Chencheng Liang

PhD in Computer Science

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Work Experience

2025 – Present | **Hainan Jiangshuo Industrial Co., Ltd.**
Co-founder & Remote Work
- Co-founded international trade company specializing in import/export workflows
- Exploring AI-driven workflow automation for industry applications
- Managing remote operations and business development

2019 – 2025 | **Uppsala University, Sweden**
PhD Student & Teaching Assistant
- Conducted research in automated reasoning and graph neural networks
- Developed novel approaches for guiding constraint solving using GNNs
- Supervised multiple master's projects in collaboration with Ericsson Research
- Taught courses in machine learning, programming methodology, and embedded systems

Education

2019 – 2025 | **Uppsala University, Sweden**
PhD in Computer Science
Thesis: "Learning to Guide Automated Reasoning: A GNN-Based Framework"
Advisors: Philipp Rümmer, Yi Wang, Marc Brockschmidt
Opponent: Stephan Schulz

2016 – 2018 | **University of Göttingen, Germany**
Master of Science in Computer Science
Thesis: "Topology Control Using Fuzzy Game Theory in Mobile Underwater Sensor Networks"
Grade: 1.0 (Sehr gut, highest distinction)

2010 – 2014 | **Chengdu University, China**
Bachelor of Science in Software Engineering
Graduated 1st in class

Teaching Experience

2019 – 2025 | **Uppsala University, Sweden**
Course Instructor & Teaching Assistant
- **Natural Computation Methods for Machine Learning** (Master's, 10 credits, 2019-2025)
- **Imperative and Object-Oriented Programming Methodology** (Bachelor's, 10 credits, 2023-2024)
- **Project CS** (Master's project course, 30 credits, 2022-2024)
- **Introduction to Studies in Embedded Systems** (Master's, 5 credits, 2019-2021)

Thesis & Project Supervision

2024 **Federated Learning meets Large Language Models**
Master's Project Supervision
Students: Mahtab Mirhaj, Oguzhan Ersoy, Yixin Huang, Shiqi Shu
Ericsson Research & Uppsala University

2023 **Distributed Mobility Prediction in Telecommunication Networks**
Master's Project Supervision
Students: Shreyansh Singh, Lifang Zheng, Savvas Giortsis, Tobias Lass, Yilei Zheng, Salum Nassor
Ericsson Research & Uppsala University

2022 **Shortest Path Reliable Estimation: Applying Graph Neural Networks - SpreadNet**
Master's Project Supervision
Students: ChanVuth Chea, Boli Gao, Jennifer Gross, Haouyuan Li, Paarth Sanhotra, George-Alexandru Stoian, Sofia Afnaan Syed, Haodong Zhao
Ericsson Research & Uppsala University

2021 **Exploring Properties and Limitations of Graph Neural Networks (GNNs) in Software Verification**
Master's Thesis Supervision
Student: Kexin Xu
Uppsala University

Notable Projects & Achievements

2025 **CozySteps - LLM-powered Activity Recommender**
Impact Hack 2025, AI Sweden
- Built mobile app prototype for families with autistic children
- Implemented LLM-based activity recommendation engine
- Won recognition for addressing real societal challenges

2023 **Insilico - AI-Driven Art Installation**
Uppsala Art Museum
- Integrated AI-based sentiment analysis for Mat Collishaw's art installation
- Developed real-time Twitter sentiment analysis system
- Connected digital hostility to physical art expression

Research Interests & Skills

- **Primary Research Areas:** Neural network training, Graph Neural Networks (GNNs), Symbolic reasoning, AI workflow automation
- **Technical Skills:** Python, Scala, Java, C/C++, PyTorch, TensorFlow, Git, Linux, Docker
- **AI/ML:** Deep Learning (CNN, RNN, GNN, Transformers), Reinforcement Learning, NLP, Classical ML
- **Languages:** Chinese (Native), English (Fluent), Japanese (Basic)

Professional Service

- **Subreviewer for Conferences:**
  - FMCAD 2025, FM 2024, LPAR 2024, VMCAI 2024, FMCAD 2023, LPAR 2023
  - FMCAD 2022, IJCAR 2022, FroCoS 2021, CADE 2021, TACAS 2020
  - iFM 2019, FroCoS 2019, CADE 2019

- **Talks & Presentations:**
  - "Guiding Constraint Horn Clauses Solving using Graph Neural Networks" - ISTA, Austria, 2024
  - "Boosting Constrained Horn Solving by Unsat Core Learning" - HCVS Workshop, Luxembourg, 2024
  - "Exploring Representation of Horn Clauses using GNNs" - AITP Conference, France, 2022
  - "Guiding Interpolation for Model Checking by Deep Learning Techniques" - AVM, Czech Republic, 2019

Publications

2025
1. Abdulla, P. A., Atig, M. F., Cailler, J., **Liang, C.** & Rümmer, P. *When GNNs Met a Word Equations Solver: Learning to Rank Equations* in *15th International Symposium on Frontiers of Combining Systems (FroCoS)* (Springer, 2025).

2024
2. Abdulla, P. A., Atig, M. F., Cailler, J., **Liang, C.** & Rümmer, P. *Guiding Word Equation Solving Using Graph Neural Networks* in *22nd International Symposium on Automated Technology for Verification and Analysis (ATVA)* (Springer, 2024).
3. Abdulla, P. A., **Liang, C.** & Rümmer, P. *Boosting Constrained Horn Solving by Unsat Core Learning* in *25th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI)* (Springer, 2024).

2022
4. **Liang, C.**, Rümmer, P. & Brockschmidt, M. *Exploring Representation of Horn clauses using GNNs* in *8th Workshop on Practical Aspects of Automated Reasoning (PAAR)* (2022).

2021
5. Yuan, Y., **Liang, C.**, Chen, X., Baker, T. & Fu, X. Adaptive Fuzzy Game-Based Energy-Efficient Localization in 3D Underwater Sensor Networks. *ACM Transactions on Internet Technology* **22,** 1–20 (2021).

2019
6. Yuan, Y., **Liang, C.**, Kaneko, M., Chen, X. & Hogrefe, D. Topology Control for Energy-Efficient Localization in Mobile Underwater Sensor Networks Using Stackelberg Game. *IEEE Transactions on Vehicular Technology* **68,** 1487–1500 (2019).

2017
7. Yang, Y., **Liang, C.** & Ji, S. Comments on "Fuzzy multicriteria decision making method based on the improved accuracy function for interval-valued intuitionistic fuzzy sets" by Ridvan Sahin. *Soft Computing* **21,** 3033–3035 (2017).

2015
8. Yang, Y., **Liang, C.**, Ji, S. & Liu, T. Adjustable soft discernibility matrix based on picture fuzzy soft sets and its applications in decision making. *Journal of Intelligent & Fuzzy Systems: Applications in Engineering and Technology* **29,** 1711–1722 (2015).