Postdoctoral Fellowship Opportunity in Big Data Predictive Analytics of Satellite Imagery for Forest Management and Carbon Science

We invite applications for two postdoctoral positions with joint affiliations at the University of California Los Angeles (UCLA) and the NASA/Jet Propulsion Laboratory (JPL) for a 2 year appointment with the possibility of extension based on performance and available funding.

Description of Position:
Researchers at the Institute of Environment and Sustainability at UCLA, Carbon Cycle and Ecosystem group at JPL, and international partners have recently designed C-TREES, a tree level information infrastructure and monitoring system based on the power of big data from space technology and artificial intelligence (AI) for climate smart forest restoration and carbon management. C-TREES is focused on providing precise science-based data products through transparent data sharing platforms in order to empower decision makers for climate mitigation policies. In its initial phase, our team will integrate very high resolution satellite imagery (e.g. Planet), lidar measurements of forest structure (GEDI, ICESAT-2) and conventional optical and radar observations to monitor changes of forest structure and biomass regionally across temperate and tropical forest ecosystems.

Job Description:
The selected candidates will work with a team of scientists to conduct original research by developing automatic machine learning algorithms to process large data sets stored on cloud computing platforms for two distinct tasks: 1. to map tree level forest disturbance, fire fuel loads, and biomass across temperate forests (e.g. western US), and 2. to quantify biomass loss and gain from forest degradation (e.g. logging) and regeneration (e.g. secondary forests) in humid tropical ecosystems (e.g. Amazon and Congo Basins). The candidates are required to lead one task, perform the analysis, document all algorithms and codes developed for data processing, analysis, science product generation, and lead peer-reviewed publications.

Required qualifications:
The candidates must have completed a PhD or be scheduled to complete their PhD before the end of August 2021 in one of the following areas: remote sensing, computer science, environmental science and engineering, mathematics/statistics or with relevant experience in forest ecology and geography. Required qualifications include experience in quantitative satellite data analysis, machine learning algorithms, time series analysis, and fundamental understanding of lidar and radar remote sensing techniques, The successful candidate will have strong programming skills in a scientific languages (e.g. python, MATHLAB, R) and strong fundamentals in statistics and optimal estimation. Applicants should have demonstrated quantitative and computational skills, a successful publication record, and the ability to work in an interdisciplinary research environment.

Application instructions:
All individuals interested in this position must submit a CV, names and contact information of three references, and a short cover letter detailing current and future research interests to Dr. Sassan Saatchi (saatchi@jpl.nasa.gov or ssaatchi@ucla.edu). Closing date: Applications will be evaluated beginning August 1, 2021 and will be accepted until the position is filled.