Andrew Presman

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Education

SUNY University at Buffalo May 2025

Bachelor of Science in Computer Science, Minor in Mathematics *GPA: 3.96/4.0*

- Relevant Coursework: Data Structures, Algorithms, Object-Oriented Programming, Computer Architecture, Distributed Systems, Database Systems, Machine Learning, Linear Algebra, Probability & Statistics

Experience

Vaive Logistics Sept 2024 – Dec 2024

Software Engineer Intern *Barcelona, Spain*

- Tripled processing speed for robot sensor-data analysis by building a SQLAlchemy batch pipeline processing **10,000+** readings per run.
- Reduced robot debugging times by **60%** by building a Python-based navigation error detection system with Matplotlib visualization.
- Improved robot operational efficiency by redesigning **three** UI features based on **nine** human-robot interactions research papers.

Walmart Global Tech June 2024 – Aug 2024

Software Engineer Intern *Bentonville, AR*

- Enhanced outage-incident response across **5,000+** stores by building real-time power-outage dashboards with Looker and BigQuery.
- Exposed **$10,000+** in daily revenue risk by implementing SQL-driven alerts, reducing investigation time from **hours** to **minutes**.
- Saved **4+ hours** per week of manual work by implementing automated SQL health checks for critical data pipeline jobs.

University at Buffalo Sept 2022 – May 2024

Lead Developer *Buffalo, NY*

- Led a **4-person** team to rebuild a lab website using React/Node.js/MongoDB, serving **15+** faculty with a content management system.
- Optimized site performance from **1.2s** to **700ms** load time by integrating MongoDB and implementing component-based architecture.
- Cut content update time from **2 hours** to **30 minutes** by creating a custom component library and admin interface.

Research

Embedded Sensing and Computing (ESC) Aug 2023 – Jan 2025

Machine Learning Research Assistant *Buffalo, NY*

- Developed speech analysis models for pediatric disease detection using Python and TensorFlow on **18,000+** audio samples.
- Achieved **68%** stutter-detection accuracy by designing a custom neural network architecture and extracting features from audio data.
- Reduced audio file processing and feature extraction time by **50%** by implementing caching and parallel MFCC computation.

Projects

SafeTrack RIT Hackathon ’25

- Achieved **81%** crash detection precision by training computer vision model on **100+** labeled traffic camera video clips.
- Integrated a LangChain NLP chatbot supporting **20+** query types for instant access to crash data and camera system analytics.
- Developed a backend streaming system with FastAPI and WebSockets delivering real-time alerts with **<250ms** latency.

HarmoniQ

- Created a Spotify-integrated app with mood-based album analysis and playlist generation using Next.js and Supabase.
- Integrated Spotify Web API and AI sentiment analysis to generate mood profiles and personalized music suggestion.
- Implemented Stripe subscription system with tiered premium features and premium user analytics features.

Skills

Languages: Python, Java, TypeScript, JavaScript, C, C++, Go, SQL, HTML/CSS
Frameworks: React, Next.js, Node.js, FastAPI, Tailwind, Express.js, Flask
Tools: AWS, Google Cloud Platform, Firebase, PostgreSQL, MongoDB, BigQuery, Looker, Docker, GraphQL, Git
Python Libraries: NumPy, Matplotlib, OpenCV, Pandas, Scikit-learn, Tensorflow, SQLAlchemy, LangChain
Concepts: Backend, Distributed Systems, System Design, Machine Learning, Software Engineering, System Design, REST APIs