Duy Nguyen

U.S. Citizen

Applied Mathematician and Data Analyst with 3 years of experience in developing web applications to automate data management and data analysis. 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.

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EDUCATION

Master of Arts: Computational and Applied Mathematics (Academic Honors)

California State University, Fullerton

08/2019 - 05/2021 *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.

CERTIFICATES

AWS Cloud Practitioner (10/2021 - Present)

COMPUTER SKILLS

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

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

Front-end: HTML, CSS, Java-script

Visualization: PowerBI

Version Control: Git/GitHub

Cloud Computing/Application Development: AWS/Docker

WORK EXPERIENCE

Programmer

Southern California Water Research Agency (SCCWRP)

07/2019 - Present *Costa Mesa, CA*

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
- Automate the data quality assurance process using Python.
- 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*

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.

AWARDS

Russell V. and Betty L. Benson Scholarship for Graduate Mathematics Students (Spring 2020)
California State University, Fullerton

Sally Casanova Pre-Doctoral Scholar (Spring 2019)
California State University, Fullerton

WORK EXPERIENCE

Math Teacher
Russian School of Mathematics

08/2021 - Present

Achievements/Tasks

- Teach Mathematics in K-6, K-7 and K-8 grades (Algebra and Geometry). Class consists of 12 students
- Communicate with parents regularly, and maintain records of academic performance, attendance and social acclimation
- Communicate with school managers to discuss the students' progress and classroom atmosphere

Teaching Internship with Experienced Support
Golden West College

01/2021 - 07/2021 *Irvine, CA*

Achievements/Tasks

- Shadow an experienced faculty member—in class, pre-semester preparation, workshops, campus events, committee meetings, etc.
- Create and conduct lessons for Calculus 1 and College Algebra; collaborate with faculty mentor on syllabus building, assignments, and in-class activities; discuss strategies for student success and grading practices.
- Establish and maintain professional relationships with intern cohort, faculty, administrators, and students.

Contact: Dr. Erin Craig - ecraig4@gwc.cccd.edu