Erzheng (Ezra) Fu

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Seeking 2023 Summer SDE and MLE Internship Opportunities

EDUCATION

Carnegie Mellon University Pittsburgh, Pennsylvania
Master of Science in Information Networking *Jan. 2023 – May 2024*
- GPA: 4.0 | Courses: Natural Language Processing, Distributed Systems, Introduction to Computer Systems

Fudan University Shanghai, China
Bachelor of Science in Computer Science and Technology *Sept. 2018 – June 2022*
- Awarded Excellent Graduate of Fudan University, 2022

PROFESSIONAL EXPERIENCE

Bilibili Group Shanghai, China
Algorithm Engineer Intern, AI Tech Dept. *May 2021 – June 2022*
- Maintained bilibili's recommender system using C/C++, handling over 1 billion daily requests every day
- Collaborated on multiple projects, including re-ranking and diversity control strategies, to optimize user experiences
- Developed three approaches to match candidates for the recommender system, increasing CTR by 1%, 3%, and 1%:
  - Detected potential episodes from video series using data processed by Airflow, MapReduce, Bash, etc.
  - Employed GNN to find associated videos with similar embeddings based on user behavior graphs built in C++
  - Matched cold-start videos with similar titles using BERT model implemented in TensorFlow
- Designed and implemented business intelligence (BI) for the recommender system using Presto and Hive, providing valuable data support 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 from various 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

Relational and Non-Relational Databases: A Data-Driven Study *Fudan University, Fall 2020*
- Tested basic and complex database operations on multiple databases using Python client libraries
- Analyzed the performance of MySQL, Redis, and Neo4j under various conditions using massive public GitHub user behavioral data and identified their applicable scenarios

SKILLS

- **Programming Languages & Tools**: C/C++, Python, 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

AWARDS AND HONORS (SELECTED)

- Feb. 2021 - **Silver Medal** in the 2020 International Collegiate Programming Contest (ICPC) Asia-East Continent Final Contest
- Dec. 2020 - **Gold Medal** in the 2020 International Collegiate Programming Contest (ICPC) Asia Regional (Shanghai)
- Dec. 2016 - **First Prize** of the National Olympiad in Informatics in Provinces (NOIP 2016)