Yan Xu

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Education

- Ph.D. in Chemical Engineering, Rice University, Houston, TX — May 2021
- Master in Computer Science, Rice University, Houston, TX — expected May 2023

Professional Experience

Software Engineer Intern, Chevron, Houston, TX — Summer 2022

- Implemented identity management (authentication and authorization) to APP in Azure DevOps
- Deployed the APP using continuous integration (CI) and continuous delivery (CD) in Azure and container
- Documented the Authentication and Azure pipeline deployment for Python-flask application and provided a training session to fellow software engineers, pipeline engineers, and managers
- Design the full-stack demo for APP using ASP.net, Angular, and SQL database in Azure, allowing pipeline engineers to upload JSON files in the front end and store the file automatically to the SQL database in Azure

Research Scientist, Baker Hughes, Houston, TX — May 2015-May 2019

- Designed new algorithms to select high-efficiency chemicals, which improved oil production by 70%
- Built an automated workflow to test the chemical features using the empirical datasets and modeling
- Presented scientific findings to CEO, CFO, CTO, and managers, and published 3 research articles in top journals

Computation Skills

- **Programming Language:** Java, Python, SQL, Non-SQL, JavaScript , HTML, CSS, C++, C#, .net, Angular
- **Certificates:** Full Stack Developer (Udacity); Data Analytics (Rice University)

Selected Projects

Object-oriented Design Project - Pac-Man Game (webPage)

- Developed a Pac-Man game in Java, allowing users to select difficulty levels, map themes, and Pac-Man lives to start the game. Built portals where Pac-Man can be transported to different locations after entering
- Designed the model with design patterns (such as strategy and observer design pattern) and applied for breadth-first search(BFS) algorithm in ghosts chasing strategies, and tested code with JUnit
- Enhanced user-friendly view with canvas scale/translate, HTML radio input type, CSS hover styling, and JQuery

AWS Cloud Project - Covid-19 Cases in Texas Daycare (GitHub)

- Developed a web APP in Python to present the latest covid-19 cases in Texas Daycare with
- Constructed the model with Postgresql and SQLAlchemy, built the controller with flask and REST API, and designed the view with JSON Web Token (JWT) and Auth0
- Deployed the APP using CI &CD in AWS, Docker container, Kubernetes, and container orchestration platforms

Full-Stack Project - Immigration Statistics in the USA (webPage)

- Developed a web APP in Python, allowing the users to visualize the statical immigration data with heatmap and histogram. Data includes the origin countries, immigrating population, and the top 10 cities in the USA.
- Built the data pipeline with the ETL method, loading data to SQLite and visualizing the data with D3 and Plotly

Deep Learning Projects - Voice Recognition (GitHub) & **Natural Language Processing** (GitHub)

- Built a deep learning model for automatic speech recognition (ASR) to predict the gender of a person based on the acoustic properties of the voice, using 3000+ voice records in 22 different features with Keras and Tensorflow
- Built a suite of NLP tools for Text Classification, Document Search, Named Entity Recognization(NER), and Parts of Speech Tagging, using unsupervised learning, vectorization, and Spacy pre-trained NER and POS tagger

Selected Research Publication and Personal Contribution

- **Y Xu,** et al. Heavy Oil Viscosity Reduction Using Palladium Acetylacetonate, *Fuel*, 294, 120546, 2021
- **Y Xu,** et al. Understand Heavy Oil Viscosity Reduction Using Iron (III) Tosylate, *Fuel*, 274, 117808, 2020
- **Y Xu**, et al. Heavy Oil Viscosity Reduction Using Iron III para-Toluenesulfonate, SPE-190020-MS

*Served as the first author for the above papers, participated in the problem-solving process: including developing hypothesis, designing and performing the experiment, and writing the research article