Joseph Anthony Bosco IV

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EDUCATION

Columbia University New York, NY
Master of Science in Computer Science Expected Dec 2025
- Relevant course work: AI, Data-driven Decision Modeling, Stochastic Control for Financial Applications

Washington and Lee University Lexington, VA
Bachelor of Science in Computer Science May 2020
GPA: 3.88/4.0
Honors: Varsity Wrestling Academic All-American | Computer Science Teaching Assistant | Graduated Cum Laude
- Relevant course work: Algorithms, Parallel Computing, Theory of Computation, Business Analytics, Discrete Mathematics, Linear Algebra

SKILLS & CERTIFICATIONS

- Python, Java, C, Linux, Git, object oriented programming, statistics, machine learning, AI, NLP
- Previously Registered Financial Securities Broker, Series 7 Certified, CRD#: 7962262
- Interdisciplinary research, collaboration and teamwork, written and verbal communications

RESEARCH EXPERIENCE

Copado Chicago, IL
Research Intern, Retrieval Augmented Generation and NLP Jun 2024 - Aug 2024
- Analyzed GPU memory consumption for multithreading with NLP classifier, delivered weekly reports
- Programmed AI application in Python for retrieval augmented generation (RAG)
- Implemented knowledge graph retrieval algorithm with Neo4j, shortening tokens/prompt by 50%

NYU Langone Health New York, NY
Machine Learning Volunteer Researcher Nov 2023 - May 2024
- Implemented deep learning techniques (Standard and Convolutional Neural Network) for feature representation using PyTorch and Scikit-Learn, reducing EMR complexity by 90%
- Regressed multivariate knee alignment measurements from 512 total knee replacements to predict optimal post-operative knee alignment from pre-operative MRI, attaining reliable predictions with R-squared 0.444
- Collaborated on 12-page publication with research team, delivered short talk to over 100 orthopedic surgeons at 2024 International Society for Technology in Arthroplasty conference

Washington and Lee University Lexington, VA
Applied Deep Learning Researcher Jan 2023 - Apr 2024
- Constructed visual transformer model to classify 500x500 pixel MRI imaging data into four categories, setting new record for state-of-the-art results with 92% worse-case accuracy and 98% accuracy overall
- Proposed novel method for anomaly detection with univariate time series data, communicated method to neuroscience research team with 10-minute slide deck, achieved 96% accuracy 0% false negatives

PROJECTS

Algorithmic Trading Bot with TJF-DRL Aug 2024 - Present
- Augmented sophisticated code base utilizing deep learning to represent 39 technical indicators over sliding window of time, reducing input complexity for reinforcement learning agent to make real-time trades
- Integrated repository from open source and troubleshot over 10 dependency issues with PIP package manager
- Implemented installation script to enable compatibility with Ubuntu Linux and AWS, streamlining application installation and improving portability across different platforms such as OSX, Lin

Washington and Lee oSTEM Chapter Sep 2023 - May 2024
- Founded student organization extending opportunities in STEM to dozens of students at Washington and Lee
- Served as first president, assembled student board and registered chapter with national oSTEM organization