retrieval-Augmented Generation (RAG) System**, leveraging **Azure OpenAI** and **LangChain**, integrating a **web interface** using **Next.js and Tailwind CSS** for seamless search and query visualization. Designed backend services with **Flask** and **PostgreSQL**, enabling scalable data retrieval for over **400,000 records**.
- Engineered an **AI-powered Form I-983 Auto Filler**, utilizing RAG principles by combining **SEVIS documents, user-uploaded resumes, and profile data** to generate accurate, auto-filled responses for compliance paperwork. Built a **full-stack dashboard** using **Next.js, Flask, and PostgreSQL**, allowing users to manage and review generated responses. Integrated **LLMs** for generating context-aware long-form answers, reducing manual input by **80%**.
- Built the **Intelligent Standup Bot**, automating Slack standup updates using **NLP, GitHub API, and Linear integration** to aggregate project updates from multiple sources. Developed a **Slack-based interface** alongside a **web-based dashboard in Next.js and Node.js**, enabling intuitive reporting and blocker identification. Reduced manual reporting by **60%**.

Co-Founder and CTO, *TAPP (Tap and Pay Payment Solutions)* Jan 2020 – Aug 2022 | Dubai, U.A.E

- Led the development of a cross-platform fintech solution, transforming smartphones into **POS devices via NFC**, **reducing transaction fees** by **2%** and secured **$100K+ in funding** after presenting the MVP at **Dubai Expo 2020**.
- Built a responsive fintech platform using **React Native (mobile)** and **Next.js (web)** with **Tailwind CSS** and **TypeScript**, enhancing user experience and transaction tracking. Achieved **95%+ sprint acceptance rates** and **reduced UI/UX bugs by 20%** through **reusable React components.**
- Designed and implemented **secure payment processing protocols**, ensuring PCI DSS compliance and fraud prevention measures for seamless transactions, deployed and scaled services on **AWS**, integrating **Docker**.

Skills

Programming and Development: — JavaScript, TypeScript, Python, Java, SQL, HTML/CSS, Tailwind CSS

Libraries/Frameworks — Node.js, Next.js, React, Express, Flask, Django, NumPy, Pandas, SciKit-Learn, Socket.io

Cloud & DevOps — AWS, Azure DevOps, GCP, Docker, Kubernetes, Linear, Jira, Agile, Web Analytics, A/B Testing

Databases & Storage — PostgreSQL, MySQL, MongoDB, Firebase, SQLite, Cosmos DB, Redis

Projects

Real-Time ASL Translation Web App, *Carnegie Mellon University* May 2023 – Aug 2023

- Built a **Django backend** to process ASL gestures from real-time video input.
- Developed an intuitive **HTML/CSS frontend** for seamless user interaction.
- Integrated **ML models** to dynamically translate ASL gestures to text.

Capybara DB, *Carnegie Mellon University* Jan 2024 – May 2024

- Designed a **custom DBMS** supporting both **SQL and NoSQL** operations in **C++**.
- Optimized **SQLite-based** data storage and retrieval for performance scalability.
- Implemented **indexing and query optimizations** to improve efficiency.

Publications

Intelligent Phishing Website Detection Using Machine Learning, *Springers*

- Developed a tool for detecting phishing websites, achieving **98% accuracy** (Logistic Regression, MultinomialNB, RF).
- Enhanced cybersecurity by mitigating social engineering attacks with real-time classification models.

A Study of Carbon Offsetting and Trading Framework using Blockchain and Internet of Things, *Patent*

- Designed a blockchain framework for Carbon Emission Trading, integrating **IoT** to enhance transparency.
- Implemented smart contracts and IPFS for decentralized, secure data storage.