




Cheryl LEE (Baitong)

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EDUCATION

- The Chinese University of Hong Kong** Hong Kong SAR
Ph.D. - Computer Science and Engineering; Supervisor: Prof. Michael R. Lyu Aug 2022 – Present
 - Research Interest:** Developing deep learning-based / optimization models to facilitate the reliability of cloud-scale software systems (AIOps).
 - Highlighted Courses:** Foundations of Optimization, Graph Mining, Natural Language Processing, Data Science in Economics.
- Cornell University** NYC, U.S.
Master - Operation Research & Information Engineering; GPA: 3.9/4.0 (Rank Top 1%) Aug 2021 – June 2022
 - Highlighted Courses:** Applied Machine Learning, Deep Learning, Optimization Methods, Modeling Under Uncertainty, E-Logistics.
- Peking University** Beijing, China
Bachelor - Computer Science & Technology; GPA: 3.5/4.0 (Rank Top 30%) Aug 2016 – June 2020
 - Highlighted Courses:** Probability Theory, Statistics, Game Theory, Applications of Big Data Techniques, Database Systems, Data Structure and Algorithm, C++ Programming.

EXPERIENCE

- The Chinese University of Hong Kong** Hong Kong SAR
Research Assistant Jul 2021 - Jul 2022
 - Cross-modal Anomaly Detection:** Proposed a cross-modal attention-based approach to fuse text-based logs and multivariate metric time series for heterogeneous anomaly detection. Published a conference paper in ICSE'2023.
 - Microservice Root Cause Localization:** Proposed a multi-modal GNN-based approach to troubleshoot microservices, which integrates anomaly detection and root cause localization into an end-to-end framework. Published a conference paper in ICSE'2023.
- Apple Inc.** Beijing, China
Machine Learning Engineer (Internship) Jul 2020 - Dec 2020
 - Log Anomaly Detection:** Proposed an unsupervised “Gradual Clustering” log parser; Designed a Transformer-based detector and achieved over 98.29% top-1 accuracy.
 - Duplicated Issue Identification:** Proposed a document-level algorithm based on Longest Common Substring to identify duplicated issues.
- Deloitte Touche Tohmatsu CPA Ltd.** Beijing, China
Risk Analyst (Internship) Jul 2019 - Sep 2019
 - Report Analysis Automatization:** Leveraged BiLSTM-CRF to recognize name entities and extract relationships from the financial reports; Aligned the entities via BIRCH clustering.
 - Company Measurement:** Devised a measurement system to evaluate the operation and potential of focused electric companies.
- Baidu Inc.** Beijing, China
Data Analyst (Internship) Jul 2018 - Sep 2018
 - User Demand Incubation:** Incubated a traffic routing function by monitoring and mining behavior logs of users interacting with a voice-assisted smart device. The function's Page View achieved the top 5.
 - Market Performance Investigation:** Investigated and reported the market performance of the low-price selling strategy of similar devices.

SKILLS

- Coding:** Python (proficient), C++, SQL **Frameworks:** PyTorch, Pandas, Spark
- Modeling:** Deep Learning, Machine Learning
- Languages:** English, Mandarin

PUBLICATIONS

- 1 C. Lee, T. Yang, Z. Chen, Y. Su, Y. Yang, and M. R. Lyu, "Hades: Heterogeneous anomaly detection for software systems via semi-supervised cross-modal attention," in *Proceedings of IEEE 45th International Conference on Software Engineering*, 2023, [CCF-A].
- 2 C. Lee, T. Yang, Z. Chen, Y. Su, and M. R. Lyu, "Eadro: An end-to-end troubleshooting framework for microservices on multi-source data," in *Proceedings of IEEE 45th International Conference on Software Engineering*, 2023, [CCF-A].
- 3 C. Lee, T. Yang, Z. Chen, Y. Su, and M. R. Lyu, "Maat: Performance metric anomaly anticipation for cloud services with conditional diffusion," in *Proceedings of IEEE/ACM 38th International Conference on Automated Software Engineering*, 2023, [CCF-A].
- 4 Y. Huo, Y. Su, C. Lee, and M. R. Lyu, "A semantic-aware parsing approach for log analytics," in *Proceedings of IEEE 45th International Conference on Software Engineering*, 2023, [CCF-A].
- 5 C. Lee, Z. Zhu, T. Yang, Y. Su, and M. R. Lyu, "Spes: A differentiated scheduler for optimizing serverless function provision," in *Proceedings of IEEE 46th International Conference on Software Engineering*, 2024, [Under Review].
- 6 T. Yang, C. Lee, J. Shen, Y. Su, Y. Yang, and M. R. Lyu, "Managing service dependency for cloud reliability: The industrial practice," in *Companion Proceedings of IEEE 33rd International Symposium on Software Reliability Engineering*, 2022, [CCF-B], pp. 67–68. [DOI: 10.1109/ISSREW55968.2022.00041](https://doi.org/10.1109/ISSREW55968.2022.00041).
- 7 T. Yang, C. Lee, J. Shen, Y. Su, Y. Yang, and M. R. Lyu, "An adaptive resilience testing framework for microservice systems," in *arXiv preprint*, 2022. [URL: https://arxiv.org/abs/2212.12850](https://arxiv.org/abs/2212.12850).
- 8 F. Liu, Y. Yin, and B. Li, "A novel probabilistic framework with interpretability for generator coherency identification," *International Journal of Electrical Power & Energy Systems*, vol. 143, p. 108 474, 2022, [SCI-Q1], ISSN: 0142-0615.
- 9 F. Liu, Y. Li, B. Li, J. Li, and H. Xie, "Bitcoin transaction strategy construction based on deep reinforcement learning," *Applied Soft Computing*, vol. 113, p. 107 952, 2021, [SCI-Q1], ISSN: 1568-4946.

PATENTS

- 1 M. Lyu, B. Li, T. Yang, Z. Chen, and Y. Su, "A microservice fault diagnosis method and system," CN202211368449.4, 2022.
- 2 Z. Yang, F. Liu, and B. Li, "A faster-than-real-time observation and analysis method of voltage quality based on fpga," 2 022 109 279 359, 2022.
- 3 B. Li, F. Liu, H. Xie, W. Qi, and T. Yuan, "Big data analysis platform for ac / dc power grid with a high proportion of alternative energy," CN2020SR1652151, 2020.
- 4 Q. Shi, B. Li, F. Liu, H. Xie, and J. Zhai, "The platform for the intelligent identification of coherency generator clusters in the power system," CN2020SR1740513, 2020.

HONORS AND AWARDS

• Honors

- **Postgraduate Studentship**, The Chinese University of Hong Kong 2022
- **Merit Scholarship**, Cornell University 2020

• Competitions Awards

- **National 3rd Prize**, The 17th Challenge Cup 2021
- **First Prize**, The 4th Baidu star entrepreneurship competition 2020
- **Meritorious Winner**, Mathematical Contest in Modeling 2018

ACTIVITIES

- **Teaching Assistant:** (CSCI3100) Software Engineering, (CSCI2720) Building Web Applications 2022-2023
- **Ethnic Minority (Manchu) Culture Communication Club:** Founder 2018-2020