Yuxiao Li

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EDUCATION

Rensselaer Polytechnic Institute — NY, US
B.S. in Computer Science — *Sept 2019 - May 2023*

Courses: *Software Design & Documentation, Programming Languages, Data mining, Database Systems, Intro to Machine Learning Applications, Frontiers of Network Science, Graph Theory, Intro to AI, Machine Learning & Optimization*

EXPERIENCE

Oxford University — Remote
Research Assistant, Supervisor: Dr. Jing He — *June 2022 - Jan 2023*

- **Medical Knowledge Graph Construction and Function Test**:
  Constructed a comprehensive knowledge graph for faster medical information search;
  Managed complex data including data preprocessing via NLP techniques, data merging, and database management;
  Verified the connectivity of the knowledge graph to ensure its structural correctness;
  Tested the effectiveness of the knowledge graph by investigating correlations between the returned results and real-world clinical manifestations, providing insights into real-world applications.
- **Knowledge Graph-based Question Answering System**:
  Outlined the structure and functionality of a question answering system based on the knowledge graph above;
  Demonstrated the significance of the question answering system in enhancing information retrieval and user interaction.
- **Evaluation System Framework for AI Medical Diagnosis & Treatment**:
  Played a key role in developing a theoretical evaluation system framework for AI-assisted medical diagnosis and treatment, utilizing the Donabedian model, DeLone & McLean model, and the Delphi method;
  Presented the results and potential implications successfully at the ITQM 2022 conference.

Nanjing University of Post and Telecommunication - Big Data Institute — Yancheng, China
Research Assistant — *June 2020 - Aug 2020*

- **Data Analyses on Student Background and Expectations**:
  Analyzed the personal backgrounds of approximately **1000** students and their academic/career expectations to explore possible correlations.
- **Web Application for Daily Campus Notifications**:
  Designed and implemented a web application integrated with WeChat to provide daily campus notifications for approximately **500** students;
  Enabled real-time alerts and announcements, enhancing communication and engagement within the campus community.

Yijiahe Tech. Co. — Nanjing, China
Software Development Engineer (Full Time) — *Sept 2021 - Dec 2021*

- **Movement Control System of Fireman Robot**:
  Migrated movement control system of fireman robots from Spring Boot to GraalVM native images, improving application performance by **15%** and facilitating the integration of cross-language tools;
  Implemented back-end sensor controllers for signal analysis and reactions, contributing to a more responsive system.

PUBLICATION

- **Evaluation System Framework of Artificial Intelligence Applications in Medical Diagnosis and Treatment**:
  The 9th International Conference on Information Technology and Quantitative Management (ITQM 2022), Dec 2022

PROJECTS

- **AI Voice Converter Models (Librosa, Spleeter, Sovits)**:
  Developed AI voice converter models for transformation in audio pitches and tones by extending Sovits-4.0;
  Collected and preprocessed data with Librosa and Spleeter;
  Trained the model, achieving a distinctive synthesis that mimics the characters' unique vocal characteristics.
- **Network Analysis (SNAP, NetworkX, Scipy, Matplotlib)**:
  Conducted comprehensive analyses of network properties with SNAP and NetworkX;
  Visualized the analytical results and inferred underlying traits and patterns.
- **Data Analysis on Modeling and Evaluation (Sklearn, Seaborn, Tensorflow, NLTK)**:
  - **Data Analysis and Modeling**: Conducted data preprocessing, including Natural Language Processing (NLP), and variable correlation analysis on a Kaggle dataset. Implemented ensemble modeling to enhance prediction accuracy.
  - **Model Analyses and Evaluation**: Evaluated multiple modeling approaches to assess performance and identify optimal solutions. Delivered a clear summary presentation, conveying key findings to stakeholders.
- **Tower Defense Game Simulator (Unity)**:
  - **Feature & UI Designing, Documenting, and Sprint Scheduling**: Designed the features and user interfaces for the simulator. Authored comprehensive documentation including vision statements, testing protocols, and release notes. Coordinated and scheduled weekly sprint meetings to ensure alignment and progress.
  - **BackEnd Programming**: Implemented the back-end structure design, coding, and testing, ensuring consistency and quality. Monitored coding and commenting styles to maintain adherence to development standards.

SKILLS SUMMARY

- **Languages:** Python, Java, C/C++, R, JavaScript, HTML, CSS, SQL, Latex, Golang
- **Frameworks:** sklearn, NLTK, TensorFlow, NetworkX, NodeJS, Vue, Spring
- **Tools:** Git, PostgreSQL, MySQL, GraalVM