Ezra Fu

Email: codeplay0314@gmail.com
Mobile: (412) 295-9798

Seeking 2024 Summer SDE and MLE Internship Opportunities

EDUCATION

Carnegie Mellon University   Pittsburgh, Pennsylvania
Master of Science in Information Networking   *Jan. 2023 – Dec. 2024*

- **GPA: 4.0** | Courses: Natural Language Processing, Introduction to Computer Systems, Distributed Systems, Introduction to Machine Learning, Fundamentals of Telecommunications Networks
- TA for 11-411/611 (NLP); Graduate Student Assembly Rep; Graduate Organization @INI Co-Chair

Fudan University   Shanghai, China
Bachelor of Science in Computer Science and Technology   *Sep. 2018 – Jun. 2022*

- **Excellent Graduate** of Fudan University, 2022; Outstanding Student Scholarship, 2018 – 2019, 2020 – 2021, 2021 – 2022
- **Silver Medal** in the 2020 International Collegiate Programming Contest (ICPC) Asia-East Continent Final Contest, Feb. 2021
- **Gold Medal** in the 2020 International Collegiate Programming Contest (ICPC) Asia Regional (Shanghai), Dec. 2020

PROFESSIONAL EXPERIENCE

Bilibili Group (NASDAQ: BILI)   Shanghai, China
Machine Learning Engineer Intern, AI Tech Dept.   *May 2021 – Jun. 2022*

- Maintained bilibili's recommender system using C/C++, handling over 1 billion daily requests.
- Contributed to numerous projects, focusing on re-ranking and diversity control strategies, to enhance user experiences.
- Devised three innovative approaches to match candidates for the recommender system, boosting CTR by 1%, 3%, and 1%:
  - Identified potential episodes from video series by analyzing patterns in video titles using sequence-to-sequence models.
  - Applied GNN to find related videos with similar embeddings using data processed by Airflow, MapReduce, and Bash.
  - Utilized BERT model in TensorFlow with HNSW algorithm to match cold-start videos having similar titles.
- Established BI for recommender system with Presto and Hive, supplying vital data for weekly meetings and user-growth strategies.

ByteDance (Parent company of **TikTok**)   Shanghai, China
Software Engineer Intern, Data Dept.   *Jan. 2021 – Apr. 2021*

- Improved feed request access across platforms (*TikTok*, *Douyin*, etc.) to the advertising system's landing page optimization service using C/C++ on Linux servers, resulting in a 1% higher conversion rate and enhanced user experiences.
- Implemented and deployed an online FreeType mechanism to support 40+ additional languages for the image rendering service targeting international advertisers.

Fudan University   Shanghai, China
Undergraduate Research Assistant, SONIC laboratory   *Apr. 2019 – Feb. 2022*

- Conducted research to investigate the structural hole theory on the GitHub interaction network.
- Executed advanced graph algorithms on real-world networks with over 6 million nodes using C++.
- Processed, visualized, and analyzed graph-related data with Python and MATLAB, leading to meaningful findings.
- **Publication**: *Understanding the User Interactions on GitHub: A Social Network Perspective*, CSCWD'21

PROJECTS

Hypergraph Attention Graph Neural Networks   *Graduation Study, Fudan University, Spring 2022*

- Developed an end-to-end click-through rate prediction model based on attention mechanism in hypergraph neural networks.
- Implemented the model by Keras API in Python, achieving higher AUC than other state-of-the-art models on real-world datasets.

Bursty Event Detection in News Streams   *Fudan University, Fall 2021*

- Adapted the batch bursty event detection algorithm from VLDB'05 for streaming data and implemented it in Java.
- Built distributed clusters using Hadoop/Zookeeper/HBase environment for Apache Storm to process data streams.
- Proposed practical optimizations, improving efficiency (2.5x data processing speed) and feasibility.

SKILLS

- **Programming Languages & Tools**: C/C++, Python, Go, Java, SQL, JavaScript, HTML/CSS, MATLAB, Linux, Git, Docker, Bash
- **Data Technologies**: MySQL, Redis, Neo4j, Hadoop (HDFS, MapReduce), Hive, Presto, Airflow, Kafka, Storm, Zookeeper
- **Machine Learning Frameworks**: PyTorch, TensorFlow, Keras

AWARD

- Dec. 2016 - **First Prize** of the National Olympiad in Informatics in Provinces (NOIP 2016)