

CURRICULUM VITAE

Joseph Chuang-Chieh Lin (林莊傑)

Assistant Professor

Contact Information

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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) Peer-grading 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.
Supervisors: Maw-Shang Chang & Peter Rossmanith
- 09/2002–06/2004 **M.S. degree** in *Computer Science and Information Engineering*, National Chi Nan University, Nantou, Taiwan.
Supervisor: Richard Chia-Tung Lee (R. C. T. Lee)
- 09/1998–06/2002 **B.S. degree** in *Mathematics*, National Cheng Kung University, Tainan, Taiwan.

Research Interests

- Data Science
- Game Theory
 - Mechanism Design
 - Price of Anarchy of Games
 - Network Creation Games
- Online Learning
- Quantitative Finance
- Algorithms
 - Randomized Algorithms
 - Fixed-Parameter Algorithms
 - Property Testing
- Bioinformatics

Scholarship & Awards & Projects

- 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 **Best Paper Award**; 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.

Teaching Courses

- 02/2021–present **Affiliation:** Tamkang University, Taiwan.
Courses: Linear Algebra, Computer Programming Languages in C/C++, Exploring Sustainability (undergraduate; compulsory), Data Science Theory & Practical Applications (graduate; selective)
English-Taught (全英語): Algorithmic Game Theory, Randomized Algorithms, Economics & Computation, Online Learning Algorithms. (graduate; selective)
- 09/2010–06/2011 **Affiliation:** National Chung Cheng University, Taiwan.
Course: Introduction to Information Security (undergraduate; selective)
- 02/2007–06/2007 **Affiliation:** National Chung Cheng University, Taiwan.
Course: Discrete Mathematics (undergraduate; compulsory)
- 09/2006–01/2007 **Affiliation:** National Chung Cheng University, Taiwan.
Course: Introduction to Computers (undergraduate; selective)

- 12/2022 **Organizing Committee & 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).

Publication List

Note: “*”: the corresponding author.

- Journal Papers:

1. Wendgoundi Abdoul, Rasmané Savadogo, Chuang-Chieh Lin, Chih-Chieh Hung*, Chien-Chang Chen, Zhen Liu, Tingting Liu: A study on constructing an elderly abuse detection system by convolutional neural networks. To appear in *Journal of the Chinese Institute of Engineers*.
2. 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.
3. Chuang-Chieh Lin*, Chi-Jen Lu, and Po-An Chen: How good is a two-party election game? *Theoretical Computer Science* 871 (2021) 79–93.
4. Trees-Juen Chuang*, Min-Yu Yang, Chuang-Chieh Lin, 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).
5. Maw-Shang Chang, Chuang-Chieh Lin*, and Peter Rossmanith: Testing consistency of quartet topologies: a parameterized approach. *Information Processing Letters* 113 (2013) 852–857.
6. Maw-Shang Chang, Chuang-Chieh Lin*, and Peter Rossmanith: A property tester for tree-likeness of quartet topologies. *Theory of Computing Systems* 49 (2011) 576–587.
7. Maw-Shang Chang, Hsiao-Han Chung, and Chuang-Chieh Lin*: An improved algorithm for the red-blue hitting set problem with the consecutive ones property. *Information Processing Letters* 110 (2010) 845–848.
8. Maw-Shang Chang, Chuang-Chieh Lin*, 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. Po-An Chen*, Chi-Jen Lu, Chuang-Chieh Lin, and Ke-Wei Fu: Multiagent Learning for Competitive Opinion Optimization. In *Proceedings of the 2022 International Computer Symposium* (ICS 2022, Taoyuan, Taiwan; 15–17 December 2022).
2. Bo-Hsin Lin, Chuang-Chieh Lin, Chih-Chieh Hung, and Chien-Chang Chen*: On the Predictability of Financial Time Series Data (Chinese). In *Proceedings 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 Chuang-Chieh Lin: 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. Chuang-Chieh Lin and Chi-Jen Lu*: Efficient mechanisms for peer grading and dueling bandits. *Proceedings of the 10th Asian Conference on Machine Learning* (ACML 2018, Beijing, China; 14–16 November). To appear in *Proceedings of Machine Learning Research* (JMLR 95, 2018).

5. Maw-Shang Chang, Chuang-Chieh Lin*, and Peter Rossmanith: Testing consistency of quartet topologies: a parameterized approach. *Accepted in the International Conference on Computing and Security (ICCS 2012, Ulaanbaatar, Mongolia, 9–12, July).*
6. Chuang-Chieh Lin*: Testing tree-consistency with k missing quartets. Accepted for publication in *Proceedings of the 28th Workshop on Combinatorial Mathematics and Computation Theory* (Penghu, Taiwan, 27–28 May, 2011), pp. 280–285.
7. Maw-Shang Chang, Hsiao-Han Chung, and Chuang-Chieh Lin*: An improved algorithm for the red-blue hitting set problem with the consecutive ones property. *Proceedings of the 26th Workshop on Combinatorial Mathematics and Computation Theory*, (Chiayi, Taiwan, 24–25 April, 2009), pp. 15–20. Best Paper Award.
8. Maw-Shang Chang, Chuang-Chieh Lin*, and Peter Rossmanith: New fixed-parameter algorithms for the minimum quartet inconsistency problem. *Proceedings of International Workshop on Exact and Parameterized Computation (IWPEC 2008, Victoria B.C., Canada; 14–16 May)*, Lecture Notes in Computer Science, Vol. 5018, Springer-Verlag, pp. 66–77.

- Ph.D. Dissertation:

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