Duy Nguyen

U.S. Citizen

Programmer and Applied Mathematician with 3 years of experience in developing web applications and data modelling. Proficient in Python, SQL, R, and MATLAB. Intermediate level of AWS, Docker and MS PowerBI. Strong mathematical modeling and analytical skills with a Master in Computational and Applied Mathematics. Held a Secret Clearance during service in the Navy.

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EDUCATION

Master of Arts: Computational and Applied Mathematics
California State University, Fullerton

08/2019 - 01/2021   *GPA: 3.94/4.0*

Courses
- Advanced Linear Algebra and Applications
- Mathematical Modelling
- Machine Learning/ Data Analysis
- Parameter Estimation and Inverse Problems
- Scientific Computing and Applications
- Industrial Project in Computational Applied Mathematics (sponsored by NASA/JPL)

Bachelor of Arts: Applied Mathematics
California State University, Fullerton

08/2016 - 05/2019   *GPA: 3.68/4.0*

PROJECTS

Terrain Coverage Analysis Tool (NASA/JPL)
 (01/2020 - 05/2021)
- Led a team of graduate students to model, analyze and visualize the lunar terrain.
- Generated the regional dynamic simulation of the Sun illumination, Earth communication coverage, Lunar Relay Satellite communication.
- Visualized the terrain from a lunar asset including the Line-of-Sight communication, Sun Illumination, and Earth Visibility.
- Developed the Terrain Coverage Analysis Tool (TCAT) to incorporate all mathematical models and delivered it to NASA/JPL. It is still being developed at NASA/JPL to be used for NASA's future missions. This application is written in MATLAB.

Monitoring the effects of BMPs (Best Management Practices) across the U.S. (SCCWRP) (01/2020 - Present)
- Manage project tasks to develop a data analysis and management system with Python and Docker in order to collect the data from the environmental sensors recording the water's level, temperature, and other factors of the soil during dry and wet weather.
- Work with the U.S. Environmental Protection Agency (EPA) scientists and engineers to automate the process of checking the data flags in the raw data (indicating sensor's malfunction) and perform the statistical analysis on the raw data.
- Automate the process of storing the analyzed data in the cloud's database and sending reports to EPA.
- Develop a R-Shiny application to provide interactive dashboard for data visualization.

WORK EXPERIENCE

Programmer/Statistician
Southern California Water Research Agency

07/2022 - Present

Mathematician/ Predictive Data Analyst
Naval Air Weapons Station China Lake Department of the Navy

02/2022 - 07/2022

Achievements/Tasks
- Research and develop technologies to deliver advanced, integrated air warfare capabilities to ensure mission success for the Navy and Marine Corps team.
- Held a Secret Clearance during service time.
- Left due to a family situation

Research Technician
Southern California Water Research Agency

07/2019 - 02/2022   *3535 Harbor Blvd., Suite 110, Costa Mesa, CA 92626*

Computer languages Used: Python, R, SQL, HTML, CSS, JavaScript

Achievements/Tasks
- Develop and maintain website applications on AWS to automate the process of performing quality control on the metadata and lab data submitted by the research and development agencies
- Develop and manage SCCWRP's internal databases. Automate the process of pulling and syncing the data from multiple database's sources (MS Access, PostgreSQL, ArcGIS, etc. using APIs
- Work with the SCCWRP's scientists to develop reports and analyses to improve the management of aquatic systems in Southern California and beyond.
- Develop dashboards using R-Shiny/ Flask app to share insights with the clients and researchers from Southern California's wastewater treatment agencies, storm-water management agencies and water-quality regulatory agencies.

Contact : Paul Smith - pauls@sccwrp.org

COMPUTER SKILLS

Programming: Python (Pandas, Numpy, Scipy, Matplotlib, etc.), R (R-Shiny, etc.), MATLAB, SQL

PROJECTS

Violent Crimes Prediction (05/2020 - 07/2020)

- Led the team of three graduate students to obtain data from the University of California, Irvine Machine Learning Repository, performed Explanatory Data Analysis, Principal Component Analysis.
- Used Machine Learning methods (Linear Regression, Neural Network, Ridge and Lasso) to predict the number of crimes in the communities across the U.S.
- Applied clustering to place the communities into low-risk, high-risk groups based on multiple criteria.

COMPUTER SKILLS

Databases: PostgreSQL/pgAdmin, MongoDB, Extract-Load-Transform (ETL)

Front-end: HTML, CSS, Java-script

Visualization: Qlik/Dash Plotly

Version Control: Git/GitHub

Cloud Computing/Application Development: AWS/Docker