

Ashwin Tiwari

Software Engineer

San Francisco, CA, United States | [LinkedIn](#) | [GitHub](#)

Backend-focused software engineer working mostly in Python, Node.js, and SQL, with hands-on work on query optimization, Redis caching, and CI/CD pipelines. Currently pursuing an MSc at Duke Fuqua while working on a capstone with Rail Inc.

EXPERIENCE

Solutions Engineer

Aug 2026 — Present

Changing The Present

San Francisco Bay Area

Building the backend for a data migration from Excel spreadsheets to PostgreSQL and HubSpot. Python parses, validates, and loads records into a structured schema, and the HubSpot API integration syncs them into the CRM, including field mapping and handling of duplicate or malformed entries. Deploys the services on AWS in Docker containers with GitHub Actions for automated deployments.

Backend Software Engineer (Capstone)

Mar 2026 — May 2026

Railinc Corp.

Durham, NC

Built RESTful microservices with Python (FastAPI) and Docker to process logistics data streams, aiming for high availability in core operational systems. Optimized PostgreSQL queries and added Redis caching, cutting average API response times from 800ms to under 120ms at peak traffic. Set up GitHub Actions CI/CD pipelines that doubled deployment frequency and reduced production regressions.

Graduate Teaching Assistant

Oct 2025 — Jan 2026

Duke University - The Fuqua School of Business

Durham, NC

Supported Quantitative Methods coursework by helping students with problem sets, concepts, and analytical modeling.

Software Engineering Lead

Jul 2025 — Feb 2026

Duke Advanced Degree Consulting Club

Durham, NC

Led a team of 3 developers in an Agile setting to build a full-stack internal resource management platform, shipping 2 major releases on schedule. Designed the Node.js and Express backend with standardized API contracts and JWT role-based authentication, supporting 200+ concurrent internal users.

Software Engineer Intern

Jan 2025 — Jun 2025

Deloitte Touche Tohmatsu India, ET&P

India

Built Python backend automation services with error handling, logging, and PyTest unit tests, reaching 75-80% code coverage. Wrote asynchronous data ingestion pipelines that processed 50,000+ daily transaction records, replacing slow legacy batch scripts and cutting core processing overhead by 25%.

Product Manager

Jun 2024 — May 2025

Ecell, VIT

Managed projects and coordinated the team's initiatives for VIT's Entrepreneurship Cell.

Backend Developer Intern

Aug 2023 — Dec 2023

ITC Infotech

India

Split legacy monolithic inventory logic into decoupled Python microservices, cutting algorithmic execution time by 45% and lowering memory use. Tuned core SQL queries and indexing on the supply chain database, reducing average query latency by 35% and speeding up real-time dashboard rendering.

Teaching Assistant

May 2022 — Apr 2025

Vellore Institute of Technology

Vellore

Assisted with Data Structures and Algorithms courses over 3 years, running problem-solving sessions and helping students debug and build solutions.

EDUCATION

Duke University - The Fuqua School of Business

Jul 2025 — May 2026

Master of Science in Quantitative Management

GPA 3.3. Merit Scholarship recipient. Graduate Teaching Assistant (Quantitative Methods).

Vellore Institute of Technology

Jul 2021 — May 2025

Bachelor of Technology in Computer Science and Engineering

GPA 3.7. Dean's List (Top 10% of Cohort). Head of student council.

PROJECTS

Async background job processing with a custom token-bucket rate limiter, Distributed Task Queue & Rate Limiter

Built a distributed, asynchronous task processing system with Python, Redis, and Celery. Wrote a custom token-bucket rate limiter API that protects downstream third-party services from overload, dropping excess inbound requests with a 0.01% error rate.

CERTIFICATIONS

Amazon Web Services Solutions Architect - Associate, Amazon Web Services (AWS)

Amazon Web Services Cloud Practitioner, Amazon Web Services (AWS)

Synergizing CNNs: An Ensemble Framework for Enhanced Image Classification,

Sentiment-Based Rating Model using VADER and TextBlob,

SKILLS

Data Warehousing · Software Development · Project Management · Software System Analysis · Human Capital Management · Software Analysis · Statistical Data Analysis · Performance Analysis · Oracle Database · JavaScript · Real-time Monitoring · AWS CloudFormation · Predictive Modeling · React.js · Google BigQuery · Amazon Web Services (AWS) · Dashboards · Convolutional Neural Networks (CNN) · OpenCV · GitHub · Sentiment Analysis · Analytics · Python · JavaScript (Node.js) · TypeScript · SQL · Java · FastAPI · Express.js · Docker · Kubernetes · CI/CD (GitHub Actions) · PyTest · Microservices · System Design · PostgreSQL · MongoDB · Redis · GCP · AWS Certified Developer - Associate · Certified Kubernetes Application Developer (CKAD)