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Yutong Cheng

EDUCATION

Department of Computer Science, Virginia Tech

Ph.D. in Computer Science

VA, United States 2024 - present

- Advisor: Dr. Peng Gao
- Research area: Application and customization of LLMs to empower knowledge-intensive and complex applications in security and software engineering

School of Software Engineering, Beijing Jiaotong University B.E. in Software Engineering

Beijing, China 2018 - 2022

PUBLICATIONS

- 1. Yutong Cheng, Osama Bajaber, Saimon Tsegai, Dawn Song, Peng Gao. CTINexus: Leveraging Optimized LLM In-Context Learning for Constructing Cybersecurity Knowledge Graphs Under Data Scarcity. arXiv:2410.21060 (Under peer review), 2024.
- 2. Xu, Junjielong and Fu, Qiuai and Zhu, Zhouruixing and Cheng, Yutong and Li, Zhijing and Ma, Yuchi and He, Pinjia. Hue: A user-adaptive parser for hybrid logs. Proceedings of the 31st ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), 2023.

INTERNSHIPS & EXPERIENCE

Llama Family | Algorithm Developer

2023.09 - 2023.12

- Fine-tuned Llama2-Chat model with Chinese datasets to enhance Chinese conversational abilities.
- Integrated LangChain framework to improve model performance in Chinese applications.

AtomEcho | Algorithm Developer

2023.06 - 2023.09

- Developed a framework (AtomTool) for integrating tool utilization skills into LLMs.
- Implemented API integrations to enhance LLM's tool usage capability, improving LLM accuracy in handling complex API parameter settings.
- Reduced the hallucination phenomenon by refining prompt design and retrieval methods, improving LLM response accuracy and reliability.

Chinese University of Hong Kong (Shenzhen) | Research Assistant 2022.09-2023.06

- Collaborated with a cloud company to collect and curate log data from multiple departments, enabling comprehensive log analysis.
- Developed a two-step log grouping algorithm combining coarse- and fine-grained techniques, utilizing a multinomial search tree for efficient template extraction.
- Designed a template updating mechanism that incorporated human feedback to resolve ambiguous tokens, enhancing overall system accuracy.

Yuewen Group, Tencent | Backend Developer

2020.06 - 2020.09

- Developed dynamic UI customized to user interests, integrating real-time content recommendation statistics.
- Created responsive framework to adjust interface content based on user click feedback.

• Bitshares Fellowship, for smart-contract-related research project

2024.09

• Virginia Tech CS Departmental Travel Grant

2024.06

• CCI SWVA Cyber Innovation Scholarship, for CTI-related research project 2024.03

- Student Organizer, for the 2024 DMV Security Workshop.
- External Reviewer, for NDSS 2025, ACM CCS 2024, DLSP 2024, TOPS 2023, IEEE EuroS&P 2024

AWARDS & HONORS

PROFESSIONAL SERVICES