Unique Divine

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EDUCATION

Columbia University **New York, NY**
M.S. Applied Mathematics (June 2021)
B.S. Applied Physics, minor in Applied Mathematics (May 2020)
Relevant Graduate Coursework: Data Mining, Machine Learning for Data Science, Natural Language Processing, Applications in Financial Machine Learning, Empirical Methods of Data Science, Mathematics for Data Science
Susquehanna University (3-2 dual degree program with Columbia University) **Selinsgrove, PA**
B.S. Physics, minor in Computer Science | Dean's list | Departmental honors (May 2018)

TECHNICAL SKILLS

Programming: Python (proficient, 6+ yrs), Bash/Shell, Java, SQL, UNIX / Linux
Libraries: PyTorch, Keras, TensorFlow, Scikit-learn, SciPy.stats, Pytest, NumPy, Pandas, Matplotlib, Plotly, Flask
Other: Git, Vim, Tableau, HTML, PostgreSQL, MongoDB, Docker, Kubernetes

EXPERIENCE

IBM
Data Science Intern (Jun 2021 – Present)
- ❏ Performing clustering, sentiment analysis, and topic segmentation with survey responses for 2 IBM product teams
- ❏ Wrangling terabytes of data made up of click streams, product usage, and NPS data to derive actionable insights
- ❏ Regularly presenting visualizations and results to stakeholders, the VP of Client Advocacy, and other senior leadership

Applied Technology Solutions, Inc. (ApTSi)
Artificial Intelligence Engineer Intern (Sep 2020 – Jun 2021)
- ❏ Developed novel ML applications to automate portions of the doctor-patient interaction with NLP
- ❏ Wrote RESTful web microservices and APIs with Spring Boot and Java
- ❏ Advised necessary DevOps changes, leveraging Docker and Kubernetes to containerize applications

Selective Corporate Internship Program (SCIP)
Marketing Analyst / Web Development Team Lead (Aug 2020 – Jun 2021)
- ❏ Executed marketing strategies and presented in-depth analysis as a consultant for SCIP's corporate partners
- ❏ Spearheaded YouTube initiative by generating, editing, and promoting content → increased viewership over 300%

Columbia University
Bioinformatics Researcher (Computational Genomics), with Dr. Itsik Pe'er (Aug 2020 – Feb 2021)
- ❏ Applied neural networks (PyTorch) to predict 3 phenotypes of rats based only on genetic variants (SNPs) in DNA.
- ❏ Simulated rat genomes by creating additional data with generative adversarial networks, improving accuracy by 15%

Undergraduate Researcher (Astrophysics), with Dr. Marcel Agüeros (Jan 2019 – May 2019)
- ❏ Performed spectral reduction, a method for correcting artifacts and instrumental defects in stellar spectra
- ❏ Built fluency with Linux/UNIX OS, scripting, and management of large datasets

National Science Foundation Physics REU at University of Illinois Urbana-Champaign
Undergraduate Researcher (Machine Learning), with Dr. Joaquin Vieira (May 2019 – Aug 2019)
- ❏ Implemented convolutional neural networks with Python TensorFlow to predict gravitational lensing parameters several million times faster than traditional methods
- ❏ Added functionality for predictive modeling with custom architectures, ResNets, Inception-v4, AlexNet, and Overfeat

National Science Foundation Physics REU at Lehigh University
Undergraduate Researcher (Biophysics), with Dr. Slava Rotkin (May 2017 – Sep 2017)
- ❏ Developed techniques for localization of single-wall carbon nanotubes inside of C17.2 neural stem cells.
- ❏ Worked extensively with Raman spectroscopy to analyze the effects of nanotube concentration on cell health

Susquehanna University
Teaching Assistant & Tutor: Courses: Calculus, Physics I & II, Astrophysics I (Aug 2016 – May 2018)

PROJECTS

For additional information and projects: github.com/Unique-Divine

Algorithmic Stock Trading | May 2020 – Present | I created an automated trading approach that blends NLP with traditional indicator analysis using news sentiment. Eventually, I began leading and collaborating with a team of 5 professional developers to help with implementation. We've seen consistent alpha and ROI (20%+) in paper trades, live trades, and backtests. Stock trend classification accuracy is also above 90%. Tools: PyTorch, RNNs, Transformers, Alpaca API
Banknote Fraud Detection | I wrote a decision tree algorithm from scratch that outperforms Scikit-learn's. [repo]
Langevin Dynamics for Neural Network Optimization | Bayesian neural network implementations | [code] | [report]

OTHER SKILLS/INTERESTS: Japanese (advanced/fluent), saxophone, piano, guitar, reading, long-distance running