

JOHN HEDLUND-FAY

Senior NLP Engineer

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SUMMARY

Senior Software Engineer and AI Specialist with 5+ years of production experience delivering systems for high-stakes clients, including the Premier League. Holds a Master's with Distinction in NLP, with hands-on research focused on enterprise-scale Retrieval-Augmented Generation (RAG). Driven to build scalable, real-world AI by combining strong full-stack engineering with applied machine learning.

PROFESSIONAL EXPERIENCE

Athium Limited | Boutique Information Technology Services | Software Engineer | 2020-2024

- Owned end-to-end development of the secure clearing house API for the Premier League transfer window, processing millions of pounds in contract applications annually adhering to strict deadlines due to critical transaction periods
- Collaborated directly with clients to scope complex features, adapting high-level requests into granular, production-ready technical specifications for the development team.
- Innovated site-wide search technology over complex relational schemas for historic player, transfer, and contract information ensuring high availability for data-intensive frontend dashboards.

Tactic | Consumer XR Application Development | XR Software Developer | 2018

- Adapted quickly to Unity-based tech stack for the creation of consumer-facing XR campaigns for clients including Jack Daniels and Treasury Wine Estates.
- Innovated a method of color correction, applying real-world lighting conditions while assuring adherence to brand standards.

RESEARCH HIGHLIGHTS

"A Context-Enriched NL-to-SQL Agent for Premier League Football Database Querying"

- Addressed a gap in the research by investigating the power of RAG (Retrieval-Augmented Generation) on text-to-SQL for domain-specific knowledge bases (Premier League stats).
- Devised a novel text-to-SQL benchmark leveraging domain-specific knowledge gained from professional experience and architected a novel RAG pipeline that statistically significantly outperformed baseline text-to-SQL models on the benchmark.

EDUCATION

University of Sheffield | MSc Computer Science (Speech & Natural Language Processing) | 2025

- Graduated with Distinction
- Developed practical skills for using distributed computing and performing machine learning tasks at very large scales.

University of Minnesota | BSc Computer Science (Artificial Intelligence and Big Data) | 2019

- Hong Kong University of Science & Technology: Semester Abroad, Spring 2017
- Contributing Writer, *The Wake*: 11 news, review, and op-ed pieces for this 51,000+ circulation publication.

SKILLS

- **AI & NLP:** LangChain, LlamaIndex, Pytorch, FAISS, OpenAI API, HuggingFace, RAG Architectures
- **Data Engineering:** MySQL, PostgreSQL, Elasticsearch, Apache Spark, Pandas, NumPy
- **Full-Stack & Backend:** PHP, Python, Java, Typescript, Laravel, Angular, React, Spring Boot
- **Infrastructure & DevOps:** Docker, CI/CD, Jira, GIT, AWS (S3, EMR, Lambda)