Thomas Cane

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EDUCATION

Northwestern University   **September 2020**
M.S Physics and Astronomy   *Evanston, IL*
- Thesis: "White Dwarf Binary Orbit Evolution Using Stellar Resonance and Gravitational Wave Emission"

Skidmore College   **May 2019**
B.A Physics, Classics Minor   *Saratoga Springs, NY*
- Eta Sigma Phi, Classics Honors Society

EXPERIENCE

Financial Projects
- Python notebook that uses historical data and calculates VaR of sample portfolios with Monte-Carlo simulations and Variance-Covariance matrix for risk forecasting.
- Black-Scholes pricing program for dividend and non-dividend yielding assets for both puts and calls with calculations for implied volatility and the Greeks.
- Program to optimize sample portfolios by maximizing the Sharpe Ratio and plotting them against the Efficient Frontier.
- Professional Certificate in Capital Markets by NYIF (in progress): Coursework covering all aspects of Fixed Income, Money, and Equity Markets including derivatives strategies, pricing, and other financial mathematics.

Bootcamp 33 Data Science in Financial Services Hosted by Prospect 33   **November 2020**
- Bootcamp on the application of data science and machine learning for financial services with presentations from established professionals who provided high level details of the financial sector.
- Developed a case study data quality framework with a five-member team. Used data governance standards, data quality checks, and solution prioritization culminating in a presentation for C-level employees.

Northwestern University   **September 2019-September 2020**
Researcher   *Evanston, IL*
- Used population synthesis to create millions of sources that were aggregated, cleaned, and analyzed using Python, GoogleCollab, and Excel. Results were presented in my thesis defense using LaTeX and Python data visualization.

Skidmore College   **January 2016 – May 2019**
Researcher   *Saratoga Springs, NY*
- Seven consecutive semesters of advanced research where I taught myself IDL, advanced Excel, statistical analysis using R, and data visualization for quantitative analysis while learning research concepts from senior members. Each semester I presented results at a national conference or academic festival.
- Led the research team of 4-12 members with my professor the last 3 semesters while teaching new members how to use Python, SQL, IDL, and Excel to perform astrophysics research and data analysis.

SKILLS & INTERESTS

- **Skills:** Python; Excel; SQL; risk analysis & forecasting; Monte-Carlo simulations, covariance-variance matrix, DCF models, dividend discount models, Ratio analysis, data visualization, LaTeX, PPT presentation, quantitative analysis, regression analysis, logistic regression, linear regression, big data, gaussian distributions, stochastic calculus, multivariable calculus, chaos theory
- **Interests:** Weight-training, financial trends, music, competitive/strategic games, travel, fragrances