

# Tianze (Eric) Qian

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## EXPERIENCE

**Pioneer Natural Resources**, Irving, TX

Feb 2022 - Present

*Senior Data Scientist*

- Design and deploy to optimization tool to schedule completions, reducing operations time by ~5 hours
- Develop statistical methods for LDAR program optimization and methane sensing, reducing fieldwide emissions by ~10%
- Research ML-driven oil and gas production forecasting to improve accuracy with novel Bayesian approach
- Conduct engineering ML feature analysis to recommend completions designs improving production by ~10%
- Improve database standards and develop data pipelines for scalable ingestion, automating over 1000 manhours/year
- Lead Pioneer data science knowledge-sharing with Data Engineering 101 class, algorithm studies, and domain expertise
- Utilize stack including Azure services, Azure DevOps, hybrid cloud deployment, and Kubernetes/Docker containerization

**Kayrros**, Houston, TX

March 2020 – Feb 2022

*Data Engineer*

- Developed commercial product transforming anonymized geolocation signals to mileage and fuel consumption datasets
- Created scalable asset monitoring product implementing change detection algorithms on geospatial imagery data
- Computed metrics and classification algorithms against TB-volume geolocation dataset – leveraging PySpark, Hadoop, S3
- Deployed and automate several projects via Airflow, Kubernetes, Docker, and GitLab CI/CD in production environments
- Designed, documented, and functionalized multiple client REST/Python APIs to provide data service
- Wrote and published weekly newsletters of fundamental analysis of fuel demand to clients

**Apache Corporation**, San Antonio, TX

Dec 2017 – March 2020

*Data Scientist, Analytics Engineer*

- Engineered and deployed regression models of wellbore drilling costs to improve capital allocations accuracy by 20%
- Engineered and deployed classification models on invoice AFEs to improve invoice routing accuracy by 40%
- Implement parallelized algorithms ETL/visualization processes on 600 TB fiber optic data for frontend Dash application
- Implement and scale Airflow data pipelines to create ETL processes against OSI Pi, Hadoop/Hive, REST APIs, etc.
- Developed high-frequency drilling data project of 10 automated statistical reports with over \$500K annual market value
- Developed Python reporting library to facilitate automated HTML e-mailing and PDF generation built on jinja2 and reportlab

## EDUCATION

**University of Texas at Dallas**

MBA, Energy Management & Entrepreneurship

August 2023

GPA: 3.94/4.00

**Georgia Institute of Technology**

MS, Data Science & Analytics, Computational Data Analytics

August 2021

GPA: 4.00/4.00

**The University of Texas at Austin**

BS, Petroleum Engineering, Honors Program

May 2018

GPA: 3.74/4.00

BA, High Honors, Economics

Minor in Computer Science

## PUBLICATIONS AND PARTICIPATION

(Co-Author) *In-situ water quality monitoring in oil and gas operations*, SPIE Defense & Commercial Sensing

June 2023

(Co-Author) *Comparison of Numerical LDAR Assessment Methods in Methane Detection Technologies*, URTEC

June 2023

(Volunteer) UT Energy Hackathon Mentor & Problem Architect

Jan 2023 - Present

## ADDITIONAL SKILLS

**Software:** Python, Azure, R, C++, Git, Linux

**Machine Learning:** Sklearn, PyTorch, supervised learning, reinforcement learning, Bayesian statistics, simulation

**Data Engineering:** Spark, PySpark, Airflow, Kubernetes, Docker, Elasticsearch, AWS S3, Hadoop, NoSQL, Database Design

**Application Development:** Streamlit, Dash, Plotly, Matplotlib, HTML, CSS, Django, FastAPI, REST API

**Interests:** Options trading, investing, producing music, basketball analytics, chess