POSITION DESCRIPTION: Data Scientist

Conservation Science Partners (csp-inc.org) is seeking a Data Scientist passionate about ecology and conservation to support a team of conservation biologists, ecologists, and social scientists working on efforts to conserve species and their habitats, including but not limited to the Mojave desert tortoise.

About: Conservation Science Partners (CSP) is a dynamic 501(c)(3) nonprofit established in 2012 to meet the analytical and research needs of diverse stakeholders in achieving conservation and protection of the natural world. Our mission is to apply human ingenuity to the preservation of species, populations, and ecosystems using scientific principles, innovative approaches, and lasting partnerships with conservation practitioners. We connect the best minds in conservation science to solve problems in a way that is comprehensive, flexible, and service-oriented. CSP works in the complex and fast-paced nonprofit realm using tools that include data science and advanced analytics; risk analysis and climate change vulnerability analyses; species and habitat modeling; and wildlife and ecological connectivity analysis to identify solutions through land and water use, designating protected areas, and advancing social and environmental justice. We are a recognized leader in the development of data, models, and maps to convey the status of and change to natural systems and human impacts on the environment. Core clients and partners include federal agencies, foundations, environmentally progressive businesses, and other non-governmental organizations. Outcomes of projects are designed to explain ecological phenomena and lead to tools, map products, and strategies often tailored to the needs of decision makers.

Organizational Values and Culture: Our core values include scientific and technical excellence and integrity, which help to advance the function, direction, and initiatives of the organization. We support and encourage creativity and innovation in practice and products; respectful co-production of knowledge; and connection to the living world. We are actively seeking project opportunities that directly involve Black, Indigenous, and communities of color and diverse international partners, address disparate impacts of environmental change, and support social justice. We welcome the broader complement of knowledge and skills that stem from applicants' professional and life experiences. We seek a candidate with deep curiosity directed toward diverse research interests, as well as aptitude and enthusiasm to develop new skills and areas of expertise.

Position Description: The Data Scientist will be working with the Tortoise Lab and Analytics Lab at CSP and a team of data scientists, engineers, and ecologists working to solve large-scale problems through implementation of end-to-end software development workflows, machine learning (ML) and advanced statistical modeling, and cloud-based computing platforms. Projects involve working with teams of scientists on data-driven landscape and conservation planning projects around the globe, developing platforms and tools that bring cutting-edge software technologies to conservation practitioners. This position will support an emphasis on projects aiming to understand and conserve populations of Mojave desert tortoise.

The Data Scientist should have well-developed problem-solving, statistical, and analytical thinking capacities and a demonstrated record of applying these skills to programming. They should demonstrate attention to reproducibility and quality assurance/quality control in all their work. We are looking for someone with excellent organizational and communication (oral and written) skills who can balance

several projects simultaneously. Specifically, the Data Scientist will be expected to lead or support the design, development, and deployment of new or existing projects, steward external and internal communications, and manage a variety of project tasks, not just technical ones.

Core Skills and Responsibilities: The Data Scientist position brings advanced technical and analytical capacity to a variety of projects, as well as direct and regular engagement and collaboration with core staff and their programs, clients, partners, contractors, and other project personnel. Primary responsibilities are expected to include, but not be limited to:

- Practicing good software development
    - Highly fluent in Python
    - Familiarity programming in R, JavaScript, and Bash
    - Using online versioned repositories for code (e.g., Github), including branching/forking workflows
    - Using and building portable environments, specifically Docker for reproducible workflows
    - Familiarity with continuous integration/deployment and implementation of these concepts into end products
    - Learning new methods and software for specific projects, as appropriate
- Building geospatial machine learning/statistical datasets and models
    - Strong familiarity with image change detection, photogrammetry, image co-registration, data fusion, super resolution, image processing, supervised/unsupervised image classification and segmentation, style transfer, or other relevant remote sensing, computer vision, or machine learning concepts.
    - Manipulating and querying big datasets for analysis and modeling
    - Data munging, preprocessing, and automated data allocation techniques
    - Acquiring and processing satellite imagery and other remotely sensed data obtained from multiple platforms
    - Model prototyping/fitting/evaluation using both machine learning methods, computer vision applications, and inferential statistics
    - Building and evaluating training/validation/testing dataset for fitting supervised learning models for specified tasks
    - Understanding and constructing deep learning architectures that include convolutional neural networks and recurrent neural networks using the PyTorch and Tensorflow frameworks
    - Provisioning and leveraging cloud resources for storage and computation (i.e., Azure, Amazon Web Services, and Google Cloud Platform)
- Managing and advancing projects and outcomes
    - Contributing to the design, development, and management of multiple projects simultaneously, as well as leading or guiding advanced technical steps for these efforts
    - Fostering and maintaining positive, respectful communications with clients, research collaborators, interns, students, and project contractors or other personnel
    - Developing or supporting manuscripts, reports, proposals, and professional presentations

- Creating user-friendly data visualizations and other syntheses of complex information for multiple end users

Additional desired skills:

- Research experience with Mojave desert tortoises, through computer modeling, field studies, or in other applied settings
- Strong familiarity with a variety of land cover datasets, satellite image-based vegetation indices and related derivatives, climatological data, as well as related prioritization-based approaches to public lands policy development and management
- Experience with analyses pertaining to climate and land cover change impacts on wildlife populations and their habitats
- Experience collaborating meaningfully with indigenous or other under-represented communities and non-traditional conservation partners with diverse interests and perspectives
- Additional Machine Learning and Modeling Skills
    - Applied experience with deep learning including convolutional neural network and recurrent neural network design
    - Ability to provision and optimize large computational loads using cluster, GPU, and distributed computing platforms
    - Knowledge of backend workflows to prepare data and spatial data for dashboards serving on the web
- Additional Software Skills
    - Experience with GIS tools and web map APIs (e.g., Google Earth Engine, Mapbox, CARTO, QGIS, ArcGIS)
    - Fluency in Markdown, and LaTeX
    - Experience with SQL, HTML, and CSS

Required qualifications: A BSc and/or graduate degree(s) in earth/environmental science, ecology, computer science, or a related field AND at least three years of professional experience.

Application deadline and expected start date: Priority will be given to complete applications received by **July 1, 2022**, with screening to begin soon thereafter; interviews are to occur in the second half of July and an ideal start date of no later than **August 1, 2022**.

Location: Flexible within Western North America, home or office-based, with preference for the Reno-Tahoe region and CSP's Truckee, CA, headquarters.

Compensation: The Data Scientist salary range is $70,000-80,000 depending on experience. We offer a comprehensive group medical, dental, and vision insurance package; retirement benefits; and professional growth and advancement opportunities.

How to apply: Please email a cover letter explaining how your goals, skills, and experience fit the core responsibilities of the role and please also describe how your broader knowledge and experiences can contribute to our organizational culture and values. Include the names and contact information of at least three relevant professional references, as well as your CV, and send to: **hiring@csp-inc.org**. Your

cover letter, reference list, and CV should be compiled and sent as a single PDF file. Please indicate **DATA SCIENTIST** in the subject line. *We sincerely appreciate all those expressing interest in this position. However, only applicants invited for an interview will be contacted.*

CSP is an equal opportunity employer and does not discriminate on the basis of race, color, national origin, sex, disability, age, religion, sexual orientation, gender identity, gender expression, creed, veteran status, parental status, or marital status in its programs and activities. We recognize that diverse backgrounds, cultures, and experiences can only enrich our community and our conservation mission and goals. As part of our intentional efforts to increase inclusivity, equity, diversity, and justice, we encourage applicants from underrepresented groups in conservation, e.g., those who identify as women or non-binary, LGBTQ+, are people of color, or represent any combination of these and other identities.