Azim Usmanov

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Education

Northwestern University — Evanston, IL

B.S. Computer Engineering, Minor in Machine Learning and Data Science — *Expected 2027*

- **GPA**: 3.77/4.00
- **Relevant Coursework**: Data Structures & Algorithms, Operating Systems, Machine Learning, Microcontrollers, Parallel Computation, Probabilistic Systems, Multivariable Calculus, Linear Algebra, Differential Equations

Technical Skills

Languages: Python, C, C++, SQL, JavaScript, Java, MATLAB, VBA, HTML, CSS, Racket
Frameworks & Libraries: Node.js, FastAPI, React, OpenCV, MediaPipe, OpenMPI, PyTest, NumPy, Pandas
Cloud & Devops: AWS (S3, RDS, Lambda, API Gateway), Docker, GitHub Actions, Git, MySQL, PostgreSQL

Work Experience

BriteCo — Evanston, IL

Software Engineer Intern — *January 2026 – March 2026*

- Migrated 10+ internal services from legacy APIs to a scalable backend architecture, improving maintainability
- Analyzed dependencies across 100+ repositories to identify API usage and support backend migration planning
- Modified repositories to support GitHub Actions with runtime secret injection into Docker images for CI workflows

ComEd — Joliet, IL

Software Engineer Intern — *June 2025 – August 2025*

- Automated Excel–Access data transfer pipeline by implementing a VBA script, reducing processing time by 45%
- Migrated 500+ pages of switch number records into a standardized Excel sheet, cutting lookup time by 53%
- Updated customer counts in SCADA for 20+ substations and their accompanying feeder lines using OMS data

The Garage at Northwestern University | Sensify Recycling — Evanston, IL

Software Engineer Intern — *November 2024 – June 2025*

- Collaborated in a team of 4 to build a Raspberry Pi data capture pipeline in Python, capturing images and uploading them to local storage and Amazon S3; implemented Python client that interfaced with the backend API
- Engineered a Python pipeline that detects objects, displays bounding boxes, captures images of items in focus
- Developed a testing script to compare classification accuracy and response time of various LLMs via API calls

Project Experience

SteadyStep — IEEE "Best Impact" Award | *C, ESP32, Python, JavaScript, FastAPI, WebSockets*

- Collaborated in a team of 5 to ship a wearable gait analysis system that classifies walking patterns (via bluetooth-streamed IMU data) and flags neuromotor irregularities in real time using a trained LightGBM model
- Enabled sub-500ms gait analysis via a WebSocket bridge between a Python FastAPI backend and a React frontend
- Deployed a full-stack gait analysis platform on Vercel and Railway, configuring secure WebSocket routing

PhotoApp Cloud Backend | *Node.js, Express, AWS S3, AWS RDS, MySQL, Python*

- Designed and deployed a RESTful API Node.js backend with 8 endpoints supporting image upload, retrieval, deletion, and search, handling full request/response lifecycle with proper HTTP status codes and error handling
- Persisted structured metadata and AWS Rekognition AI-generated labels in an AWS RDS MySQL database, using transactions (BEGIN/COMMIT/ROLLBACK) for data consistency and async queries with retry logic via p-retry
- Reduced upload latency by eliminating sequential blocking calls via Promise.all() and async/await patterns

MizaAI: AI Focus Tracker | *Python, OpenCV, Google Gemini API, Chrome Extension*

- Built a web-based study focus tracker combining OpenCV eye-tracking and Chrome extension browser monitoring
- Developed user-personalized dashboards by utilizing the Gemini API to turn voice prompts into UI configurations
- Classified visited websites as productive or unproductive, displayed user session summaries with visual feedback

YogaPal: Real-Time Yoga Pose Classification System | *Python, MediaPipe, OpenCV, Flask*

- Built a real-time yoga pose classification and correction system using MediaPipe Pose and a Random Forest model
- Designed a Flask UI backed by FastAPI to track reps, stream JSON feedback, and generate session summaries