Joseph Spagnoli

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Education

University of Florida | Gainesville **Aug. 2023 – May 2027**
Bachelor of Science in Computer Science, Minors: Statistics, Electrical Engineering **GPA: 4.0**
Certificates in AI Fundamentals and Applications and Data Analytics

Experience

Software Engineering Co-op **Jan. 2026 – Present**
GE Appliances | Louisville, KY
- Incoming co-op on the **iOS Mobile Applications** team, contributing to feature development in **Swift** using the **VIPER** architecture.

AI Scholars Researcher **Aug. 2025 – Present**
M.E. Rinker, Sr. School of Construction Management | University of Florida
- Researching an early-warning ML task to **reduce occupational noise risk** by predicting whether a construction worker will exceed **NIOSH recommended** daily noise exposure limits by shift's end, using only the first half of a worker's shift.
- Engineering **time-series** and **frequency-based features** and comparing **candidate models** using appropriate evaluation metrics to determine the best approach for practical safety alerts.

System Administrator Intern **May 2025 – Present**
IFAS | University of Florida
- Managed technology needs for **25+ faculty**, providing technical support and leading system maintenance, imaging, and deployment to ensure seamless technology integration and reliability.
- Created a dedicated laptop **OU** in **Active Directory** and linked a custom **GPO** to automate biweekly maintenance, running Dell Command Update and Windows security updates every other Sunday.

AI Engineer Intern **Jun. 2025 – Aug. 2025**
Amentum | NASA Johnson Space Center (JSC)
- Reduced manual anomaly detection time by **12 hours** by assisting in the development of an **autoencoder** using **PyTorch** to detect anomalies for ISS ARED machine sensor faults, processing over **11,000 data points** per exercise set in **large-scale time-series data**.
- Engineering a comprehensive dashboard using **Dash, Plotly, and SciPy**, implemented a **CI/CD pipeline** with **PyTest** and GitLab runners to ensure code quality and deployed an **end-to-end data pipeline** with **Dagster**.

Undergraduate Research Assistant **Oct. 2024 – May 2025**
M.E. Rinker, Sr. School of Construction Management | University of Florida
- Developed a **CTGAN synthesizer** using **SDV** and Python to generate high-fidelity synthetic data, enabling initial **neural network training** in the absence of real-world data.
- Identified and analyzed key **physiological (5–8)** and **environmental (12–13)** variables to inform early model development for predicting heat-related illness risk in construction settings.

Projects

ExperienceCurator AI | Python, FastAPI, PostgreSQL, pgvector, LangChain, Docker, React/TypeScript **Dec. 2025 – Present**
- Built a local-first **"career memory"** system to **ingest docs + codebases**, normalize content, **generate embeddings**, and serve evidence-grounded answers through a **FastAPI REST API** with **pgvector retrieval**.
- Implemented an **agent-orchestrated RAG workflow** with evidence-backed **resume tailor + interview question bank**, cutting resume tailoring time **30%** via more representative, **citation-grounded** bullet suggestions and generating concise, sourced answers to user-created interview questions.

EvoChess | Python, PyTorch, MLflow, Dagster, AWS S3, Docker, Google Cloud Run **Mar. 2025 – Apr. 2025**
- Orchestrated an **automated MLOps pipeline** with **Dagster** to **ETL** chess game data from Lichess into an **AWS S3 bucket** for CNN model training with **PyTorch**, and deployed the final model as a containerized API using **Docker** and **Google Cloud Run**.
- Trained a **Convolutional Neural Network** in **PyTorch** on a filtered dataset of over **9,000,000 2000+ elo rated games**, engineering a data processing workflow to predict optimal move sequences from any given board state.

Data-Driven Resource Optimization | Python, Matplotlib, Scikit-learn **Jul. 2024 – Aug. 2024**
- Developed a **gradient descent** algorithm to **minimize** the **Mean Squared Error (MSE)** for predicting event resource needs
- Visualized cost function progression using **Matplotlib** and validated model performance, achieved a **R^2 score** of **0.958** with **Scikit-learn**, reduced costs by 20% and an **85%** decrease in waste.

Skills and Achievements

Languages: Python, C++, R, Java, SQL, JavaScript, TypeScript **Databases**: PostgreSQL (pgvector), MongoDB, InfluxDB, MySQL

Cloud & DevOps: AWS (S3), Google Cloud Platform (Cloud Run), Linux, Dagster, Docker, Grafana, CI/CD, Git

Libraries/Frameworks: Scikit-learn, PyTorch, Pandas, LangChain, SQLAlchemy, Alembic, SDV, React, Dash, Plotly

Awards: Amentum Intern Scholarship (2025), AI Scholar (2025), UF President's Honor Roll (2024–Present), Machen Florida Opportunity Scholar (2023)