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| **Bijan Seyednasrollah, Ph.D.** | | | | | | |
| <https://bnasr.github.io>  bijan.s.nasr@gmail.com  GitHub: @bnasr | |  | 4343 E Soliere Ave, #1086  Flagstaff, AZ 86004  (919) 599-4380 | | | |
| **US Work Authorization / Residency Status:** US Permanent Resident (Green Card Holder) | | | | | | |
| **HIGHLIGHTS** | * Multi-disciplinary data scientist with 15+ years of experience in computational/data science and engineering * Leading efforts on big data processing: 40 million PhenoCam images + one million new images per month * Advanced knowledge in image understanding, data fusion techniques, and optimization algorithms * Proficient in numerical analysis, data analysis, and mathematical modeling, and estimation theory * Proficient developer in multiple platforms and programing languages, e.g., R, Python, C/C+, Fortran * Strong quantitative, engineering and data science background and advanced knowledge in remote sensing * Developed several R-packages on image processing, statistics, and data wrangling, with 20,000+ downloads * Developed several web-based geospatial and image processing applications based on R Shiny * Regularly communicated with 250+ in-site technicians and scientists who are distributed around the world * Refereed 50+ articles for top peer-reviewed journals in image processing, data science, remote sensing * Organized and taught technical workshops for lay and technical audience at professional meetings * Strong writing skills as proven in 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 top R1 universities and labs | | | | | |
| **EDUCATION** | **Ph.D. in Quantitative Environmental Science,** Duke University, Durham, NC, USA | | | 2017 | | |
| **M.Sc. in Mechanical Engineering (Energy Conversion),** Sharif University of Technology, Tehran, Iran | | | 2006 | | |
| **B.Sc. in Mechanical Engineering (Heat and Fluid Flow)**, University of Semnan, Semnan, Iran | | | 2003 | | |
| **CERTIFICATES** | **IBM Data Science Professional Certificate (9 Courses and Capstone Project in Python and SQL)**  Fundamentals, Methodology, Data Analysis, Machine Learning, Visualizations, and Databases using Python and SQL  **Data Science: Foundations using R Specialization by Johns Hopkins University (5 Courses in R)** | | | | |  |
| **PROFESSIONAL EXPERIENCE** | **Lead Data Scientist / Image Scientist**  Harvard University / Northern Arizona University (PhenoCam Network)   * Leading data curation of the PhenoCam Dataset, a total of 2500 site-years of data from more than 600 sites around the globe: <https://doi.org/10.3334/ORNLDAAC/1674> * Developed web-based applications for interactive image processing and environmental science applications, e.g.: DrawROI App: <http://phenocam.nau.edu/drawroi/> and Tree Ring Image Analysis and Database: <http://phenocam.nau.edu/triad> * Developed R packages including *xROI*, *phenocamapi*, *hazer* to facilitate data and image processing * Organized technical workshops on image processing and quantitative methods * Applying Machine Learning and Deep Learning methods for image calcification and clustering | | | 2017- | | |
| **Doctoral Research Assistant / Quantitative Environmental Scientist**  Duke University, Nicholas School of the Environment   * Designed and developed hierarchical state-space model to study climate change impacts across the continental U.S. using daily MODIS remotely sensed reflectance imagery * Designed and developed drought monitoring interface across the US using MODIS imagery: <http://phenocam.nau.edu/droughteye/> * Developed physics-based models (FoRM and GaRM) to quantify energy fluxes in watersheds * Served as Teaching Assistant for course “GIS for Water Quantity and Quality Assessment” | | | 2011-2017 | | |
| **Senior Researcher / Research and Development Engineer**  Research Institute of Petroleum Industry, Department of Energy and Environment, Iran   * Developed a 3D model of multiphase flow in porous media in C/C++ to simulate oil/gas reservoirs * Developed Energy Performance and Assessment Tools in C# to audit energy in power plants * Developed Pars Basin Modeler (PBM) in C/C++/Fortran to model sedimentary basins | | | 2006-2011 | | |
| **SKILLS** | **Programming and Scripting:**   * R, C/C++/C#, Markdown, MATLAB, Python, Mathematica, Java, VBA, Fortran, Pascal, 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, CNN, TensorFlow, Clustering and Classification Methods * GIS, Geospatial Analysis, Remote Sensing, Data Elevation Model (DEM) Processing, Image Processing | | | | | |
| **SELECTED AWARDS** | **NASA Advanced Information Systems Technology**, “The bridge from canopy condition to continental scale biodiversity forecasts, including the rare species of greatest conservation concern”, J. Swenson (PI), B. Seyednasrollah (Co-I), $574,926 | | | | 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, $22,470 | | | | 2017 | |
| **Pathfinder Fellowship**, The Consortium for the Advancement of Hydrologic Science Inc. (CUAHSI), $4,996 | | | | 2014 | |
| **SELECTED PUBLICATIONS** | **Seyednasrollah**, B., A. M. Young, X. Li, T. Milliman, T. Ault, S. Frolking, M. Friedl, A. D. Richardson (2020) “Sensitivity of deciduous forest phenology to environmental drivers: Implications for climate change impacts across North America”, *Geophysical Research Letters*, 47, e2019GL086788.  **Seyednasrollah**, B., A. M. Young, K. Hufkens, T. Milliman, M. A. Friedl, S. Frolking and A. D. Richardson (2019), “Tracking vegetation phenology across diverse biomes using PhenoCam imagery: The PhenoCam dataset v2.0”, *Scientific Data*, Volume 6, 22  **Seyednasrollah**, B., T. Milliman and A. D. Richardson (2019), “Data extraction from digital repeat photography using xROI: An interactive framework to facilitate the process”, *ISPRS Journal of Photogrammetry and Remote Sensing*, Volume 152, June 2019, Pages 132-144  **Seyednasrollah**, B., J. C. Domec and J. S. Clark (2019), “Spatiotemporal sensitivity of thermal stress for monitoring canopy hydrological stress in near real-time”, *Agricultural and Forest Meteorology*, Volumes 269270, 15 May 2019, Pages 220-230.  **Seyednasrollah**, B., J. J. Swenson, J. C. Domec and J. S. Clark (2018), “Leaf phenology paradox: Why warming matters most where it is already warm”, *Remote Sensing of Environment*, Volume 209, May 2018, Pages 446-455, ISSN 0034-4257. | | | | | |
| **SELECTED MEDIA COVERAGE** | **KNAU Arizona Public Radio:** *Earth Notes: Drought Eye* <https://www.knau.org/post/earth-notes-drought-eye/> | | | June 26, 2019 | | |
| **LTER Network Science Update:** *Keeping an eye out for drought* <https://lternet.edu/stories/eye-out-for-drought/> | | | May 29, 2019 | | |
| **Weather Nation**: *A Faster and More Accurate Way to Monitor Drought* <http://www.weathernationtv.com/news/a-faster-and-more-accurate-way-to-monitor-drought/> | | | March 13, 2019 | | |
| **Science Daily: Thermal Stress Measurements Sound the Alarm About Drought Conditions Sooner** <https://www.sciencedaily.com/releases/2019/03/190304154858.htm> | | | March 4, 2019 | | |