FANGPING LAN

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Education

- **Temple University**

School: PhD of Computer Science & Information	**GPA:** -
Major: Computer Science & Information	**Expected Graduate:** May 2026

- **Monmouth University**

Degree: Master of Software Engineering	**GPA:** 4.00
Major: Software Engineering	**Graduate:** December 2020

Research Interests

Natural Language Processing (NLP), Large Language Models (LLMs), Agentic AI, Agentic Reinforcement Learning (RL), Database Tuning, Prompt Engineer, Machine Learning (ML)

Selected Publications

Google Scholar: https://scholar.google.com/citations?hl=en&user=K00gXYUAAAAJ

- **Fangping Lan**, Qi Zhang and Eduard C. Dragut, "Making Revisions Understandable: A Survey of Edit Intentions, Methods, and Applications", (ACL'26, Under Review)
- Q. Zhang, **Fangping Lan**, C. Caragea, L. J. Latecki, Eduard Dragut "Scaling Performance and Low-Resource Annotation with Many-Shot In-Context Learning for Named Entity Recognition", (ACL'26, Under Review)
- **Fangping Lan**, Abdullah Aljebreen and Eduard C. Dragut, "Why They Link: An Intent Taxonomy for Including Hyperlinks in Social Posts", (WebSci'26, Under Review)
- **Fangping Lan**, Abdullah Aljebreen and Eduard C. Dragut, "One Document, Many Revisions, Too Many Edit Intention Taxonomies", *Findings of the Association for Computational Linguistics (ACL'25)*
- M. Anwar, A. Wang, **Fangping Lan** and M. Caesar, "Demo: Structural Network Minimization: A Case of Reflective Networking", September 10-14, Sigcomm 2023
- M. Anwar, **Fangping Lan**, A. Wang and M. Caesar, "Indirect Network Troubleshooting with The Chase", June 29-30, (APnet'23)
- **Fangping Lan**, S. Biswas, B. Gui, J. Wu and A. Wang, "Design and Implementation of a Strong Representation System for Network Policies," *2022 International Conference on Computer Communications and Networks (ICCCN 2022)*
- **Fangping Lan**, Bin Gui, and Anduo Wang. 2021. "Fauré: A Partial Approach to Network Analysis". *In Proceedings of the 20th ACM Workshop on Hot Topics in Networks (HotNets '21)*
- Bin Gui, **Fangping Lan**, and Anduo Wang. 2021. Sarasate: a strong representation system for networking policies. *In Proceedings of the SIGCOMM '21 Poster and Demo Sessions (SIGCOMM '21)*
- Bin Gui, **Fangping Lan**, and Anduo Wang. 2022. Flexible Routing with Policy Exchange. *In Proceedings of the 5th Asia-Pacific Workshop on Networking (APNet '21)*
- W. Zhang, J. Wang and **F. Lan**, "Dynamic Hand Gesture Recognition Based on Short-Term Sampling Neural Networks", *IEEE/CAA Journal of Automatica Sinica 2020*

Work experience

- **Applied Scientist Intern**   June 2025 – Sept. 2025

Company: Amazon Web Services, Arlington, VA

Project Description: This internship project addresses critical challenges faced by incident responders investigating potential security incidents. Specifically, it targets three key pain points: manual and repetitive search processes across multiple log sources, inefficient search strategies when confronting complex and novel security patterns, and the overwhelming challenge of analyzing large data volumes during time-sensitive investigations. This project will developing an agentic search system that can (1) automate repetitive search tasks across multiple log sources; (2) process natural language queries from security analysts; (3) provide consistent, evidence-based findings.

Skills: LLM, LLM agent, Bedrock API, Strands SDK, Ollama, DuckDB, Python

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Project experience

- **Constraint-Aware Database Tuning**   Sept. 2025 – now

Project description: Developed a database tuning approach that incorporates explicit knob dependency and constraint rules into Bayesian Optimization–based tuning, reducing reliance on pure trial-and-error. By leveraging documented system knowledge, the method avoids invalid or suboptimal configurations and accelerates convergence to high-performance settings.

Skills: Python, GPT-5, Information Retrieval(IR), Bayesian Optimization, Parameters Tuning, PostgreSQL, Benchbase

- **Many-Shot In-Context Learning for Named Entity Recognition**   Sept. 2025 – now

Project description: Investigated many-shot in-context learning for Named Entity Recognition, showing that scaling to hundreds of demonstrations enables LLMs to match or surpass fully supervised BERT models. Further demonstrated that many-shot ICL can serve as an effective data annotation framework, generating high-quality labels that yield significant F1 improvements for low-resource NER when used to fine-tune BERT.

Skills: Fine-tune BERT, LLM, NER, Many-Short In-Context Learning(ICL)

- **LLM is A Database Tuning Expert**   Sept. 2024 – Sept. 2025

Project description: Our hypothesis is that LLMs have good capability to tune database since they studied DB tuning expert's experience stored in text, e.g., manuals, blogs, forums, and LLMs can be an agent to interact with DB to optimize configurations. Thus, LLM is a database tuning expert.

Skills: Python, GPT-4, Agentic Reinforcement Learning (RL), Agentic Tuning, PostgreSQL, MySQL, Benchbase

- **One Document, Many Revisions, Too Many Edit Intention Taxonomies**   Sept. 2023 – now

Project 1 – Edit Intention Taxonomies Construction: We studied existing work to explore the intention behind the edits from the original and revised text. We integrated all proposed edit intention taxonomies into a comprehensive edit intention taxonomy that spans multiple application domains and analytical aspects.

Website: https://sites.google.com/view/dmlab-unit/home

GitHub: https://github.com/lanfangping/UniT-EditIntentionTaxonomy

Project 2 – A Survey of Edit Intentions, Methods, and Applications: Conducted the first survey of text revision research from an edit-intention perspective, unifying datasets, taxonomies, identification methods, and applications. Synthesized the end-to-end revision workflow and highlighted key applications and open research challenges in NLP.

- **Pyotr: Tableau as a network representation for deep analysis**   Jan. 2021 – July 2023

Skills: Python, SQL, PostgreSQL, Tableau, Homomorphism

- **Fauré: A partial approach to network analysis**   Sept. 2021 – Dec. 2021

Project description: Fauré, a preliminary design in which a datalog extension (called fauré-log) for incomplete information is developed to enable loss-less modeling, and combined with static analysis of pure datalog to implement example relative-complete verifiers.

Skills: Python, SQL, PostgreSQL, fauré-log

- **Sarasate: A strong representation system for network policies**   June 2021 – Sept. 2021

Project description: we adopt conditional tables and the usual SQL interface (a relational structured developed for incomplete database) as a means to represent and query sets of network states in exactly the same way as a single definite network snapshot.

Skills: Python, SQL, PostgreSQL, conditional tables

Demo: https://www.youtube.com/watch?v=w9nH2et3zdI (short version), https://drive.google.com/file/d/1KcZKSrbqUhAxqfU4tFIE9Vd2WlOt87LW/view (long version)

Website: http://ravel-net.org/

- **Hand Gesture Recognition**   Sept. 2019 – Dec. 2020

Project description: It recognizes the dynamic hand gesture base on a webcam. The hand gesture types include swiping left, swiping right, swiping down, swiping up, pushing hand away, pushing hand in, turning hand clockwise, turn hand counterclockwise, thumb up, thumb down, shaking hand, drumming fingers, stop sign and so on.

Skills: Python, PyTorch, OpenCV, PIL, CUDA, 3D Convolutional Neural Network, Flask, HTML/CSS, JavaScript/jQuery

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Project demo video: https://youtu.be/gBE7cOssUbI, https://youtu.be/bSkLH-Ng0D8

- **Photovoltaic power generation prediction based on LSTM**   Oct. 2018 – May 2019

Project description: Predicting the short-term or ultra-short-term photovoltaic power based on LSTM. This project has been applied into DAQUAN Research Institute.

Skills: Python, HTML, JS, Flask, LSTM, RNN

Training dataset: the dataset of one-year history photovoltaic power and weather condition provided from DAQUAN Research Institute.