

Bijan Seyednasrollah, Ph.D.

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Portfolio: <https://bnasr.github.io>
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US Work Authorization / Residency Status: US Permanent Resident (Green Card Holder)

HIGHLIGHTS

- Multidisciplinary Lead Data Scientist with Years of Experience
- Certified TensorFlow Developer (CNN, RNN, NLP)
- Proficient Developer in R, Python, C/C++, Fortran, Shiny, GDAL on Unix-based Systems
- Proficient in Machine Learning, Deep Learning, Image Processing, Computer Vision, Bayesian Statistics and IoT
- Developed Many Open-source Packages, Downloaded 40,000+ Times
- Organized and Taught Quantitative Workshops for Diverse Audience
- Strong Writing Skills as Demonstrated in Over 20 Scientific Articles in Top Peer-Reviewed Journals
- Strong Communication Skills as Demonstrated in Presentations for the Lay and Technical Audience at International Meetings
- Refereed 60+ Articles for Top Peer-Reviewed Journals in Quantitative Science, Modeling and Remote Sensing

EDUCATION

Harvard University , Postdoc in Environmental Data Science, Cambridge, MA, USA	2017
Duke University , Ph.D. in Quantitative Environmental Science, Durham, NC, USA	2017
Sharif University of Technology , MSc. in Mechanical Engineering (Computational Methods), Iran	2006
University of Semnan , BSc. in Mechanical Engineering (Numerical Modeling), Iran	2003

CERTIFICATES

Professional Certificate: DeepLearning.AI TensorFlow Developer (4 Courses on DL, CNN, NLP and Timeseries)

Professional Certificate: IBM Data Science (9 Courses + Capstone on ML & Visualization in Python and SQL, DB2)

Specialization: Data Science Foundations using R Specialization by Johns Hopkins University (5 Courses on Data Science in R)

SKILLS

Languages: R, Python, SQL, C/C++/C#, Markdown, MATLAB, Python, Mathematica, Java, VBA, Fortran, Shell, HTML/CSS, BUGS/JAGS

Paradigms: Object Oriented Programming, High Performance Computing (HPC), Multithreaded Programming, Geospatial Analysis (GIS)

Quantitative: Machine Learning, Deep Learning, Natural Language Processing, Sequence Modeling, Hierarchical Bayesian Statistics

Libraries: ggplot2, plotly, data.table, dplyr, Shiny, NumPy, SciPy, Pandas, Scikit-learn, GDAL, Matplotlib, TensorFlow, Keras

PROFESSIONAL EXPERIENCE

Lead Data Scientist , PhenoCam <ul style="list-style-type: none">- Led data management of the PhenoCam network, 40+ million images from 650+ sites around the globe- Designed the data pipeline for translating raw data to curated, quality checked, and processed final products- Developed ML/DL models in R & Python to extract insight from structured and unstructured data- Developed web-based apps, and open-source applications for interactive image processing of remote sensing data	2017-now
Environmental Data Scientist , Duke University <ul style="list-style-type: none">- Designed and developed hierarchical models to study climate change impacts across the US using satellite data- Developed nationwide drought monitoring interface using remote sensing: https://bnasr.github.io/droughteye- Developed physics-based models (FoRM and GaRM) in C/C++/MATLAB to quantify energy fluxes in watersheds	2011-2017
Senior Computational Engineer , Research Institute of Petroleum Industry, Iran <ul style="list-style-type: none">- Led the backend software development team (C/C++/C# and Fortran)- Managed software development and R&D projects for the oil and gas industry- Developed a 3D simulator of multiphase flow in porous media, and the Energy Performance and Assessment Tools	2004-2011
Design Engineer , TPF Consulting Engineers <ul style="list-style-type: none">- Prepared Construction Documents for Petrochemical Plants- Designed Heat Exchangers and Cooling Towers	2003-2004

AWARDS	NASA Advanced Information Systems Technology , National Aeronautics and Space Administration	2020
	ESA Early Career Scholar Award , Ecological Society of America	2019
	NEON Data Institute Fellowship , National Ecological Observatory Network	2018
	Outstanding Accomplishments Fellowship , Duke University	2017
	Pathfinder Fellowship , The Consortium for the Advancement of Hydrologic Science Inc. (CUAHSI)	2014
LED WORKSHOPS	Data Fusion: Combining Image and Timeseries Data , (Boulder, CO, 2019)	
	Beyond Data: Navigating NEON Data , (Louisville, KY, 2019)	
	New Advances in Modeling: Introduction to PhenoCam Data Products and Software Tools (Flagstaff, AZ, 2019)	
	Time-series analysis from image datasets: Introduction to PhenoCam Data Products and Software Tools (Washington, DC, 2018)	
	Time-series analysis from image datasets: Introduction to PhenoCam Data Products and Software Tools (Flagstaff, AZ, 2018)	
	Source Control and Reproducible Science (Flagstaff, AZ, 2018)	
SELECTED PUBLICATIONS	Visual Basic Programming for Engineering (RIPI, 2010-2011)	
	Seyednasrollah, B. and J. S. Clark (2020), "Where resource-acquisitive species are located: The role of habitat heterogeneity", <i>Geophysical Research Letters</i> , https://doi.org/10.1029/2020GL087626	
	Seyednasrollah, B. , et al. (2020) "Sensitivity of deciduous forest phenology to environmental drivers: Implications for climate change impacts across North America", <i>Geophysical Research Letters</i> , https://doi.org/10.1029/2019GL086788	
	Seyednasrollah, B. , et al. (2019), "Tracking vegetation phenology across diverse biomes using PhenoCam imagery: The PhenoCam dataset v2.0", <i>Scientific Data</i> , https://doi.org/10.1038/s41597-019-0229-9	
	Seyednasrollah, B. , et al. [116 co-authors] (2019). PhenoCam Dataset v2.0: Vegetation Phenology from Digital Camera Imagery, 2000-2018. ORNL DAAC, Oak Ridge, Tennessee, USA, https://doi.org/10.3334/ORNLDAAAC/1674	
	Seyednasrollah, B. , et al. (2019), "Data extraction from digital repeat photography using xROI: An interactive framework to facilitate the process", <i>ISPRS Journal of Photogrammetry and Remote Sensing</i> , https://doi.org/10.1016/j.isprsjprs.2019.04.009	
	Seyednasrollah, B. , et al. (2019), "Spatiotemporal sensitivity of thermal stress for monitoring canopy hydrological stress in near real-time", <i>Agricultural and Forest Meteorology</i> , https://doi.org/10.1016/j.agrformet.2019.02.016	
OPEN-SOURCE SOFTWARE	Seyednasrollah, B. , et al. (2018), "Leaf phenology paradox: Why warming matters most where it is already warm", <i>Remote Sensing of Environment</i> , https://doi.org/10.1016/j.rse.2018.02.059	
	Seyednasrollah, B. , D. Basler, S. Beals, J. Beasley, A. Greene, J. Kelroy, M. S. Carbone, and A. D. Richardson (2018), "FluxPuppy: Android interface to Licor LI-820 and LI-840 gas analyzers", Zenodo. http://doi.org/10.5281/zenodo.1438548 .	
	Seyednasrollah, B. , T. Milliman and A. D. Richardson (2018), "xROI: A toolkit to delineate region of interests (ROI's) and extract time-series data from digital repeat photography images", Zenodo. http://doi.org/10.5281/zenodo.1202273 .	
	Seyednasrollah, B. (2017), "drawROI: An interactive toolkit to extract phenological time series data from digital repeat photography", Zenodo. http://doi.org/10.5281/zenodo.1066588 .	
	Seyednasrollah, B. (2017), "hazer: Quantifying haze factor for RGB images to identify cloudy and foggy weather", Zenodo. http://doi.org/10.5281/zenodo.1008568 .	
	Seyednasrollah, B. (2016), "solrad: To calculate solar radiation and related variables based on location, time and topographical conditions", Zenodo. http://doi.org/10.5281/zenodo.1249673 .	
REFREE	Scientific Referee for the following journals:	
	Nature Climate Change (x4), Scientific Data, Science of the Total Environment (x2), Geophysical Research Letters, Frontiers in Ecology and the Environment, Journal of Geophysical Research: Atmospheres, Journal of Geophysical Research: Biogeosciences, EGU Biogeosciences (x3), Agricultural and Forest Meteorology (x7), Remote Sensing of Environment (x3), Methods in Ecology and Evolution, ISPRS Journal of Photogrammetry and Remote Sensing (x2), ISPRS International Journal of Geo-Information, International Journal of Digital Earth, Climate Research, Ecosphere, Solid Earth, Remote Sensing (x5), Water (x9), Forests (x2), Atmosphere (x3), Sustainability (x5), Forecasting (x2), Data (x2), Geosciences, Entropy, Applied Sciences, Asia-Pacific Journal of Chemical Engineering	