Joshua Segal

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Education

Northeastern University Boston, MA

Bachelor of Science in Computer Science, AI concentration, Math minor ***Expected: May 2026***

Honors: GPA: 3.7 | Dean's List (all semesters)
Relevant Coursework: Algorithms | Object Oriented Programming | Artificial Intelligence | Machine Learning | Natural Language Processing | Neural Networks | Computer Systems | Database Design | Software Engineering

Technical Skills

Languages: Python | TypeScript/JavaScript | SQL | Java | Rust | C
Frameworks: FastAPI | Flask | Django | React | Node.js | Express.js | SQLAlchemy | Prisma
ML/AI: PyTorch | TensorFlow | LLMs | RAG | Computer Vision
Tools: AWS (ECS, RDS, Lambda, S3) | PostgreSQL | Supabase | Docker | Terraform | Git

Experience

Tech Lead, Software Engineer **July 2025 - Present**

NExT Consulting *Boston, MA*

- Led team of 6 engineers building production warehouse management system for hardtech manufacturer using **Python/React**, eliminating **20 hrs/wk** manual tracking, improving accuracy from **50%** to **95%** for **10k+** items
- Designed **PostgreSQL** schema with temporal row versioning and genealogy tracking for complete traceability across **100k+ rows**, and optimizing queries to achieve **2x** faster performance
- Architected and deployed containerized **AWS infrastructure (ECS, RDS, S3)** using **Docker** and **Terraform** with **CI/CD** pipeline, supporting **250+** users

Software Engineer **July 2024 - Dec. 2024**

Harvard Research Lab *Boston, MA*

- Built **Python** neuron segmentation desktop app reducing analysis time from **20 min to 0.5s**/image across **5000+** images, enabling **6+** researchers to label data, fine-tune **CNN** models, and run inference locally
- Designed local **NoSQL** database handling **100+** experiments with full persistence for reproducible training
- Increased segmentation precision from **61% to 93%** by implementing multi-user labeling using STAPLE algorithm

Projects

Multi-Agent Lead Qualifier | GitHub

- Built mulit-agent lead qualification system reducing response time from **2 hours to 4 seconds** across **1k+** messages/month using Python, Supabase, GPT-4o mini, Twilio webhooks
- Implemented custom agent router handling 5 agents with 99% routing accuracy using dynamic prompt injection
- Architected and deployed serverless AWS architecture (Lambda, S3) for **2 clients**, reducing costs by 90%

Property Intelligence Platform

- Built property intelligence platform scraping and analyzing **180k+** records using **FastAPI**, **React**, **PostgreSQL**
- Designed AI-powered web search saving **1k+ hrs/mo** research for **20+** users using **GPT-4o**, Tavily API
- Reduced integration time from **2 weeks to 2 days** using factory pattern for scrapers across **10+** locations

Medical Claims Engine | GitHub

- Built actor-driven claims processing engine achieving **5k+ claims/second** using **Rust**, **Tokio**
- Designed lock-free actor coordination using **mpsc** channels, achieving **4x** speed improvement
- Implemented real-time aging reports with automated time-bucket aggregation and statistical analysis

Calendar Automation System | GitHub

- Developed calendar automation system using LLMs and Notion API, saving **5+** hours/week of planning
- Fine-tuned **distilBERT** classification model for calendar event types, reducing event misclassifications by **80%** across **200+** events, using LLMs to generate **10k+** labeled training examples to overcome data scarcity