## CURRICULUM VITAE

### Contact Information

Joseph Chuang-Chieh Lin (林莊傑)

Assistant Professor

Department of Computer Science and Information Engineering,

Tamkang University

No.151, Yingzhuan Rd., Tamsui Dist., New Taipei City 25137, Taiwan.

E-mail: 158778@mail.tku.edu.tw TEL: +886-2-2621-5656 ext 3520.



## Work Experience

02/2021-present **Position:** Assistant Professor

Institution: Department of Computer Science & Information Engineering, Tamkang

University.

Location: New Taipei City, Taiwan.

Description: A full-time faculty. Teaching courses 10 hours per week, working on

research projects and supervising undergraduate & master students.

01/2020-01/2021 **Position:** Quantitative Analyst.

Company: Seth Technologies Inc. (塞特科技)

Location: Taipei, Taiwan.

**Description:** (i) Publish (internal) weekly research journal on market microstructure, including bid-ask spreads of stocks, futures, the volatility of the spreads, market contango ratio, flickering quotes distribution, liquidity of stocks and futures, etc. (ii) Futures' contract rollover optimization. (iii) Stock short-position closing before buying-

back due. (iv) Alpha signal research.

03/2018–12/2019 **Position:** Quantitative Finance Researcher (consultant).

Company: Cubist Systematic Strategies / Point72.

Location: Taipei, Taiwan.

**Description:** Using machine learning models (e.g., RandomForest, SVM, Multilayer Perceptrons, LSTM, etc.) for (i) Market microstructure, market impact, and short-term forecast based on market microstructure information. (ii) Design of stop-loss/

stop-gain strategies. (iii) Back-testing of strategies.

09/2014–02/2018 **Position:** Postdoctoral Research Fellow.

Institution: Institute of Information Science, Academia Sinica.

Location: Taipei, Taiwan.

**Description:** Topics across machine learning and game theory. Specifically: (i) Peergrading mechanism design and analysis. (ii) Muti-armed bandit and dueling bandit problem investigation. (iii) Efficiency of two-party political games including equilibria

investigation as well as their price of anarchy.

09/2011–08/2014 **Position:** Postdoctoral Research Fellow.

Research & Development Alternative Military Service (研發替代役).

Institution: Genomics Research Center, Academia Sinica.

Location: Taipei, Taiwan.

**Description:** On comparative and evolutionary genomics of primates and crop plants. Investigation of direction and magnitude of natural selection on alternative splicing events.

## Education

09/2004-07/2011	Ph.D. degree in Computer Science and Information Engineering, National Chung Cheng University, Chia-Yi, Taiwan.
09/2002-06/2004	Supervisors: Maw-Shang Chang & Peter Rossmanith  M.S. degree in Computer Science and Information Engineering, National Chi Nan University, Nantou, Taiwan.
09/1998-06/2002	Supervisor: Richard Chia-Tung Lee (R. C. T. Lee) <b>B.S. degree</b> in <i>Mathematics</i> , National Cheng Kung University, Tainan, Taiwan.

## Research Interests

• Data Science

- Online Learning
- Quantitative Finance
- Randomized Algorithms

• Bioinformatics

• Algorithmic Game Theory

# Scholarship & Awards & Projects (計畫與獲獎)

01/2024- $12/2025$	2024 NSTC-BFT ORCHID PROGRAM: Parameterized Online Learning
	for Min-Max Envy Resource Allocation and Team Formation (application in progress) (台法幽蘭計畫之雙邊人員交流互訪型計畫—申請中).
08/2023- $07/2026$	A Study on Group Competition Game of Real-Policy Making Based on Equilibria Existence and Gradient Algorithms (國科會計畫 NSTC 112-2221-E-032-018-MY3).
04/2021-03/2023	Game Theoretical Aspects in Modeling and Analyzing Party Election Campaign (科技部計畫 MOST 110-2222-E-032-002-MY2).
09/2009-08/2010	Personnel Exchange Programme for Joint Project Between NSC & DFG (台德雙邊短期研究計畫; Taiwan: NSC 98-2911-I-194-003; Germany: RO 927/10-1 / 568846).
04/2009	<b>Best Paper Award</b> ; The 26th Workshop on Combinatorial Mathematics and Computation Theory. Chiayi, Taiwan, 24–25 April, 2009.
09/2007-08/2008	DAAD-NSC Sandwich Program (台德三明治計畫): Scholarship Holder. Institute to Visit: RWTH Aachen University, Germany.
06/2023	The 2023 ICPC Taiwan Private University Programming Contest: Bronze Award (Coach) (全國私立大專校院程式競賽銅獎).

# Professional Services (研究服務)

03/2023 – 05/2023	Program Committee Member for the 40th Symposium on Combinatorial Mathe-
	matics and Computational Theory (CMCT 2023).
12/2022	Organizing Committee Member & Domestic Program Chair for the 27th
	International Conference on Technologies and Applications of Artificial Intelligence
	(TAAI 2022).
09/2021-present	Reviewer for Mathematical Reviews (MathSciNet, AMS).
12/2022	Program Committee Member of International Computer Symposium (ICS 2022).

**Note:** '\*': the corresponding author; '†': my student

#### • Journal Papers:

- 1. Bo-Hsin Lin<sup>†</sup>, <u>Chuang-Chieh Lin</u>, Chih-Chieh Hung, and Chien-Chang Chen\*: On the Identifiability of Artificial Financial Time Series. *Journal of Information Science and Engineering*. 40 (2024) 567–579.
- Chuang-Chieh Lin, Chih-Chieh Hung\*, Chi-Jen Lu, and Po-An Chen: Group Formation by Group Joining and Opinion Updates via Multi-Agent Online Gradient Ascent. *IEEE Computational Intelligence Magazine* 18 (2023) 60–61.
- 3. Wendgoundi Abdoul Rasmané Savadogo, <u>Chuang-Chieh Lin</u>, Chih-Chieh Hung\*, Chien-Chang Chen, Zhen Liu, Tingting Liu: A study on constructing an elderly abuse detection system by convolutional neural networks. *Journal of the Chinese Institute of Engineers* 46 (2023) 118–127.
- 4. Chih-Chieh Hung, Chuang-Chieh Lin, Hsien-Chu Wu\*, Chia-Wei Lin: A study on reversible data hiding technique based on three-dimensional prediction-error histogram modification and a multilayer perceptron. Applied Sciences 12 (2022) 2502.
- 5. <u>Chuang-Chieh Lin</u>\*, Chi-Jen Lu, and Po-An Chen: How good is a two-party election game? *Theoretical Computer Science* 871 (2021) 79–93.
- Trees-Juen Chuang\*, Min-Yu Yang, <u>Chuang-Chieh Lin</u>, Ping-Hung Hsieh, and Li-Yuan Hung: Comparative genomics of grass EST libraries reveals previously uncharacterized splicing events in crop plants. *BMC Plant Biology* 15:39 (2015).
- 7. Maw-Shang Chang, <u>Chuang-Chieh Lin</u>\*, and Peter Rossmanith: Testing consistency of quartet topologies: a parameterized approach. *Information Processing Letters* 113 (2013) 852–857.
- 8. Maw-Shang Chang, <u>Chuang-Chieh Lin</u>\*, and Peter Rossmanith: A property tester for tree-likeness of quartet topologies. <u>Theory of Computing Systems</u> 49 (2011) 576–587.
- Maw-Shang Chang, Hsiao-Han Chung, and <u>Chuang-Chieh Lin</u>\*: An improved algorithm for the redblue hitting set problem with the consecutive ones property. *Information Processing Letters* 110 (2010) 845–848.
- 10. Maw-Shang Chang, <u>Chuang-Chieh Lin</u>\*, and Peter Rossmanith: New fixed-parameter algorithms for the minimum quartet inconsistency problem. *Theory of Computing Systems* 47 (2010) 342–367.

### • Refereed Conference Papers:

- 1. Chih-Chieh Hung\*, Hong-En Hsiao, <u>Chuang-Chieh Lin</u>, Hui-Huang Hsu: Air Pollution Source Tracing Framework: Leveraging Microsensors and Wind Analysis for Pollution Source Identification. *In Proceedings of the 28th International Conference on Technologies and Applications of Artificial Intelligence* (TAAI 2023, Yunlin, Taiwan; 1–2 December 2023). I76. Excellent Paper Award.
- Chi-Hao Wang, Chi-Jen Lu, Ming-Tat Ko, Po-An Chen\*, <u>Chuang-Chieh Lin</u>\*: Budget-Constrained Cost-Covering Job Assignment for a Total Contribution-Maximizing Platform. In *Proceedings of the 34th International Workshop on Combinatorial Algorithms* (IWOCA 2023, Tainan, Taiwan, 7–10 June, 2023), pp. 392–403.
- 3. Po-An Chen\*, Chi-Jen Lu, <u>Chuang-Chieh Lin</u>, and Ke-Wei Fu: Multiagent Learning for Competitive Opinion Optimization. In <u>Proceedings of the 2022 International Computer Symposium</u> (ICS 2022, Taoyuan, Taiwan; 15–17 December 2022), pp. 61–72.
- 4. <u>Chuang-Chieh Lin</u> and Chi-Jen Lu\*: Efficient mechanisms for peer grading and dueling bandits. In <u>Proceedings of the 10th Asian Conference on Machine Learning</u> (ACML 2018, Beijing, China; 14–16 November), pp. 740–755.

- Chuang-Chieh Lin\*: Testing tree-consistency with k missing quartets. In Proceedings of the 28th Workshop on Combinatorial Mathematics and Computation Theory (CMCT 2011, Penghu, Taiwan, 27–28 May, 2011), pp. 280–285.
- 6. Maw-Shang Chang, Hsiao-Han Chung, and <u>Chuang-Chieh Lin</u>\*: An improved algorithm for the redblue hitting set problem with the consecutive ones property. In *Proceedings of the 26th Workshop on Combinatorial Mathematics and Computation Theory*, (CMCT 2009, Chiayi, Taiwan, 24–25 April, 2009), pp. 15–20. Best Paper Award.
- 7. Maw-Shang Chang, Chuang-Chieh Lin\*, and Peter Rossmanith: New fixed-parameter algorithms for the minimum quartet inconsistency problem. In *Proceedings of International Workshop on Exact and Parameterized Computation* (IWPEC 2008, Victoria B.C., Canada; 14–16 May), pp. 66–77.

#### • Refereed Posters or Non-Archived Work:

- Po-An Chen\*, Chi-Jen Lu, <u>Chuang-Chieh Lin</u>, Yu-Qin Lin: When and How to Have Negative Regrets for Online Learners? Profits for Prediction Market Makers as an Example. COMSOC'2023 Poster Session (3rd July 2023).
- 2. Bo-Hsin Lin, <u>Chuang-Chieh Lin</u>, Chih-Chieh Hung, and Chien-Chang Chen\*: On the Identifiability of Artificial Financial Time Series Data (人造金融時間序列的可檢測性). *In Program of the 27th International Conference on Technologies and Applications of Artificial Intelligence* (TAAI 2022, Tainan, Taiwan; 1–3 December 2022).
- 3. Po-An Chen\*, Yiling Chen, Chi-Jen Lu, and <u>Chuang-Chieh Lin</u>: Profitable prediction market making. Program of the 14th Annual Meeting of the Asian Association for Algorithms and Computation (AAAC 2021, Tainan, Taiwan; 22–24 October 2021).
- 4. <u>Chuang-Chieh Lin</u>, Chi-Jen Lu, Po-An Chen\*: How good is a two-party election game? EC'20 Main Poster Session (S3W3).

#### • Ph.D. Dissertation:

- A Study on Fixed-Parameter Algorithms and Property Testing. July 2011.