# Unique Divine

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UniqueDivine.xyz
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## EDUCATION

**Columbia University**                                                                                              **New York, NY**
   *M.S.* Applied Mathematics                                                             (Anticipated June 2021)
   *B.S.* Applied Physics, minor in Applied Mathematics (GPA: 3.4)                (May 2020)
**Susquehanna University (3-2 dual degree program with Columbia University)**     **Selinsgrove, PA**
   *B.S.* Physics, minor in Computer Science (GPA: 3.8)                                (May 2018)
**Relevant Coursework:**
   **Graduate Courses**: Machine Learning for Data Science, Natural Language Processing, Probability and Statistics, ML with Applications in Finance, Data Mining, Empirical Methods of Data Science, Mathematics for Data Science

## TECHNICAL SKILLS

**Programming:** Python (proficient, 5 yrs), Bash/Shell, Git, SQL, MATLAB, Linux (Ubuntu), Java
**Libraries:** PyTorch, Keras, TensorFlow, Scikit-learn, NumPy, Pandas, Matplotlib, SciPy.stats, Ignite

## EXPERIENCE

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

### Selective Corporate Internship Program (SCIP)
**Marketing Analyst / Web Development Team Lead**                                        (Aug 2020 – Present)
- ❏ Regularly presenting as a marketing consultant to SCIP's corporate partners and executing marketing strategies
- ❏ Spearheaded YouTube initiative by generating, promoting, and editing content
- ❏ Performed in-depth analysis to urge best practices and identify key metrics, increasing viewership as much as 300%

### Columbia University
**Bioinformatics Researcher (Computational Genomics)**, with Dr. Itsik Pe'er              (Aug 2020 – Feb 2021)
- ❏ Applied neural networks (PyTorch) to predict 3 phenotypes based only on genetic variants (SNPs)
- ❏ Simulated rat genomes using generative adversarial networks to create more plentiful training data and achieved 15% higher classification accuracy
- ❏ Collaborated with PhD student to investigate deep learning's viability as a replacement for polygenic risk metrics

**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 OS and BASH scripting

### University of Illinois Urbana-Champaign Physics REU
**Undergraduate Researcher (Machine Learning)**, with Dr. Joaquin Vieira                 (May 2019 – Aug 2019)
- ❏ Implemented convolutional neural networks to predict gravitational lensing parameters for use in cosmology research with Python (TensorFlow) upwards of several million times faster than traditional methods
- ❏ Presented research results and wrote a report for this 10-week NSF REU
- ❏ Added functionality for predictive modeling with custom CNNs in addition to Inception-v4, AlexNet, and Overfeat

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

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

## PROJECTS

**Algorithmic Stock Trading**                                                                      (May 2020 – Present)
- ❏ Leading and collaborating with a team of 6 professional developers to create an automated trading system
- ❏ Applying a novel approach to blending NLP with financial factor analysis using news as an indicator
- ❏ Achieve ROI between 15-150% in one year backtests; Stock trend classification accuracy is 90%+
- ❏ Utilize: PyTorch Lightning, RNNs (LSTM), and Transformers to predict stock sequences; Alpaca for paper trading

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

## OTHER SKILLS: Japanese (advanced/fluent, ~3yrs), Saxophone, Excel, HTML, CSS, Time series analysis