Joshua Hizgiaev

Software Engineer and Quantitative Developer
jhizgiae@stevens.edu | linkedin.com/in/joshuahizgiaev/ | github.com/Josh-Hiz | www.theautomata.net

Education

Stevens Institute of Technology Hoboken, NJ
Bachelor of Science in Computer Science *Expected May 2026*
Scholarships & Awards: Edwin A. Stevens Scholarship, Dean's List: Fall 2022-Spring 2024 *GPA: 3.94/4.0*
Relevant Coursework Data-Structures, Databases, Systems Programming, Probability and Statistics, Computer Architecture, Algorithms, Concurrent Programming, Theory of Computation, Operating Systems, Numerical Linear Algebra

Technical Skills

Programming: Java, Python, C#, C/C++, JavaScript, HTML/CSS, Racket, SQL, ARM64 Assembly, OCaml, Erlang
Technologies: Docker, Azure, Git, Google Cloud, Anaconda, Apache/Spark, Databricks, Dot Net, Jupyter, WASM
Libraries: Pandas, NumPy, Matplotlib, SciPy, PyTorch, Plotly, Seaborn, HuggingFace, OpenAI, ASP.NET, DeltaLake, PySpark
IT: Microsoft Windows, UNIX, MacOS, Linux, Google Cloud Suite, VMWare, Azure DevOps Server

Experience

Software Engineer Intern May 2024 - August 2024
PanAgora Asset Management *Boston, MA*
- Design and implement a **C# ASP.NET** REST API back-end to allow quantitative researchers to run tasks in parallel using Azure Batch, increasing the speed of scheduling jobs by over **500%**, used by over **30-40+** quantitative researchers
- Built a **Python library** with the Azure SDK to allow quantitative researchers to write/read from an Azure Data LakeHouse using **Rust DeltaLake-rs** and **asynchronous threading** to write/read **100K+ files/per hour**, supporting SQL queries.
- Implemented **high-performance C#** and Python applications using **OOP design patterns** such as Singleton, Abstract Factory, and Composite, as well as MVC principles with dependency injection and options pattern.
- Research and design efficient back-end web application using ASP.NET, to reduce the time for model training by over **50%**.

Undergraduate Research Intern June 2023 – August 2023
Stevens Institute of Artificial Intelligence and Columbia University *Hoboken, NJ*
- Perform data analysis/collection with **PostGreSQL** on **5 TB** of U.S. employment data using Pandas/SciPy/NumPy/MPL
- Produce cumulative frequency analysis on the LightCast database to analyze the growth of **21 data science skills**
- Named Co-Researcher for NSF research project awarded over **10 million dollars** distributed between Columbia and Stevens
- Create a **BiDirectional Recurrent Neural Network** for multiclass text classification model with average **70% accuracy** when training on **6GB** of U.S. Job advertisement data to predict job skills based on the advertisement

Undergraduate Research Assistant April 2023 – August 2023
Stevens Institute of Technology *Hoboken, NJ*
- Design and implement a textbook website for **100+** graduate intro to computer science students using static site generation.
- Implement a client-side virtual file system in **C** and Web-Assembly Emscripten to host static Python test scripts used in code challenge testing for a client-side Python IDE
- Contributed **20K+** lines of code to an established codebase via Git
- Produce client-side **Web-Assembly** tools including a Python IDE and Python REPL using **JS/HTML/CSS**, and **C**

Projects

SGB-Courses | *Python, Sphinx, Web-Assembly, Pyodide, HTML/CSS, JavaScript* June 2023 – August 2023
- Developed a client-side Text-Book site with Sphinx statically serving Python code challenge IDE, Quiz Generator, and Python REPL web applications used by graduate Introduction to Computer Science students
- Utilize **Web-Assembly, JavaScript**, and **HTML/CSS** to implement a Python IDE to run statically served test scripts similar to that of LeetCode for coding challenges
- Deployed to production, is used by **100+** graduate students at Stevens Institute of Technology

StockoBot | *Python, Discord.py, Matplotlib, Pandas, Financial Statistics, Plotly* May 2023 – Present
- Developed a Real-Time Financial Statistics and Quantitative Analysis Discord bot in **Python** and **Pycord**
- Published Discord bot on GitHub and used in servers with over **700+** users
- Implemented **Real-Time stock tickers** for all available tickers on Yahoo Finance featuring Open, Close, Volume, High, Low, and percent change
- Utilized **Matplotlib** and **Plotly** so users can query plots for stock performance, historical volatility, MACD, Sharpe-Ratio, and Sortino Ratio

StockoDash | *Python, Django, Portfolio Analysis, PyTorch, Plotly Dash, Plotly* July 2023 – Present
- Developed a **Django/Plotly Dash** web application to provide users a full **quantitative analysis** of their financial portfolio
- Applied **HTML, JavaScript,** and **Python** to provide users complete overview of portfolio performance including **ETF Analysis, Asset Allocation, Portfolio Gross**, Portfolio Net, and Benchmark
- Provide users sample **Portfolio Optimization** using **PyTorch** and provide Stock Forecasting using PyTorch in time series
- Adopted Python Plotly and Plotly Dash to provide users an overview of their portfolio composition including Sharpe Ratio