

Unique Divine



Unique-Divine.github.io



linkedin.com/in/unique-divine/



github.com/Unique-Divine

EDUCATION

Columbia University

M.S. Applied Mathematics

B.S. Applied Physics, minor in Applied Mathematics

New York, NY

(June 2021)

(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

TECHNICAL SKILLS

Programming: Python (extremely 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

Sommelier Finance

Lead Data Scientist

(Aug 2021 – Present)

Sommelier Finance is an Ethereum coprocessor, liquidity provider, and decentralized finance (DeFi) application development team.

- ❑ Building and deploying live predictive models for automated market-making
- ❑ Developing robust backtesting infrastructure
- ❑ Automating portfolio rebalances on Uniswap V3 in order to minimize risk and maximize yields

IBM

Data Scientist

(May 2021 – Aug 2021)

- ❑ Performed clustering and unsupervised topic modeling with survey responses for IBM Cloud
- ❑ Wrangled terabytes of data made up of click streams, product usage, and NPS data to derive actionable insights
- ❑ Leveraged: Sentence BERT, Latent Dirichlet Allocation (LDA), NLTK, Gensim, Plotly, PyTorch, SQL, IBM DB2

Applied Technology Solutions, Inc. (ApTSi)

Artificial Intelligence Engineer

(Sep 2020 – May 2021)

- ❑ Developed novel ML applications to automate portions of the doctor-patient interaction with NLP
- ❑ Advised and implemented necessary DevOps changes with Docker and Kubernetes
- ❑ Wrote containerized applications, RESTful web microservices, and APIs with Spring Boot and Java
- ❑ Leveraged: Apache Spark (PySpark), Spring Boot, Java, Docker, Kubernetes, SQL, PostgreSQL, MongoDB, PyTorch

Columbia University

Bioinformatics Researcher (Computational Genomics), with Dr. Itsik Pe'er

(Jan 2020 – Feb 2021)

- ❑ Applied neural networks (PyTorch) to predict 3 phenotypes of rats based only on genetic variants (SNPs) in DNA.
- ❑ Simulated rat genomes to create additional data with generative adversarial networks (GANs), improving accuracy by 15%
- ❑ Utilized the High-Performance Computing cluster to leverage CUDA GPUs, interfacing with PyTorch Lightning
- ❑ Presented results in Columbia University's Computer Science Research Colloquy

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
- ❑ Added functionality for predictive modeling with custom architectures, ResNets, Inception-v4, AlexNet, and Overfeat

Columbia University

Undergraduate Researcher (Astrophysics), with Dr. Marcel Agüeros

(Sep 2018 – May 2019)

- ❑ Performed spectral reduction, a method for correcting artifacts and instrumental defects in stellar spectra
- ❑ Built fluency with Linux / UNIX, scripting with BASH and Python, and management of large datasets

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

PROJECTS

RL Memory | [\[code\]](#) | [\[report\]](#) | [\[video\]](#)

- ❑ Efficient transfer learning in the deep reinforcement learning setting using Transformers and ConvNets (PyTorch)

Langevin Dynamics for Neural Network Optimization | [\[code\]](#) | [\[report\]](#)

- ❑ Bayesian neural network implementations (PyTorch) for algorithms such as SGLD and pSGLD.

Algorithmic Stock Trading

- ❑ Built an automated trading approach that blends NLP with indicator analysis by training news sentiments for predictions
- ❑ Models bring about consistent alpha and ROI (20%+) in paper trades and backtests; classification accuracy is above 90%.
- ❑ Leveraged: PyTorch, RNNs (LSTM), Transformers, Alpaca API, NLTK, Gensim, Pandas