

# 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 | Rust | C | Java | SQL

**Frameworks:** FastAPI | Flask | Django | React | Node.js | Express.js | Tokio | SQLAlchemy | Prisma

**ML/AI:** PyTorch | TensorFlow | LLMs | RAG | Computer Vision

**Tools:** AWS (ECS, RDS, Lambda, S3) | PostgreSQL | Supabase | Docker | Terraform | Git

## EXPERIENCE

### Co-Founder & CTO

**April 2025 - Present**

*ZoneIQ - AI-Native Real Estate Brokerage*

*Boston, MA*

- Generated **\$10k+** revenue across **5** brokerage firms and secured **\$3k** seed funding for AI property analysis
- Built proptech platform eliminating **1k+** hrs/mo manual research via **web scrapers** analyzing **180k+** properties
- Developed **multi-agent AI** lead qualification system reducing time to respond from **2 hours to 4 seconds** through multi-step conversations using **Python** and **LLMs**, processing **1k+** messages/month

### Tech Lead, Software Engineer

**July 2025 - Dec. 2025**

*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 **AWS infrastructure (ECS, RDS, S3)** using **Terraform** with **CI/CD** pipeline, supporting **250+** users

### Machine Learning 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
- Increased segmentation precision from **61% to 93%** via architecting custom 11M parameter **UNet** denoising model and multi-annotator agreement weighting in **YOLOv8** training

## PROJECTS

### SMS Assistant for Restaurant | [GitHub](#)

- Built production **RAG** SMS agent to respond to employee texts, automating **75%** of responses for **50+** staff
- Implemented self-learning system using Twilio webhooks and **Node.js** to capture manager corrections and continuously expand Supabase knowledge base, improving answer coverage from **55% to 75%** in one week
- Deployed serverless architecture on **AWS Lambda**, reducing costs by **90%** while handling **1k+** queries/mo

### Calendar Automation System | [GitHub](#)

- Developed **Node.js** 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

### Medical Claims Engine | [GitHub](#)

- Built parallel claims processing engine using **Rust**, achieving **100%** reliability across **5k+** claims/second
- Implemented real-time claims aging report with automated bucketing and statistical analysis

## **NLP Similarity Framework** | [Github](#) | [Report](#)

- Developed a framework for evaluating research presentation-paper similarity, achieved 76% recall on human labels
- Designed and implemented LSTM RNN, distilBERT, Logistic Regression NLP models for text entailment, achieved 62% validation accuracy across 570k samples, employed Bayesian Optimization for hyperparameter tuning