

Bijan Seyednasrollah, Ph.D.

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US Work Authorization / Residency Status: US Permanent Resident (Green Card Holder)

HIGHLIGHTS

- Multi-disciplinary data scientist and engineer with 17+ years of experience in computational methods including leadership roles
- Proficient in computational and data analyses, machine learning, image processing, and mathematical modeling
- Proficient developer in multiple platforms and programming languages and packages, e.g., R, Python, C/C++, Fortran, Shiny, GDAL
- Organized and taught technical quantitative workshops for lay and technical audience at professional meetings and universities
- Strong writing skills as proven in over 20 publications in top peer-reviewed journals of quantitative topics
- Strong communication skills as proven in presentations for lay and technical audience at professional meetings
- Strong connections with the academic community in science and engineering in leading universities and national labs
- Refereed 60+ articles for top peer-reviewed journals in quantitative science, modeling and remote sensing

EDUCATION

Ph.D. in Quantitative Environmental Science , Duke University, Durham, NC, USA	2017
M.Sc. in Mechanical Engineering (Computational Methods) , Sharif University of Technology, Iran	2006
B.Sc. in Mechanical Engineering (Numerical Modeling) , University of Semnan, Iran	2003
Certificate: IBM Data Science Professional (9 Courses on Machine Learning and Visualization in Python and SQL)	2020
Certificate: Data Science Foundations using R Specialization by Johns Hopkins University (5 Courses in R)	2016

SKILLS

Programming and Scripting:

- R, Python, C/C++/C#, Markdown, MATLAB, Python, Mathematica, Java, VBA, Fortran, Shell, HTML/CSS
- Object Oriented Programming (OOP), High Performance Computing (HPC), Multithreaded Programming

Quantitative, Geospatial and Visualizations:

- Hierarchical Modeling, Bayesian Statistics, Markov Chain Monte Carlo (MCMC), Optimizations
- Machine Learning, Deep Learning, Neural Network,
- GIS, Geospatial Analysis, Remote Sensing, Data Elevation Model (DEM) Processing, Image Processing
- GDAL, ggplot2, data.table, dplyr, Shiny, NumPy, SciPy, Pandas, Scikit-learn, Matplotlib, TensorFlow, Keras

PROFESSIONAL EXPERIENCE

Environmental Data Scientist / Geospatial Image Scientist

Harvard University / Northern Arizona University (PhenoCam Network)

- Led data management of the PhenoCam network, 40+ million images from 650+ sites around the globe
- Designed data pipeline for translating raw data to curated, quality checked, and processed final products
- Developed image/data processing routines in R/Python to extract meaningful insight from variety of data types including: Digital images, hyperspectral, Rasters, Shapefiles, JSON, geoJSON, LiDAR, surveyed data, HDF, ...
- Developed Machine Learning methods and applied Deep Learning routines to extract insight from digital images
- Regularly communicated with 250+ in-site scientists and technicians globally to assure high quality data stream
- Developed web-based applications for interactive image processing and environmental science
- Developed R packages including *xROI*, *solrad*, *phenocamapi*, *hazer* for data and image processing, 30,000+ downloads
- Organized technical workshops on image processing and quantitative methods

2017-now

Doctoral Research Assistant / Quantitative Environmental Scientist

Duke University, Nicholas School of the Environment

- Designed and developed hierarchical models to study climate change impacts across the U.S. using satellite imagery
- Developed nationwide drought monitoring interface using satellite data
- Developed physics-based models (FoRM and GaRM) in C/C++/MATLAB to quantify energy fluxes in watersheds

2011-2017

Senior Researcher / Research and Development Engineer

Research Institute of Petroleum Industry, Department of Energy and Environment, Iran

- Led the backend development team
- Managed several research and development projects from the oil and gas industry
- Developed a 3D model of multiphase flow simulator in porous media in C/C++/Fortran to simulate oil/gas reservoirs
- Developed Energy Performance and Assessment Tools in C# to audit energy in power plants

2006-2011

Director of Mechanical Engineering Magazine

Iranian Society of Mechanical Engineers (ISME)

- Managing the team of editors and staff for the review/publication process
- Editing and reviewing scientific articles
- Preparing Educational Materials for Population and Environment Course

2004-2007