# Johnathan O'Neal

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## EXPERIENCE

**Software Engineer**                                                    *Jul 2023 - Present*

Lightkeeper LLC, Boston, MA

- Constructed the end-to-end pipeline for multiple Jupyter web applications that enhanced internal workflows, including a CLI/API toolkit for client service team, automated data validation suites, Zendesk analytics dashboard, log analysis tools, and earnings event tracking.
- Developed and deployed two AI solutions: a comprehensive RAG chatbot utilizing Llama CPP, Llama Index, Postgres with PGVector, and Gradio interface, alongside an embedding-based vector similarity code search and discovery platform.
- Architected robust testing framework with advanced coverage analytics, implemented scalable pytest fixture ecosystem, and optimized data storage methodology, resulting in 10%+ increase in overall code coverage.
- Orchestrated client-specific ETL pipelines from inception to production, ensuring data quality, process optimization, and business logic implementation. Created centralized systems for FX Allocation, Basket Lookthrough, Net Attribution, and Carveout functionality.

## EDUCATION

**Master of Science in Mathematics**                                     *Dec 2021 - May 2023*

Tufts University, Medford, MA

**Bachelor of Science in Mathematics, Summa Cum Laude**                  *Sep 2018 - Dec 2021*

Tufts University, Medford, MA

- Activities: Varsity Football, Student Athlete Advisory Committee Team Representative, Environmental Representative Program, Tufts Financial Group, Tufts Trading Club, Mathematical Modeling teaching assistant, mathematics and coding tutor, and library supervisor.
- [William Campbell Trophy Semi-Finalist](#) (Recognition for NCAA football player demonstrating exceptional athletic performance, community service, and academic achievement) - Notable recipients include Peyton Manning, Tim Tebow, and Justin Herbert.
- Earned multiple additional honors including [CoSIDA Academic All-District recognition](#), [NESCAC All-Sportsmanship Team selection](#), two-time Hampshire Honor Society member, and four-time NESCAC All Academic Team honoree.

## PROJECTS

**Personal Website** - HTML, CSS, JavaScript, Jekyll, GitHub Pages ([website](#), [source code](#))

- Constructed a comprehensive portfolio website utilizing GitHub Pages architecture.
- Implemented CI/CD pipelines for various data-driven applications including sports betting arbitrage detector, goal-tracking Telegram bot and heat map, Japanese language learning statistics dashboard, and a Basketball Prediction Bot.

**DepotScan** - Python, Django, GeoDjango, JavaScript, OpenStreetMap

- Developing industrial real estate application enabling custom parcel mapping functionality, with integrated public records automation for property data population.
- Creating intuitive user dashboard interface for personalized property notation and custom data override capabilities.

**ByteSize Travel** - Python, SQLite, OpenAI API, AWS Lambda, API Gateway, S3, CloudFront, SES ([website](#), [source code](#))

- Architected sophisticated ETL framework for extracting, transforming, and enhancing thousands of articles from Gmail and RSS sources, leveraging SQL-based selection criteria and multi-agent OpenAI system for content transformation.
- Constructed highly scalable serverless AWS infrastructure combining Lambda/API Gateway for secure subscription management, S3/CloudFront for global content delivery, IAM/Certificate Manager for security, and SES for reliable newsletter distribution.

## SKILLS

- **Programming:** Python, SQL, C++, Git, JavaScript, HTML/CSS, Jupyter Notebooks
- **Data & ML:** ETL pipelines, Pandas, Vector Databases (PGVector), Scikit-Learn, PyTorch, LLM frameworks (Llama Index, LangChain)
- **Frameworks:** Django, AWS (Lambda, API Gateway, S3, CloudFront, SES), CI/CD, Agile, RESTful APIs, Testing (pytest)
- **Professional Development:** Japanese (JLPT N3, ~900 Hours), The Odin Project, TryHackMe, AWS Cloud Practitioner