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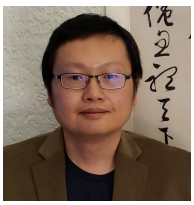

Employment History

2022 – Present **Associate Professor,** Computer Science, SUNY Poly.
2015 – 2022 **Assistant Professor,** Computer Science, SUNY Poly.
2014 – 2015 **Assistant Professor,** Computer Science, University of Central Missouri.
2012 – 2013 **Postdoctoral Research Fellow,** Physics, Université de Sherbrooke, Quebec, Canada.

Education

2006 – 2011 **Ph.D., Univ. of Central Florida** in Computer Science.
Dissertation title: *The Power of Quantum Walk: Insights, Implementation and Applications.*
2002 – 2003 **M.S.E., University of Pennsylvania** in Computer and Information Science.
2001 – 2002 **B.S., University of Central Florida** in Computer Science.
1992 – 1996 **B.S., National Taiwan University** in Public Health.

Research Publications

Journal Articles

1. B. Andriamanalimanana, C.-F. Chiang, J. Novillo, S. Sengupta, and A. Tekeoglu, "Efficient variant transaction injection protocols and adaptive policy optimisation for decentralised ledger systems," *International Journal of Grid and Utility Computing*, vol. 11, no. 6, pp. 847–856, 2020.
2. C.-F. Chiang, "Overview: Recent development and applications of reduction and lackadaisicalness techniques for spatial search quantum walk in the near term," *Quantum Information Processing*, vol. 19, no. 10, p. 364, 2020.
3. R. Amador, C.-F. Chiang, and C.-Y. Hsieh, "Exploration of hard to solve 3-sat problems," *Information Technology in Industry*, vol. 7, no. 2, 2019.
4. S. Sengupta, C.-F. Chiang, B. Andriamanalimanana, J. Novillo, and A. Tekeoglu, "A hybrid adaptive transaction injection protocol and its optimization for verification-based decentralized system," *Future Internet*, vol. 11, no. 8, p. 167, 2019.
5. C.-F. Chiang and C.-Y. Hsieh, "Resonant transition-based quantum computation," *Quantum Information Processing*, vol. 16, pp. 1–21, 2017.
6. C.-F. Chiang, "Selecting efficient phase estimation with constant-precision phase shift operators," *Quantum Information Processing*, vol. 13, no. 2, pp. 415–428, 2014.
7. C.-F. Chiang, "Quantum phase estimation with an arbitrary number of qubits," *International Journal of Quantum Information*, vol. 11, no. 01, p. 1 350 008, 2013.
8. C.-F. Chiang and G. Gomez, "Hitting time of quantum walks with perturbation," *Quantum Information Processing*, vol. 12, pp. 217–228, 2013.
9. H. Ahmadi and C.-F. Chiang, "Quantum phase estimation with constant precision phase shift operators," *Quantum Information and Computation*, vol. 12, no. 9&10, pp. 0864–0875, 2012.

10 C.-F. Chiang and P. Wocjan, "Quantum algorithm for preparing thermal gibbs states-detailed analysis.," *Quantum Cryptography and Computing*, vol. 26, pp. 138–147, 2010.

11 P. Wocjan, C.-F. Chiang, D. Nagaj, and A. Abeyesinghe, "Quantum algorithm for approximating partition functions," *Physical Review A*, vol. 80, no. 2, p. 022 340, 2009.

Conference Proceedings

1 C.-F. Chiang, A. Tekeoglu, S. Sengupta, T.-C. Wei, A. Gregory, and D. Kusukuntla, "A reference architecture for activities-as-asset distributed ledger with secure private computation," in *2023 International Conference on Information Networking (ICOIN)*, 2023, pp. 785–790. DOI: 10.1109/ICOIN56518.2023.10048971.

2 A. Tekeoglu, C.-F. Chiang, S. Sengupta, N. N. Ahmed, M. Stein, and D. Kusukuntla, "Optimized transaction processing in lightweight distributed ledger networks for internet of things," in *Blockchain–ICBC 2022: 5th International Conference, Held as part of the Services Conference Federation, SCF 2022, Honolulu, HI, USA, December 10–14, 2022, Proceedings*, Springer, 2022, pp. 117–128.

3 A. Tekeoglu, K. Bekiroglu, C.-F. Chiang, and S. Sengupta, "Unsupervised time-series based anomaly detection in ics/scada networks," in *2021 International Symposium on Networks, Computers and Communications (ISNCC)*, IEEE, 2021, pp. 1–6.

4 K. Bekiroglu, A. Tekeoglu, B. Andriamanalimanana, S. Sengupta, C.-F. Chiang, and J. Novillo, "Hankel-based unsupervised anomaly detection," in *2020 American Control Conference (ACC)*, IEEE, 2020, pp. 5139–5144.

5 C.-F. Chiang, S. Sengupta, A. Tekeoglu, J. Novillo, and B. Andriamanalimanana, "A quantum assisted secure client-centric polyvalent blockchain architecture for smart cities," in *2020 IEEE 17th Annual Consumer Communications & Networking Conference (CCNC)*, IEEE, 2020, pp. 1–6.

6 R. Amador, C.-F. Chiang, and C.-Y. Hsieh, "Efficient tough random symmetric 3-sat generator," in *The 9th International Conference on Computer Science, Engineering and Applications*, CS & IT-CSCP, 2019, pp. 41–49.

7 B. Andriamanalimanana, C.-F. Chiang, J. Novillo, S. Sengupta, and A. Tekeoglu, "Parameterized pulsed transaction injection computation model and performance optimizer for iota-tango," in *Advances on P2P, Parallel, Grid, Cloud and Internet Computing: Proceedings of the 13th International Conference on P2P, Parallel, Grid, Cloud and Internet Computing (3PGCIC-2018)*, Springer, 2019, pp. 74–84.

8 B. Andriamanalimanana, C.-F. Chiang, J. Novillo, S. Sengupta, and A. Tekeoglu, "Semi-synchronocity enabling protocol and pulsed injection protocol for a distributed ledger system," in *Advances on P2P, Parallel, Grid, Cloud and Internet Computing: Proceedings of the 13th International Conference on P2P, Parallel, Grid, Cloud and Internet Computing (3PGCIC-2018)*, Springer, 2019, pp. 26–35.

9 B. Andriamanalimanana, A. Tekeoglu, K. Bekiroglu, *et al.*, "Symmetric kullback-leibler divergence of softmaxed distributions for anomaly scores," in *2019 IEEE Conference on Communications and Network Security (CNS)*, IEEE, 2019, pp. 1–6.

10 C.-F. Chiang and A. Gregory, "Quantum walk on dimensionality reduced complete bipartite graphs with k edges removed," in *2019 IEEE Globecom Workshops (GC Wkshps)*, IEEE, 2019, pp. 1–6.

11 C.-F. Chiang and C.-Y. Hsieh, "Noise characterization: Keeping reduction based per-turbed quantum walk search optimal," in *EPJ Web of Conferences*, EDP Sciences, vol. 198, 2019, p. 00 001.

12 B. Andriamanalimanana, C.-F. Chiang, J. Novillo, S. Sengupta, and A. Tekeoglu, "A probabilistic model of periodic pulsed transaction injection," in *2018 2nd Cyber Security in Networking Conference (CSNet)*, IEEE, 2018, pp. 1–5.

13. B. Andriamanalimanana, C.-F. Chiang, J. Novillo, S. Sengupta, and A. Tekeoglu, "Tango: The beginning-a semi-synchronous iota-tangle type distributed ledger with periodic pulsed entries," in *2018 2nd Cyber Security in Networking Conference (CSNet)*, IEEE, 2018, pp. 1–3.

14. C.-F. Chiang, "Optimal dimensionality reduced quantum walk and noise characterization," in *Proceedings of the Future Technologies Conference (FTC) 2018: Volume 1*, Springer, 2018, pp. 914–929.

15. A. Gregory and C.-F. Chiang, "Simulation of quantum walks via hamiltonian reduction," in *2018 IEEE Nanotechnology Symposium (ANTS)*, IEEE, 2018, pp. 1–4.

16. V. Koscinski and C.-F. Chiang, "Dimensionality reduction of the complete bipartite graph with k edges removed for quantum walks," in *2018 IEEE Nanotechnology Symposium (ANTS)*, IEEE, 2018, pp. 1–3.

17. C.-F. Chiang and C.-Y. Hsieh, "Optimizing quantum walk search on a reduced uniform complete multi-partite graph," in *2017 The 17th Asian Quantum Information Science Conference*, 2017, pp. 129–131.

18. S. Patil, A. JavadiAbhari, C.-F. Chiang, J. Heckey, M. Martonosi, and F. T. Chong, "Characterizing the performance effect of trials and rotations in applications that use quantum phase estimation," in *2014 IEEE International Symposium on Workload Characterization (IISWC)*, IEEE, 2014, pp. 181–190.

19. C.-F. Chiang, "Sensitivity of quantum walks with perturbation," in *2010 The 10th Asian Quantum Information Science Conference*, 2010, pp. 209–210.

Manuscript

1. *Grover search inspired alternating operator ansatz of quantum approximate optimization algorithm for search problems, arxiv:2204.10324, 2022.*

2. *Quantum walk inspired dynamic adiabatic local search, arxiv:2204.09830, 2022.*

3. *Space-efficient quantization method for reversible markov chains, arxiv:2206.06886, 2022.*

Selected Talks

2022 — Quantum Computing Applications: Optimization :: Quantum Walk Inspired Dynamic Adiabatic Local Search and Alternating Operator Ansatz of Quantum Approximate Optimization Algorithm for Search Problems, 4th Annual International Quantum Information Science Workshop, Rome NY, USA [**Invited**]

2020 — A Quantum Assisted Secure Client-Centric Polyvalent Blockchain Architecture for Smart Cities, IEEE Consumer Communications and Networking Conference

2019 — Quantum Walk on Dimensionality Reduced Complete Bipartite Graphs with k Edges Removed, Quantum Communication and Information Technology (QCIT) workshop of IEEE Global Communications Conference

— Perspective: Recent Development and Applications of Reduction and Lackadaisicalness Techniques for Spatial Search Quantum Walk in the Near Term, Young Researchers Forum on Quantum Information Science, National Tsing Hua University, Taiwan

— Quantum Walk for the Near Term Computational Science Initiative, Brookhaven National Lab, March 25, Upton, NY [**Invited**]

2018 — Quantum Walk and Its Optimal Search on A Systematic Dimensioality Reduced Uniform Complete Multi-Partite Graph, Institute of Information Science, Academia Sinica, Taiwan, Jun. 6 [**Invited**]

2015 — Applications and Perturbations of Quantum Walk, First Annual Meeting, SIAM Central States Section

2011 — Quantum Phase Estimation with Constant Precision Phase Shift Operators, Institute for Quantum Computing, Canada, Apr. 12

Selected Talks (continued)

- Amplitude-Amplification-Based Approach for Preparing Thermal Gibbs States, Centre for Quantum Technologies, Singapore, Sept. 13

2010
- Quantum Algorithm for Preparing Thermal Gibbs States - Detailed Analysis, Institute for Quantum Computing, Canada, May 04

2009
- A Quantum Algorithm for Approximating Partition Functions, Fields Institute, Canada, Aug. 22

Academic Experience

Research Paper Advisor
- Undergraduate: R. Gomez, A. Gregory, V. Koscinski
- Graduate: R. Amador, D. Kusukuntla, M. Stein

Project Advisor
- Master Projects (1-5 students/semester) and Undergraduate Capstone Projects (1-5 students/semester)

Teaching
- Quantum Computation, Blockchain (focus on Algorand developer portal)
- Artificial Intelligence, Recurrent and Adversarial Neural Network
- Data Structure (C++), Approximation and Randomized Algorithms, Finite Math, Introduction to Computing Seminar (Python)
- Compiler Design, Software Engineering

Awards

As Faculty

2020, 2021
- AFRL Summer Faculty Fellowship Program (SFFP)

2020
- Air Force Research Lab (AFRL) and SUNY Quantum Warrior Challenge 2020 (PI: Catalyst Hamiltonian Assisted QAOA for Near-Term Quantum Technology)

2019
- SUNY Poly Seed Grant (PI: Quantum Walk for Near-term Quantum Technologies)
- SUNY Poly Seed Grant (Co-PI: Physical Model and Mathematical Problem in Quantum Computing and Quantum Information Processing)

2017, 2018
- SUNY Poly Visiting Scholar Seminar Series Award

2017
- SUNY Poly Individual Development Award

As Student

2010
- UCF Graduate Travel Fellowship

2009
- Delta Epsilon Iot Academic Honor Society

2002
- UCF Dean's List

2001
- Florida Chinese Linkage Scholarship
- UCF President's Honor Roll

1992, 1993
- NTU Campus President Award

Professional Service

Journal Reviewer
- Quantum Information Processing, Springer
- Quantum Science Technologies, IOP Publishing
- Physica Scripta, IOP Publishing

Professional Service (continued)

- Journal of Physics B, IOP Publishing

University Service

- UPenn: Judge for Computer Information Science Senior Project
- UPenn: Interviewer for Undergraduate Admission
- SUNY Poly: Chair of Graduate Council Committee (Sept. 2021 - Present)
- SUNY Poly: Member of Information System Tenure Track Faculty, Computer Science Lecturer, Mathematics Tenure Track Faculty and Public Affair Specialist Search Committees

Conference Service

- First Tech Challenge (FTC) Robotics Competition Volunteer judge for attribute awards in Central New York Region(2018, 2019)
- Program Committee on IoT Track: 13th International Conference on P2P, Parallel, Grid, Cloud and Internet Computing
- Technical Programm Committee member on (1) IntelliSys 2020 (2) Future Technologies Conference (FTC) 2020 (3) Future of Information and Communication Conference (FICC) 2021 (4) Computing Conference 2021
- Session Chair: Future Technologies Conference (FTC), Vancouver, BC, Canada, 2018

Industry Experience

2005-2006 — Associate Consultant: AboveE Technology Inc., Integration between database system and IBM Websphere Business Integration Server (WBIS)

2004 — Data Analyst: Freelance, Development of web applications and integration with database systems

1999-2000 — Speech Recognition Transcriber: Philips Innovation Center Taipei, Speech tagging to train the learning model.

1996-1998 — Mandatory Military Service: Taiwan Army.

Skills

Natural Languages — Fluent: English, Mandarin Chinese, Taiwanese

Limited Fluency: : German (2 and 1/2 years college study)

Coding — QISKit, Matlab, Mathematica, PyTeal, Algorand SDK, Java, PHP, Python, C, C++

Databases — MySQL, PostgreSQL, HSQL, SQLite, MS SQL Server.

Web Dev — HTML, CSS, JavaScript, Apache Web Server, Tomcat Web Server.

IDE & Tools — Anaconda, Eclipse, Git, LaTeX

References

Available on Request