

Joseph Spagnoli

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EDUCATION

University of Florida | Gainesville

Aug. 2023 – May 2027

Bachelor of Science in Computer Science, Minors: Electrical Engineering, Statistics

GPA: 4.0

Certificates in AI Fundamentals and Applications and Data Analytics

EXPERIENCE

AI Intern

Jun. 2025 – Present

Humanworks Lab | NASA Johnson Space Center (JSC)

- Engineered an automated anomaly detection system for ISS ARED machine sensor faults, processing over 11,000 data points per exercise set in large-scale time-series data stored in InfluxDBv3, which reduced manual analysis time by 60%.
- Implemented a CI/CD pipeline with PyTest and GitLab runners to ensure code quality and deploying an end-to-end pipeline with Dagster.
- Developed a comprehensive dashboard using Dash, Plotly, and SciPy, improving data analysis efficiency by 15% and enhancing readability with color-coded channels and metadata-on-hover functionality.

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.
- Provided hands-on assistance with Active Directory, including user account management and basic group policy tasks.
- Delivered essential technical support by performing troubleshooting for common hardware and software issues to ensure operational uptime.

AI Scholars Researcher

Oct. 2024 – Present

M.E. Rinker, Sr. School of Construction Management | University of Florida

- Leveraged a CTGAN synthesizer with SDV and Python to generate high-fidelity synthetic data, creating the foundational dataset for an artificial neural network, enabling model training in the absence of real-world data and improving prediction accuracy for heat-related illnesses.
- Investigated key physiological (5-8 features) and environmental (12-13 features) variables to enhance predictive models for heat-related illnesses in construction workers.
- Contributed to the design of an ANN framework for real-time heat strain prediction, paving the way for IoT integration in wearable devices to improve workplace safety.

PROJECTS

EvoChess | Python

Mar. 2025 – Apr. 2025

- Conducted A/B testing on multiple Convolutional Neural Network architectures to develop a chess engine with a 1200 Elo rating; the model was trained on over 80,000 games and outperformed 85% of beginner-level players.
- Engineered a full-stack machine learning application, from building a professional data foundation with the Lichess PGN dataset and an automated AWS S3 data pipeline, to advanced model training with PyTorch and experiment tracking with MLflow, and deploying the final model as a containerized API with Docker and Google Cloud Run.
- Achieved a 1200 Elo rating by training a Convolutional Neural Network on a dataset of over 80,000 chess games, resulting in a model capable of outperforming a beginner player.

Six Degrees of Twitter | C++ / Crow & React

Mar. 2025 – Apr. 2025

- Designed and implemented a C++ adjacency list and traversal system using BFS and A* algorithms to explore six degrees of separation in a large-scale social network graph of 100,000 nodes.
- Built a Crow-based HTTP server to return JSON responses for graph metrics and pathfinding queries.

Data-Driven Resource Optimization | Python

Jul. 2024 – Aug. 2024

- Developed a custom gradient descent algorithm to minimize the errors squared cost function for predicting event resource needs.
- Visualized cost function progression using Matplotlib and validated model performance, achieving an R^2 score of 0.958 with Scikit-learn.
- Integrated model forecasts into event logistics, driving a 20% reduction in resource costs and an 85% decrease in waste.

SKILLS AND ACHIEVEMENTS

Languages: Python, C++, R, Java, SQL, JavaScript, TypeScript Tools: Jupyter Labs, PowerBI, MySQL, VS Code

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

Libraries/Frameworks: Scikit-learn, PyTorch, Pandas, NumPy, SciPy, Matplotlib, Seaborn, TensorFlow, SDV, React, Dash, Plotly, Statsmodels, Express.js, Node.js

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