Ivan Palmegiani, MSc

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Personal address and phone number available on request

Profile

Environmental researcher with cross-disciplinary expertise including natural sciences, landscape ecology as well as geographic information systems (GIS) and data analytic. Capable of communicating data and results via effective data visualizations and reports. Earth Observation enthusiast. Proponent of nature-based solutions for climate change adaptation and mitigation. Team player, also able to take charge of tasks individually. Constructive critical thinker. Solution oriented and careful about details. Strong analytical mindset and excellent organization skills. Highly motivated and positive towards challenges. Moved by inherent curiosity and engaged in continuous learning.

Technical expertise

Open Source GIS | Python programming | R statistical computing | Spatial analyses and remote sensing | Time series analyses | Multi-Dimensional Data Visualization - Grammar of Graphics | Data Reporting - R-Markdown and Jupyter notebooks | Fundamentals of Web-GIS Development and Relational geodatabases - PostgreSQL + PostGIS

Languages

English - IELTS certification level C1 • German - TELC certification level B1 • Italian - mother tongue • Spanish - fluent • Portuguese - fluent

Professional Experience

Climate Co-Adaptation Lab Fellow at PlanAdapt
Fellowship, *since Apr. 2021*
Proposal development for climate change adaptation with a focus on GIS and EO technologies in sustainable agricultural development.

External Geospatial Data Consultant at WWF Water Risk Filter
Contract, *Feb. 2021 - ongoing*
Working closely with the technical project manager, I have reviewed protocols to analyze corporate water risk data, refined data visualizations and mapped water risk types globally to support corporate partners in their path towards Water Stewardship. I've also automated data reporting workflows, leading to substantial reduction of the preparation time.

External Geospatial Data Scientist at SmartCloudFarming GmbH
Contract, *Mar. 2020 - Feb. 2021*
Research and development in a production context: following the principles of agile development, I have coordinated a small team of data professionals and personally worked at the development of a minimum viable product (MVP) for the estimation of water content in agricultural soil.

- Performed literature research to identify state-of-the-art methods for the estimation of soil water content and soil organic carbon from satellite imagery
- Presented key findings in bibliographical reports

- Identified suitable data sources to facilitate programmatic access to satellite imagery, and to ground data
- Developed data science pipelines to source and composite satellite imagery to train machine learning (ML) models, and prepared ground data to test and validate predictions
- Co-developed and fine-tuned ML models to predict soil moisture content from satellite data. The accuracy of predictions is satisfactory (R squared > 0.95, RMSE < 0.05)
- Generated interactive data visualizations and 3D maps to report model predictions to executives
- Developed dashboards to display ground data and model predictions to investors, and to potential clients

External Data Consultant at Earth Ratings UG
Contract, *Jan. 2020 - Jun. 2020*
Identified and evaluated access options to data sets on Corporate Environmental Footprint (CEF) and Social Responsibility (CSR) with advanced web search techniques (e.g. truncation, boolean logic, connectivity search and media tagging) | Development of a web scraper program to source publicly available data | Conversion of raw contents to tabular formats and integration of open data sets from several sources | Exploratory analyses and visualization of the resulting data sets

External Data Entry Specialist at University of Primorska
Contract, *Jan. 2020*
The role implied the revision of data storage procedures at the Conservation and Population Genetic research group led by Prof. Dr. Elena Bužan. The tasks included cleansing of genetic data sets and migration from data sheets to database tables, development of functional solutions for data storage in relational databases, automating data querying, and advising the research team on wildlife data management. The work has been conduced using open-source software for data cleansing and manipulation, while proprietary database solutions (Microsoft Access) have been used for data storage.

Professional re-qualification
Oct. 2018 - Nov. 2019
Data Science and Python programming courses | German language course | Conflict management and non-violent-communication (NVC) self-training | Personal development

Graduate Research Assistant at Leibniz Institute for Zoo and Wildlife Research
Full-time, *Apr. 2013 - Jun. 2018*
Investigating the social system of the cheetah in central Namibia

- Collected, processed and analyzed time series of GPS telemetry data
- Performed spatial and movement analyses on tracking data and airborne imagery
- Modelled the use of space by individuals with linear and nonlinear regression models
- Collected and analyzed presence-absence data via camera-trap surveys
- Designed and maintained online and offline geodatabases
- Engaged with stakeholders, and presented scientific results to the general public through talks, data visualizations and reports
- Coordinated data collection in the field, supervised technicians and volunteers
- Organized scientific symposia

Graduate Research Assistant at CIBIO - Research Center in Biodiversity and Genetic Resources
Full-time, *Feb. 2012 - Feb. 2013*
Investigating the spatial ecology of endangered wildlife species in the Iberian peninsula (Portugal and Spain)

- Collected and analyzed satellite telemetry and environmental data
- Modeled species distribution in relation to environmental variables using linear and nonlinear regression models
- Designed and maintained relational (geo)databases

Graduate Research Assistant at Department of Zoology and Evolutionary Genetics, University of Sassari
Full-time, *Nov. 2010 - Nov. 2011*
Investigating spatial distribution, abundance and reproductive success of wolves in central Italy

- Collected data on the presence-absence of wolves, and environmental variables
- Collected presence-absence data via camera-trap surveys
- Modelled presence-absence of wolves with multilinear regression models
- Collected and analyzed bio-acoustic data

Education

Master of Science (MSc), Jul. 2010
Environmental Sciences and Natural Resources Management, University of Sassari.
Grade: 110/110 *Summa cum Laude*
Systems ecology, landscape ecology, regional geology, pedology, sedimentology, wildlife conservation and management, conservation genetics, environmental modelling, statistical inference, advanced statistical theory, environmental economics

Training courses

Copernicus MOOC, Sept. 2020 - Dec. 2020
Copernicus programme of European Union and European Space Agency
Overview on the programme | Copernicus data and services | Renewable Energy | Security and Emergency Management | Resource Management | Land Use and Management | Air quality, water pollution and ecosystem health monitoring | Integrating Copernicus data with other sources: Machine Learning, AI | Ideation | Prototyping | Developing | Collaboration

e-Learning on Digital Agriculture, Aug. 2020
Open Learning Campus, World Bank Group
Overview of Digital Agriculture | ICT and Digital Tools for Enhancing Productivity on the Farm | Empowering Smallholder Farmers through ICT/Digital Tools in Financial Services | Strengthening Agricultural Market Access with ICT and Digital Tools | Using ICT for Remote Sensing, Crowdsourcing, and Big Data

Echoes in Space, July 2020
EO College, European Space Agency - Friedrich-Schiller-Universität Jena
History of Radar technology and the discovery of electromagnetic waves | Image acquisition | Geometry of airborne and space borne Radar systems | Land applications of Radar remote sensing | Applications of radar remote sensing over Water | Application of Radar remote sensing for Hazard management

Data Science Bootcamp, Aug. 2019 - Nov. 2019
Business Trends Academy
Data protection and ethical matters | Linear and nonlinear regression | A/B testing | Hypothesis testing | Data visualization in Tableau | Object oriented programming (OOP) | Python modules and functions | Pandas and NumPy | Multiprocessing and multithreading | RESTful API | Webscraping | Neural Networks and Machine Learning techniques | Keras, Anaconda and TensorFlow

Movement Ecology Summer School, Aug. 2015
Population Ecology Research Group, University of Zurich
GIS and remote sensing in R | Characterization of movement trajectories | Home range analysis | Habitat selection modelling | Integration of data from alternative sensors and future perspectives

Next Generation Data Management in Movement Ecology, Jul. 2015
IRSAE, International Research School in Applied Ecology - FEM, Edmund Mach Foundation
Spatial database management in PostgreSQL/PostGIS | Movement data analysis in R

Multivariate Data Analysis for Ecology and Evolution in R, Nov. 2012
CIBIO - Research Center in Biodiversity and Genetic Resources
Explanatory methods (PCA, PcoA, MDS, clustering) | Inferential methods (Randomization, bootstrap, jackknife, Monte

Carlo, GLM, PLS, CanCor, Mantel Test) | Evolutionary and ecological Non-Independence (PGLS, PIC, rates of change, spatial autocorrelation, spatial GLS) | Model selection (i.e. Hypothesis testing vs information criteria) | Analysis of dispersion (i.e. Convex hulls area/volume, nearest neighbor, centroid size, eccentricity)

BiostAT 2011 – Statistic inference in Biology and Human Sciences, Jun. 2011
UniASTISS, Department of Statistics - Purdue University, Department of Economy - UniMORE, Italian Institute for Philosophical Studies, Department of Statistics - Bologna University, Department of Human and Animal Biology - University of Turin, Department of Social Research - University of Eastern Piedmont, Asti Association for Scientific and Technological Development
Linear and nonlinear regression models | Non-parametric regression model | Principal components analysis | Factor analysis | Correspondence analysis | Cluster analysis | R coding

Hobbies and interests

Cooking • Indoor gardening • Tai Chi • Outdoor sports and activities such as climbing, bouldering, hiking, biking, canoeing, camping • DIY and Handicraft • Music and Arts • Urban agriculture