

Technical Skills

PROGRAMMING LANGUAGES: Python | SQL | MATLAB

DATA SCIENCE & MACHINE LEARNING: Machine Learning (Scikit-Learn), Neural Networks and Deep Learning (PyTorch, TensorFlow, Keras), Computer Vision (OpenCV), Statistical Data Analysis and Hypothesis testing (SciPy, Statsmodels), Data Wrangling & Visualization (SQL, Numpy, Pandas, BeautifulSoup, Matplotlib, Seaborn, Tableau), Time Series Analysis, Natural Language Processing (spacy, nltk, regex), Distributed Version Control (Git), Distributed Computing (Spark), Orchestration (Databricks), Geospatial Data Analysis and Mapping (GIS, GeoPandas)

Education and Certificates

[Deep Learning Specialization](#) | DeepLearning.AI | February 2023

[Data Scientist Certification](#) – Fellowship Program | The Data Incubator | April 2022

Ph.D. in Civil & Environmental Engineering | University of California – Davis | 2011

B.S. in Chemical & Petroleum Engineering | Sharif University of Technology | 2004

Experience

University of California, San Francisco
Researcher

April 2023 _ Present

- Improving performance of a **Generative model** that uses a novel **Variational Autoencoder** (VAE) architecture to provide interpretable deep learning methods for medical imaging data ([link](#))
- Building the trust between medical practitioners and network's decision-making processes by providing interpretable AI

Freelance Data Scientist

Jan 2023 _ Present

- Trained a **Semantic Segmentation** model to extract key geologic features from historic USGS maps (Dice Coefficient = 0.89, Precision = 0.85, Recall=0.93). The model offers a fully operational approach for large-scale geologic feature extraction from diverse maps ([link](#))
- Sentiment Analysis of Yelp reviews ([link](#))
- Merchandise sale prediction/ retail demand forecasting Loan foreclosure prediction

THE DATA INCUBATOR

2022

Data Science Fellow

- Completed various real-world data science projects covering: Data Wrangling, Web Scraping, Graph Analysis, Machine Learning, Visualization, Time Series Analysis, Natural Language Processing, Distributed Computing, Neural Network
- Developed capstone project that uses machine learning to predict county_level daily COVID-19 case count in the State of California. Built a heroku app that provides model results to the end user. Detailed information can be found [here](#).

MONTGOMERY & ASSOCIATES

2014 – 2022

Engineering Consultant

- Developed highly parameterized conceptual flow models of regional and local groundwater basins
- Leveraged machine learning outcomes to evaluate and recommend groundwater management strategies. Delivered robust, sustainable decision-making support that served clean water to 1M+ residents in Northern California.
- Produced informative and visually compelling geospatial analysis products, maps, and web-based GIS applications in support of project development, planning, execution, and operations
- Scripted Python codes for efficient data wrangling, web scraping, exploratory data analysis and data visualization.
- Defined key performance metrics to provide business insights and to quickly and accurately provide stakeholders with relevant data and reports that drive decision-making processes.

UNIVERSITY OF CALIFORNIA – DAVIS

2005 – 2011

Research Assistant

- Calibrated a highly parametrized flow model of a local groundwater basin by leveraging supervised machine learning.
- Designed a 2-D motion model for the SFBF striped bass. Utilized the model to study the spatial and temporal contaminant uptake during the individual fish lifecycle.
- Performed integration, analysis, and synthesize of data from several open sources.