# Jasarin Vorawathanabuncha

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## Experience

**Part-Time VRC Research Consultant**
WorldQuant, LLC
*8/18 – 7/19*

- Created 70+ market-neutral trading strategies (alphas) for US, EU, and Asian equities using proprietary WebSim platform.
- Achieved average Out-of-Sample over In-Sample Sharpe of 1.48 using price-volume, fundamental, and sentiment datasets.

**Quantitative Research Intern**
*(full-time offered)*
WorldQuant Research Bangkok Office
*5/18 – 8/18*

- Low- to mid-frequency US Equity market-neutral alpha research using Python and C++.
- Implemented Kalman Filter, Fast Fourier Transform, Principal Component Analysis, Logistics Regression, and GARCH to alphas in Python.
- Developed Python-based alphas' parameter optimizers with stats module and genetic algorithm.
- Gave weekly lectures on alpha-creating techniques to WorldQuant's International Quant Championship 2018 participants.

**Teaching Assistant**
Chulalongkorn University
*8/17 – 12/20*

- Mathematical Techniques for Finance (Linear Algebra and Multivariable Calculus).
- Held office hours, prepare and provide detailed solutions to weekly problem sets.

## Education

**Carnegie Mellon University**
MSc. Computational Finance
*08/19 – 01/20*

- 4.16/4.33 QPA.
- Coursework: Investments. Options. Fixed Income. Discrete-Time Finance. Stochastic Calculus I, II. Time-Series Analysis, Real Analysis I. Computational Methods for PDE. Monte-Carlo Methods. Numerical Methods with C++. Data Science I, II. Machine Learning I, II. Putnam Seminar.

**Chulalongkorn University**
BBA in Banking and Finance
*08/15 – 05/19*

- 3.98/4.00 GPA. *(Rank 1/118 – Gold Medal)* .
- Finance major committee, Head Programmer of Rotman simulations, University chorus pianist
- Academic Excellence Award in all four years, Silver Medal in 2017 National Crown Diamond economic competition (Rank: 2/224), 4th place in Thailand 6th Mozart International Competition
- Coursework: Probability. Inferential Statistics. Linear Algebra and Multivariable Calculus. Macroeconomic Theory. Game Theory. Time-Series Econometrics. Micro-econometrics. Derivatives. Credit Modelling. Financial Engineering with MATLAB. Python. VBA.

## Mini Projects

**Sampling from Empirical Financial Correlation Matrix Densities Using GAN**
2/20

- Applied DC-GAN in generating financial correlation matrices for uses in Monte Carlo simulations.
- Found that the over-fitted network can be used to sample from high-dimensional (>60) empirical densities 2.9 times faster than traditional bootstrap sampling.
- Improve the baseline misclassification rate by 17.4 percentage points.

**Trading on Implied Risk-Neutral Densities**
*8/19*

- Interpolated SPX's Black-Scholes implied volatilities to estimate the risk-neutral densities of SPY.
- Found densities to exhibit spikes in out-of-the-money ranges and anti-leverage effect at times.
- Proposed potential trading strategies and applications to estimating VaR surfaces.

**Sensitivity Analysis and Intuitions on Edible Wedding-Cake Structured Notes**
*11/18 – 12/18*

- Modelled a new financial derivative by adding adaptive pay-offs to Wedding Cake Option.
- Priced the instrument on Hestonian underlying using Monte-Carlo with antithetic variate.
- Developed GUI in MATLAB for computing and visualising prices and the Greeks.
- Offered implications and intuitions on behaviour of the Greeks.

**Intra-Day Market Data Scraping**
*11/18 – 12/18*

- Scraped and stored intra-day prices and order books into a MySQL database with Python scripts.
- Maintained Google Cloud instances to automate the process for Chulalongkorn Financial Lab.
- Analyzed data for potential price-volume trading strategies.