Erzheng Fu

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EDUCATION

Carnegie Mellon University Pittsburgh, United States
Master of Science in Information Networking *[Expected] Jan. 2023 – May 2024*

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

PROFESSIONAL EXPERIENCE

Bilibili Group Shanghai, China
Algorithm Engineer Intern, AI Tech Dept. *May 2021 – June 2022*
- Maintained the recommender system of bilibili with C/C++, which responds to more than 1 billion requests every day
- Worked on multiple projects including re-ranking, diversity control strategies, etc., cultivating optimization of user experiences
- Developed several approaches to match candidates for the rec system, increasing the CTR by 1%, 3% and 1% respectively:
  - detected potential episodes from video series using data processed by Airflow, MapReduce, Bash, etc.
  - employed GNN to discover associated videos by similar embeddings based on user behavior graphs built with C++
  - matched videos with similar titles for cold start using the BERT model realized by TensorFlow
- Designed and achieved business intelligence (BI) from scratch for the rec system based on Presto and Hive, providing significant data support for weekly convo and user-growth strategy meetings and being referred to in company-level reports

ByteDance (Parent company of **TikTok**) Shanghai, China
Software Engineer Intern, Data Dept. *Jan. 2021 – Apr. 2021*
- Accessed feed requests from different platforms (*TikTok*, *Douyin*, etc.) to the advertising system's landing page optimization service on Linux servers with C/C++, achieving a 1% higher conversion rate and offering better user experiences
- Implemented and deployed online a mechanism by FreeType to support fonts in 40+ more languages on the online image rendering service for international advertisers

Fudan University Shanghai, China
Undergraduate Research Assistant, SONIC laboratory *Apr. 2019 – Feb. 2022*
- Conducted research to look into the structural hole theory on the GitHub interaction network
- Implemented advanced graph algorithms on real-world networks with more than 6 million nodes using C++
- Processed, visualized and analyzed graph-related data with Python and MATLAB, to obtain a series of meaningful discoveries
- 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*
- Proposed an end-to-end click-through rate prediction model, based on attention mechanism in the hypergraph neural networks
- Implemented the model by Keras API in Python and achieved higher AUC than other state-of-art models on real-world datasets

Bursty Event Detection in News Streams *Fudan University, Fall 2021*
- Transformed the batch busty event detection algorithm proposed by *Parameter Free Bursty Events Detection in Text Streams, VLDB'05*, making it applicable for streaming data, and implemented it in Java
- Built distributed clusters with Hadoop/Zookeeper/HBase environment for Apache Storm to process streams of data
- Proposed several practical optimizations to improve both efficiency (2.5x data processing speed) and feasibility

Relational and Non-Relational Databases: A Data-Driven Study *Fudan University, Fall 2020*
- Used Python client libraries to test basic database operations and designed complex ones on multiple databases
- Analyzed the performance of three databases, MySQL, Redis and Neo4j, under different circumstances with massive public user behavioral data on the GitHub platform and concluded their applicable scenarios

SKILLS

- **Programming Languages**: C/C++, Python, Java, SQL, JavaScript, HTML/CSS, MATLAB, LaTeX
- **Development Tools**: Linux, Bash, Git, GDB, Docker, Jupyter Notebook
- **Tech Stack**: MySQL, Redis, Hadoop (HDFS, MapReduce), Hive, Neo4j, Presto, Airflow, Kafka, Storm, TensorFlow

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)