Nickolas Charles Goodis

Permanent Address: 161 Palmer Ave, Winter Park, FL 32789
School Address: 1320 South Dixie Hwy, Coral Gables, FL 33146
(505) 297- 8357 | ncg87@miami.edu | LinkedIn | Github

Education

University of Miami Coral Gables, Florida, August 2022 - May 2026
Bachelor of Science in Computer Science
Bachelor of Science in Mathematics
Bachelor of Science in Data Science and Artificial Intelligence

- **GPA: 3.9** | **SAT:** 1520/1600
- **Relevant Coursework:** Probability Theory, Linear Algebra, Machine Learning with Applications, Software Engineering, Theory of Computing, Data Structure and Algorithm Analysis, Android Programming, Intro to Probability and Statistics, Real Analysis

Professional Experience

***Undergraduate Researcher*, University of Miami** Coral Gables, Florida, January 2024 – Present
Research under Director of Graduate Studies, Dilip Sarkar, on advanced machine and deep learning applications

- Engineered an ensemble of networks boosting N-shot learning performance by up to 15 percent
- Implemented a state-of-the art W-Net architecture to generate synthetic masks for medical datasets in PyTorch
- Conducted experiments to minimize expert annotations in medical image segmentation, through a semi-automatic approach
- Co-authoring a research paper on the semi-automatic segmentation method, scheduled for publication by the end of the year

***Quantitative Trader Intern*, Greenland Risk Management** Remote, August 2024 – December 2024

- Developed a news-based futures trading algorithm for cotton, leveraging web scraping, MongoDB, and AWS containerization
- Engineered a multi-stage pipeline: web scraping large datasets, classifying relevance, and training LLMs to determine article outcomes
- Implemented predictive trading based on LLM outputs, demonstrating proficiency in end-to-end cloud ML pipeline development

Projects

Game Theory Optimal Poker Algorithm | Rust, C++

- Implemented Counterfactual Regret Minimization (CFR) to iteratively refine strategy, resulting in a near-optimal poker algorithm
- Achieved Nash equilibrium through extensive training, creating a balanced strategy that minimizes exploitability

Automated AI Researcher | Python

- Leveraged multiple LLM API's for determining and analyzing arXiv research papers, to develop and expand upon a research query
- Designed an interactive CLI with Rich library providing real-time progress tracking, and structured research result management
- Developed automated research pipeline with concurrent processing, reducing research time of paper analysis and synthesis

Pairs Trading Statistical Arbitrage Optimizer | Python, AWS

- Engineered a predictive model using PyTorch, Pandas, and Yahoo Finance to identify optimal entry points for pairs trading arbitrage
- Validated model efficacy through extensive backtesting, achieving a 600% return and 2.8 Sharpe Ratio over a 10-year period
- Implemented live paper trading functionality via Alpaca API and AWS, enabling daily market participation

Personal Website | JavaScript, HTML/CSS, Vercel | Link

- Designed and developed a simple and responsive personal website showcasing portfolio projects and professional experience

Android Mobile Application Portfolio | Java, SQLite

- Created multiple Android applications including a strategic game (Tic-Tac-Toe) and a content management system (Blogging App)
- Utilized SQLite for efficient local data storage and management in mobile environments

Donation Blockchain Portal | Solidity, JavaScript, React, Node.js, Vercel, Foundry | Link

- Built a decentralized donation app with Solidity and React, enabling secure ETH transactions, donor tier tracking, deployed on Vercel
- Enhanced the app with contract owner recognition, enabling secure and exclusive fund withdrawals

Machine Learning Deployment Platform | Python, JavaScript, HTML/CSS, Docker, AWS, Nginx | Link

- Architected a Flask-based website on AWS EC2, utilizing Nginx as a reverse proxy to showcase multiple person ML models
- Integrated multiple personal projects such as live face detection, multilingual translation, and image captioning functionalities
- Developed an image captioning system combining computer vision and NLP techniques and a multilingual translation model using PyTorch, Spacy, and Hugging Face, capable of automatically detecting input and translating between six languages
- Demonstrated full-stack and DevOps skills by combining frontend, backend, and containerization technologies

Extra-Curricular Activities

***Research Analyst*, Bonsai Applied Computation Group,** Coral Gables, Florida January 2024 – Present

- Participated in IMC's Prosperity-2, a 15-day long trading competition that gave exposure to trading over a simulated marketplace
- Developed a Jupyter notebook for identifying ideal pair-candidates through k-means clustering and forecasting optimal entry and exit positions through an LSTM (long-short term model)
- Developed a pipeline extracting machine code from multi-beam activity detectors, parsing data to cloud storage, and a custom GUI

Technical Skills

Languages: Python, Java, C, C++, JavaScript, Rust, HTML/CSS, SQL, Solidity
Developer Tools: Github, Cursor, VSCode, AWS, Linux, Docker, Paperspace, Nginx, Android Studio, SQL, MongoDB, Vercel, Foundry
Libraries/Frameworks: PyTorch, Sci-Kit Learn, NumPy, Pandas, Flask, React, Node.js