Fujiao Ji

Email: fji1@utk.edu

Research Interests

Adversarial Attack & Defense; Web Security & Phishing Detection; LLM Security

Education

- **University of Tennessee, Knoxville** — Knoxville, Tennessee, USA
  Fourth Year Ph.D. student majoring in Computer Science — *Aug. 2022 - Present*
- **Shandong University of Science and Technology (SDUST)** — Qingdao, China
  Master of Computer Software and Engineering — *Sept. 2018 - June 2021*
  - **GPA:** 88.41/100
  - **Coursework:** Applied Statistics, Data Mining, Machine Learning, Big Data Analysis, Distributed Systems, Advanced Computer Architecture, Software Modeling Technology, Cloud Computing
  - **Teaching Assistant:** Discrete Mathematics

Experience

- **Research Assistant — Phishing Website Detection and Defense** — Knoxville, USA
  College of EECS, UTK, directed by Dr. Doowon Kim — *Aug. 2022 - Present*
  - Conducted a comprehensive measurement study of the performance of visual-based anti-phishing traditional models.
  - Investigated the performance of LLM-based detection models.
  - Investigated the characteristics of LLM-based phishing generation models.
- **Research Intern — Chinese Address Parsing Project** — Beijing, China
  Baidu Map, directed by Dr.Yibo Sun and Dr. Lei Shao — *June 2021 - Jan. 2022*
  - Extracted and structured address data in the format of province, city, district, town, and point of interest;
  - Recognized the named entity through a biaffine attention mechanism based on the pre-trained model ERNIE 1.0 under the framework of PaddlePaddle and improved the performance via post-processing processes;
  - Evaluated the performance of point of interest chunks, where the F1 score is 81.25% for 1,000 real-world data from Baidu Map and 80.41% for 2,985 public data from Chinese Address Corpus.
- **Research Assistant — Heterogeneous Networks Analysis** — Qingdao, China
  College of Computer Science and Engineering, SDUST, directed by Prof. Zhongying Zhao — *Sept. 2018 - June 2019*
  - Conducted literature reviews on the work related to heterogeneous networks;
  - Made a comparative study on heterogeneous networks and classified them into four categories according to topological and attribute information.

Projects

- **Evaluating the effectiveness and robustness of visual-based anti-phishing models** — Knoxville, US
  Research project with Dr. Doowon Kim, UTK — *Aug. 2022 - Dec. 2024*
  - Collected 451k real-world phishing websites from APWG;
  - Evaluated the performance of visual-based anti-phishing models in a large-scale real-world dataset and found the causes of failures for different models;
  - Constructed a small dataset using various manipulations identified in the collected data to assess model robustness under coarse-grained and fine-grained settings.
- **Evaluating LLMs-based anti-phishing models** — Knoxville, US
  Research project with Dr. Doowon Kim, UTK — *Nov. 2024 - Jun. 2025*
  - Investigated the inherent knowledge and reasoning capabilities of LLMs in detecting phishing websites
  - Investigated whether LLM-based phishing detectors outperform traditional deep learning models
  - Investigated the impact of individual and combined components (e.g., screenshots, logos, HTML, and URLs) on LLM-based phishing detection;

Publications and Manuscripts

- **Ji, F.** and Kim, D. Anonymous. Under review (2026).
- **Ji, F.**, Lee, K., Koo, H., You, W., Choo, E., Kim, H., and Kim, D. Evaluating the Effectiveness and Robustness of Visual Similarity-based Phishing Detection Models. USENIX (2025).
- **Ji, F.**, Zhao, Z., Zhou, H, Chi, H. A Comparative Study on Heterogeneous Information Network Embeddings. Journal of Intelligent & Fuzzy Systems. 39(3): 3463-3473 (2020).

Skills

- **Programming:** Python, C
- **Frameworks:** Pytorch, PaddlePaddle
- **Tools:** LaTex, iCoding, Visual Studio Code, Jupyter, Adobe Photoshop, Microsoft Visio, AxMath