

## Tianyu (Henry) Wu

+86 139-1223-3770 • tw251@duke.edu • LinkedIn: <https://www.linkedin.com/in/tianyu-henry-wu>

### EDUCATION

<b>Duke Kunshan University (DKU) / Duke University (Duke) Dual Degree Undergraduate Program</b>	2023.5
<i>B.S. in Applied Mathematics and Computational Science/Mathematics (by DKU)</i>	Kunshan, China
<i>B.S. in Interdisciplinary Studies (Applied Math &amp; Computational Science; Math, by Duke)</i>	
<ul style="list-style-type: none"><li>▪ GPA: 3.94/4.00 (Top 5%); Dean's List with Distinction (Fall 2019; Spring 2020); Dean's List (Fall 2020; Fall 2021)</li><li>▪ Full Merit-based Scholarship recipient; National Scholarship recipient</li><li>▪ Honorable Mention - Mathematical Contest in Modeling (MCM) 2020</li><li>▪ Campus Director, United Nations (UN) Millennium Fellow, Class of 2022</li></ul>	
<b>Yale-NUS College &amp; National University of Singapore (NUS)</b>	2022.1-2022.5
<i>Semester Exchange</i>	Singapore, Singapore
<ul style="list-style-type: none"><li>▪ Group Leader, Business Relations Team, Global China Connection - National University of Singapore China Summit 2022</li></ul>	

### PROFESSIONAL EXPERIENCE

<b>IToken</b>	2022.7-2022.11
<i>Growth Intern</i>	Shanghai, China
<ul style="list-style-type: none"><li>▪ Established an automated tracking and analysis pipeline, including over 2000+ crypto-related financial institutions around the world through developing Robot Process Automation (RPA) applications.</li><li>▪ Adapted the Support Vector Machines (SVM) algorithm as a natural language processing tool, to help source potential business clients throughout the crypto market via various channels.</li></ul>	
<b>CITIC Securities Company Limited</b>	2021.7-2021.8
<i>Business Development Intern</i>	Shanghai, China
<ul style="list-style-type: none"><li>▪ Applied Monte Carlo Simulation and Finite-difference PDE Methods separately to implement pricing models for the snowball options, with CSI Smallcap 500 Index as the target.</li></ul>	
<b>Bank of China</b>	2020.5-2020.7
<i>Summer Intern, Individual Digital Finance Department</i>	Nantong, China
<ul style="list-style-type: none"><li>▪ Redesigned the Individual Customer Information Quality Management Classification system based on consumer behavior analysis, and improved the efficiency of the original system by 50 percent.</li></ul>	

### RESEARCH EXPERIENCE

<b>Analyzing the Gap in Cancer Control Equity in China   Data+ Program, Duke University</b>	2022.5-2022.8
<i>Research Assistant. Supervisor: Dr. Meifang Chen, Assistant Professor of Health Policy at Duke Kunshan University</i>	
<ul style="list-style-type: none"><li>▪ Investigated social determinants of cancers in local areas and examined the impact of individual behaviors, social and physical environment, and policy influence on cancer-related outcomes in China.</li><li>▪ Applied the natural language processing (NLP) algorithm on Chinese social media posts, to quantify public sentiment towards the human papillomavirus (HPV) vaccine.</li></ul>	
<b>Understanding Waiting Time in Transaction Fee Mechanisms   Academic Grants Round Awarded by Ethereum Foundation</b>	
<i>Research Fellow</i>	2022.2-2022.10
Supervised by Principal Investigator: Dr. Luyao Zhang, Assistant Professor of Economics at Duke Kunshan University; Co-Principal Investigator: Dr. Fan Zhang, Assistant Professor of Computer Science at Yale University	
<ul style="list-style-type: none"><li>▪ Applied deep reinforcement learning model to extend and analyze the dynamics of the Ethereum Transaction Fee Mechanism.</li><li>▪ Improved the user behavior models using game theory solution concepts based on both rationality and bounded rationality.</li></ul>	
<b>How FinTech Empowers Asset Valuation: Theory and Applications   Summer Research Scholar (SRS), DKU</b>	2021.5-2021.10
<i>Student Lead/Research Assistant. Advisor: Dr. Luyao Zhang, Assistant Professor of Economics at Duke Kunshan University</i>	
<ul style="list-style-type: none"><li>▪ Backtested a selected basket of stocks and cryptocurrencies on daily closed price from Alpha API, using moving averages, volume-weighted averages, sentiment analysis, and pair trading strategies.</li><li>▪ Proposed a generally applicable data science pipeline for designing, programming, and evaluating different trading strategies to enhance crypto asset valuation.</li></ul>	

**Zu Chongzhi Center of Mathematics and Computational Science (CMCS), DKU**

2020.7-2021.6

*Research Assistant.* Advisor: Dr. Shixin Xu, Assistant Professor of Mathematics at Duke Kunshan University

- Built an Ordinary Differential Equation (ODE) mathematical model on the rate of calcium clearance to demonstrate that the dissolution of calcium that has aggregated within the mitochondria of vascular smooth muscle cells can drive an hour-long disruption, to improve the state of neurovascular malfunction in the wake of Cortical Spreading Depressions.

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**PUBLICATIONS & CONFERENCE**

- Zhang, L., **Wu, T.**, Lahrichi, S., Li, J., Salas-Flores, C.G. A Data Science Pipeline for Algorithmic Trading: A Comparative Study of Applications for Finance and Cryptoeconomics. *Accepted at the First International Symposium on Recent Advances of Blockchain Evolution: Architecture, Intelligence, Incentive, and Applications (BlockchainEvo 2022. Proc. 5<sup>th</sup> IEEE International Conference on Blockchain, Espoo, Finland, August 22-25, 2022.* <https://arxiv.org/abs/2206.14932#>.
- Sun, Y., **Wu, T.**, Zhang, H., Chang, J., Huang, H., Xu, S. Improved Mathematical Modeling of Persistent Post-Cortical Spreading Depression. *Mathematics in Action (MiA2021): Modeling and Analysis in Molecular Biology and Electrophysiology, Kunshan, China, June 10-13, 2021.*

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**LEADERSHIP & SERVICE****SciEcon CIC (Non-Profit Organization)**

2021.5-Present

*Inaugural Member, Interim Chair of Human Resources*

Registered in London, UK

- Participated in SciEcon AMA (Ask Me Anything) to conduct interviews with blockchain scholars, professionals, and entrepreneurs.
- Served as Inaugural Co-Chair and Executive Chair of the SciEcon Supertalent Program, nurturing candidates to stand out in research, innovation, and leadership by partnering with leading companies in the blockchain industry.
- Delivered an industry report: *Introduction to Service Neuron System (SNS) in Internet Computer Protocol (ICP)*, with aspects including tokenomics, decentralized governance, and so on.
- Conducted a holistic comparable company analysis for the client, a decentralized content review platform.

**Teaching Assistant of Prof Luyao Zhang at Duke Kunshan University**

2021.8-2022.5

*Relevant Courses:* Intelligent Economics: An explainable AI approach; Computational Microeconomics

- Assisted the professor with co-drafting 5 interactive instructions (including 2 code samples) on interdisciplinary coursework and research, and devising new methods of student assessments.
- Contributed to publishing the above two interdisciplinary and research-based curricula as components of Industry 4.0 Open Educational Resources (OER) with open access to students and researchers worldwide.
- Zhang, L., **Wu, T.**, Tian, X., Li, J., Wang, C., & Zhuang, Z. (2022). *Intelligent Economics: An Explainable AI Approach*. <https://doi.org/10.21428/aa21bfc0.841ff112>.
- Zhang, L., **Wu, T.**, Tian, X., & Zhuang, Z. (2022). *Computational Economics*.

**Student Alumni Board (SAB), Student Organization in DKU**

2021.5-2022.11

*Inaugural Member, Chairperson.* Supervisor: DKU Office of Development and Alumni Relations

- Initiated and led two alumni-related projects: Alumni Talks & Alumni Stories to develop and foster student-alumni relations, and inspire Forever DKU spirit among students. Pageviews and followers of the SAB WeChat account have tripled in one year.
- Offline alumni talks: Norah Yang's Sharing, Fuqua MMS alumnus and famous talk show actress, was fully booked in 10 mins.

**Student Ambassador Committee, Student Organization in DKU**

2019.10-2021.7

*Inaugural Member, Chairperson.* Supervisor: DKU China Enrollment Office

- Recruited over 60% of enrolled Chinese students at DKU to join the Student Ambassador Program to organize and implement strategies for promoting DKU's liberal arts education among the top high schools across 18 provinces.

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**ADDITIONAL INFORMATION****Skills:** Python, SQL, Java, SAS, MATLAB, Julia, QGIS, MS Office (incl. VBA), LaTeX**Coursera courses:** Python and Pandas for Data Engineering; Python Data Structures; Decentralized Finance (DeFi) Infrastructure**Certificates:**

- The Securities Qualification Certificate issued by the Securities Association of China
- International Peer Educator Training Program Certificate ([IPTPC](https://www.ipetpc.org/)) issued by College Reading & Learning Association

**Interests and Hobbies:** Chinese calligraphy, Guitar, Tennis, Swimming, Badminton