

# Brian Hsin-Tai Wu

✉ [bhwu963@gmail.com](mailto:bhwu963@gmail.com) | ☎ (312) 818-8012 | [in LinkedIn](#) | [Portfolio](#)

## SUMMARY

---

A quantitative analytics professional; recently completed the Google Business Intelligence Professional Certificate and Deep Learning Specialization certificate. Proficient in statistical modeling, programming, and data analysis. Strong collaboration and communication skills, with a proven track record of delivering actionable insights to stakeholders. Seeking to leverage expertise in quantitative analysis to drive strategic decision-making and contribute to the success of a dynamic institution.

## EDUCATION

---

### University of Illinois at Urbana-Champaign

Champaign, IL

Master of Science in Finance (Quantitative Finance Specialization)

Aug 2021 – Dec 2022

Coursework: Complex Derivative Securities, Financial Risk Management, Financial Derivatives, Machine Learning in Finance

### Chang Gung University

Taiwan

Bachelor of Science in Computer Science and Information Engineering

Sep 2015 – Jun 2019

Coursework: Data Structure and Algorithms, Software Engineering, Discrete Mathematics, Artificial Intelligence

## SKILLS

---

**Programming languages and tools:** Python, R, SQL, C++, Linux, Git, AWS, GCP, Tableau, Bloomberg Terminal, Capital IQ

**Domain:** Risk Models, Derivatives, Structured Products, Stochastic Calculus, PDE, Monte Carlo, Term Structure, Data Science

**Certifications:** Google Business Intelligence Professional Certificate, Deep Learning Specialization, IBM Data Science Professional Certificate

## PROJECTS

---

### Mutual Fund Risk Management (R, Excel, GitHub)

May 2024

- Conducted data analysis and modeling to evaluate investment strategies and assess risk exposure
- Implemented GARCH model and DCC model to forecast future correlations between S&P 500 and CBOE Volatility Index
- Automated options portfolio's VaR and ES through delta-normal, historical simulation, and tail-distribution

### Complex Derivatives Valuation (Python, Bloomberg Terminal)

Nov 2022

- **Binomial model:** applied different tree models to price path-dependent products and conducted analysis on their accuracy, computing efficiency, and sensitivity to market risks
- **Finite difference method:** applied Crank-Nicolson method to price structured products and studied their accuracy, computing efficiency, and sensitivity to market risks
- **Monte Carlo simulation:** applied probabilistic approach to price three-underlying-asset Quanto product with correlations of different year spans and performed sensitivity analysis

## EXPERIENCE

---

### Research Center for Emerging Viral Infections, Chang Gung University

Taiwan

Research Assistant

Aug 2020 – May 2021

- Developed and maintained R Shiny dashboards to visualize and track data from laboratory experiments
- Analyzed complex data sets to identify trends and correlations, providing actionable insights for ML model development
- Collaborated with cross-functional teams to gather requirements for government-backed research projects on COVID-19
- Publication: Liu, K., et al. (2022, February). *Quantifying Neutralizing Antibodies in Patients with COVID-19 by a Two-Variable Generalized Additive Model*. **mSphere**, vol. 7, no. 1. DOI: [10.1128/msphere.00883-21](https://doi.org/10.1128/msphere.00883-21)

### AGTOP Technology, Inc

Taiwan

Software Engineer Intern

Jul 2018 – Aug 2018

- Developed chatbots using Node.js and Heroku to provide real-time solutions to customer inquiries
- Implemented NLP-based application to automate text analysis and sentiment analysis on incoming inquiries