

# ASHMIT DEB

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## EDUCATION

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### University of Michigan

Aug. 2023 – Dec. 2027

*B.S. in Computer Science*

*Ann Arbor, MI*

**Cumulative GPA:** 3.4/4.0

**Leadership:** Michigan Financial and Math Society (Quant Lead) & Michigan Student AI Laboratory (AI Project Director)

**Relevant Coursework:** Data Structures and Algorithms, Object-Oriented Programming, Operating Systems, Computer Vision, Software Engineering, Compiler Construction, Data Science and Statistical Analysis, User Interface Development

## EXPERIENCE

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### Software Engineer Intern

May 2026 – Present

*Health Care Service Corporation*

*Chicago, IL*

- Developed **Python** data pipelines using **PyTorch** for **ML** infrastructure capacity, analyzing CPU, RAM, storage, and membership utilization trends to support mainframe, operating systems, and distributed-system upgrade decisions.
- Trained and evaluated **ARIMA**, **Prophet**, and **ETS** forecasting models with chronological time-series test splitting, comparing prediction residuals and selecting optimal model outputs using **Mean Squared Error** performance analysis.
- Automated problem reporting and infrastructure inventory analysis across **2,700+** enterprise applications using **SQL**, **ServiceNow** data, and **ITSM telemetry workflows** to improve incident visibility and reduce manual triage.

### Software Engineer Intern

May 2025 – Aug. 2025

*Sigray*

*Benicia, CA*

- Enhanced development processes in **Python** with **.NET** spectral-analysis modules and **NUnit** tests for a microscopic X-Ray boosting feature while enabling **CI/CD** validation via **Jenkins** on **Azure AKS** (Remote Access API + **GUI**).
- Integrated **ML** spectral decomposition by implementing **k-means clustering** in Jupyter, thereby embedding fully automated mineral-phase segmentation directly into the scalable data analysis pipeline.
- Built a **REST Node.js** microservice on **AWS EC2** to stream real-time scanned X-Ray data to a **Vue.js** frontend dashboard, cutting preview latency by **30%** via telemetry tuning and doubling productivity among engineers.

### Software Engineer Intern

May 2024 – Aug. 2024

*Blue Cross Blue Shield of Michigan*

*Detroit, MI*

- Designed a **REST** claims processing system with **Java** and **Spring Boot** integrating **PostgreSQL** validation logic to power an **Angular** frontend, reducing processing times by **40%** through scalable workflows.
- Designed and tuned **MySQL** schemas in **AWS RDS**, adding unit-tested queries and **SharePoint** validation dashboards, boosting data integrity and automated schema migrations for repeatable zero downtime releases.
- Expanded the iOS and Android membership app by improving the eligibility/benefits-lookup feature through fixing **15+** bugs, integrating the **React Native** UI through **Firebase** to a **Spring Boot** backend for further security.

## PROJECTS

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### Reddit API Stock Analyzer

Jan. 2025 – Feb. 2025

- Developed a multithreaded **C++** app that pulls finance-subreddit posts (r/WSB, r/stocks, r/investing) via the Reddit API (**cURL** + **JsonCpp**), scores sentiment, and outputs to a live **CLI** and auto-generated **HTML** report in real time.
- Applied modern **C++** practices (**RAII**, **STL**) and thread-pool concurrency with mutex-guarded queues, plus lock-free metrics, to accelerate data ingestion and scoring, producing near-real-time, actionable stock-sentiment insights.

### Real-Time Earthquake Monitor

Sep. 2024 – Nov. 2024

- Built and operated a **Node.js** and **Express.js** ingestion service with **Socket.io**, designing resilient real-time data pipelines while working in an **Agile** and **Scrum SDLC** with code reviews, issue tracking, and regular releases.
- Used **HTML**, **CSS**, **JavaScript**, and **React** on frontend and deployed **PostgreSQL**, Node API, and **Flask** analytics with **Docker** Compose pushing images to **AWS ECR** and securely scaling on **ECS** for continuous seismic tracking.

## SKILLS

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**Languages:** Java, Python, SQL, JavaScript/TypeScript, C#, C++, Go, HTML, CSS

**Frameworks/Libraries:** Spring Boot, Node.js, Express.js, React, Angular, .NET, NUnit, Vue.js, Flask, FastAPI

**Cloud/DevOps:** AWS EC2/ECS/ECR/RDS, Azure AKS, Docker, Kubernetes, Jenkins, GitHub, CI/CD, Jira

**Data/ML Tools:** PostgreSQL, MySQL, MongoDB, Databricks, PyTorch, PySpark, TensorFlow, Pandas, NumPy