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

Research Assistant **Oct. 2024 – Present**

Understanding and Mitigating Heat Strain in Construction Workers Through Artificial Neural Networks

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

- Developed a CTGAN synthesizer using SDV and Python, generating synthetic datasets with high fidelity to improve artificial neural network training accuracy.
- Investigated key physiological and environmental variables, such as cognitive function and core body temperature, 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 and reduce health risks.

First Year Florida Peer Leader **Dec. 2023 – Present**

Division of Student Life | University of Florida

- Demonstrated leadership in collaboration with a faculty co-instructor to develop a comprehensive syllabus and 14 detailed lesson plans, ensuring alignment with course objectives and university standards.
- Utilized strong time management and planning skills to organize 20 assignments and activities, creating a structured and supportive learning environment for 25 new university students.

Social Chair **Dec. 2023 – Present**

Pi Delta Psi | University of Florida

- Spearheaded event planning for public and collaborative events with other organizations.
- Applied the Data-Driven Resource Optimization model to optimize event resource allocation, reducing costs by 20% and minimizing waste by 85% by accurately predicting necessary quantities based on presale data.
- Managed event budgets, planning, and execution, ensuring successful and memorable events.

Barista Trainer **Jan. 2022 – Aug. 2023**

Starbucks

- Trained 5 new employees on effectively crafting menu items, ensuring they adhered to company standards and procedures.
- Demonstrated strong multitasking abilities by preparing beverages, attending to customer needs, and maintaining store cleanliness.
- Ensured efficient store operations by supervising closing procedures and maintaining a high standard of service.

Projects

EvoChess | Python **Mar. 2025 – Present**

- Trained a CNN on over 80,000 chess games to predict the next best move from a given board state.
- Processed and transformed chess game data into structured matrices, enhancing both model training and move prediction accuracy.
- Integrated the model with an interactive chess board using Pygame and python-chess for real-time gameplay, with plans to incorporate a genetic algorithm to further refine its strategic nuances.

Data-Driven Resource Optimization | Python **Jul. 2024 – Aug. 2024**

- Developed custom gradient descent algorithm to minimize the errors squared cost function, ensuring effective optimization for predicting event resource needs.
- Visualized cost function progression using Matplotlib to validate proper optimization and fine-tune model parameters for better accuracy.
- Assessed model performance by calculating MAE, MSE, and R^2 scores with Scikit-learn, ensuring reliable predictions through comprehensive evaluation metrics.

Skills and Achievements

Languages: Python, C++, R, Java, SQL **Tools**: Git, PowerBI, Jupyter Labs, MySQL, VS Code, Visual Studio

Libraries/Frameworks: Pandas, NumPy, Matplotlib, Scikit-learn, XGBoost, PyTorch, SDV, React

Relevant Coursework: AI Fundamentals, Intro to Machine Learning, Data Structures and Algorithms, Programming with Data in R, Engineering Statistics, Differential Equations

Awards: AI Scholar (2025–2026), UF President's Honor Roll (2024–Present), Machen Florida Opportunity Scholar (2023)

Soft Skills: Communication, Collaboration, Problem-Solving, Critical Thinking, Adaptability, Time Management, Organization, Attention to Detail, Leadership & Mentoring, Conflict Resolution