Ivan Palmegiani, MSc

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Address and phone number available on request

Profile

Researcher with cross-disciplinary expertise including natural sciences, landscape ecology, data analytic, and machine learning techniques. Earth Observation enthusiast. Capable of getting actionable insights from numerical results. 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. Curious and eager to learn.

Technical expertise

Python programming | R coding | Open Source GIS | Relational geodatabases - PostgreSQL + PostGIS | Remote Sensing - Google Earth Engine | Machine Learning | Spatial analyses | Time Series analyses | Data visualization | Data reporting | Basics of Web Development

Languages

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

Professional Experience

Environmental Researcher | (Geo)Data Scientist, Nov. 2019 - Present
SmartCloudFarming GmbH (DE) Mar. 2020 - present
While working at the development of data products for precision agriculture my main responsibilities have been:

- Researching available literature to identify state-of-the-art methods for the estimation of soil moisture content and soil organic carbon from satellite imaging
- Planning the operations and coordinating a small team of data professionals to make sure that objectives and key results would be hit on time
- Developing data science pipelines to source, clean and prepare ground data and satellite imaging for machine learning algorithms
- Co-developing and fine-tuning ML models to predict soil moisture content from satellite data. The accuracy of predictions is satisfactory (R squared > 0.95, RMSE < 0.05)
- Generating interactive data visualizations and reports for executives and their cooperators
- Developing ML dashboards to display model predictions to potential clients

EarthRatings UG (DE) Nov. 2019 - Jun. 2020
Working intermittently, I assisted the founder of this young start-up to research and to source public data set on Corporate Environmental Footprint (CEF) and Social Responsibility (CSR). I have developed a web crawler to scrape the data in accordance with the term and conditions regulating their use. At a later stage I have converted the raw data to 'tidy' format, and performed exploratory analyses.

University of Primorska (SL) Nov. 2019
The research lab led by Prof. Dr. Bužan at the Department of Biodiversity requested assistance in the management of wildlife genetic data. My main tasks have been:

- Data cleansing
- Development of relational databases
- Preparation of data queries to automatize and optimize data management
- Consulting on data management

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

PhD Candidate, May 2014 - Jun. 2018 | **Research Assistant**, Apr. 2013 - Sept. 2013
IZW - Leibniz Institute for Zoo and Wildlife Research (DE)
In the context of wildlife research, conservation and management, I investigated the social system of the cheetah in Namibian farmland. My main responsibilities were:

- Formulating evolutionary hypothesis on the social system of the cheetah
- Designing the study
- Coordinating and executing field operations involving live-capture of cheetahs, deployment GPS collars and the safe release of study animals into the wild, plus extensive camera-trap surveys of the capturing areas
- Engaging with local stakeholders and landowners, involving them in mitigation of human-wildlife conflict
- Processing and analyzing time series of geospatial data from satellite telemetry in near-real-time to plan field operations, and take actions in a timely manner patial and movement modelling of telemetry data
- Designing and maintaining online and offline geodatabases
- Writing scientific manuscripts
- Organizing scientific congresses and symposia

Research Assistant, Dec. 2012 - Feb. 2013 | **Research Technician**, Feb. 2012 - Nov. 2012
CIBIO - Research Center in Biodiversity and Genetic Resources (PT)
While involved in several research and conservation projects, I had the opportunity to investigate the spatial ecology of endangered wildlife species in several areas of the Iberian peninsula (Portugal and Spain). My main responsibilities were:

- Collecting and analyzing satellite telemetry and environmental data to get actionable insights to plan field operations
- Modelling the distribution of endangered wildlife species to develop conservation plans at local and national scale
- Designing and maintained relational geodatabases

Research Technician, Nov. 2010 - Nov. 2011
Department of Zoology and Evolutionary Genetics, University of Sassari (IT)
Following up the studies conducted during my Master thesis, I investigated the spatial distribution, abundance and reproductive success of wolves in several areas in Italy. My main tasks were:

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

Education

Master of Science (MSc), Jul. 2010
Environmental Sciences and Natural Resources Management, University of Sassari. Grade: 110/110 *cum Laude*
Environmental modelling, statistical inference, advanced statistical theory, systems ecology, landscape ecology,

regional geology, pedology, sedimentology, zoocenosis and wildlife conservation, wildlife management, genetics, plant conservation, environmental economics

Bachelor of Science (BSc), Feb. 2008
Environmental Sciences, University of Perugia. Grade: 107/110
Principles of biology, ecology, and geology. The course of study covered a wide range of subjects to provide the students with the solid background required to undertake ecological and environmental studies

Further training

Copernicus MOOC, Sept. 2020 - Dec. 2020
Copernicus programme, from 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