Julian Cabezas

Environmental Data Science Consultant

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Data science, REDD+, GIS, Remote Sensing, R and Python Programming

Education

University of Chile *Santiago, Chile*

Renewable Natural Resources Engineer *2010-2015*

University of Adelaide *Adelaide, Australia*

Master of Data Science (Current student) *2020-2021*

Professional skills

- Developmemt and implementation of spatial and statistic data analysis and machine learning algorithms.
- Estimation of forest carbon emissions for REDD+ reports.
- Processing of optical satellite and UAV data.
- Advanced R and Python programming skills.
- Advanced skills in GIS and remote sensing softwares: ArcGIS 10.4, ENVI 5.1 and QGIS.
- UAV Driving: experience with Mikrokopter Okto XL and DJI Phantom 4 Pro models.
- Chilean driver licence (Class B).
- **Languages**: Native Spanish, Advanced English (score 7.5/9 in academic IELTS)., Basic German

Professional Experience

The Mullion Group *Canberra, Australia*

Consultant *2020-2021*

- Implementing of the Generic Carbon Budget Model (GCBM) for the estimation of REDD+ carbon emissions and removals in Chile

Food and Agriculture Organization of the United Nations (FAO) *Santiago, Chile*

National Project Personnel for the Unit of Climate Change and Environmental Services, National Forestry Corporation (CONAF) *2019*

- Support for the Monitoring and Measurement System of the National Strategy of Climate Change and Vegetation Resources
- REDD+ Technical Annex elaboration and reviewing process

R&D Department - National Institute of Statistics *Santiago, Chile*

Statistical Analyst *2018 - 2019*

- Development of statistic analysis algorithms in national survey data
- implementation of text mining algorithms for automatic classification of labor sector in national surveys

Karlsruhe Institute of Technology (KIT) *Karlsruhe, Germany*

Remote Sensing Scientist *2016 - 2017*

- Implementation of disturbance detection algorithms BFAST and LandtrendR Landsat time series datadata (SaMovar Project)

University of Chile *Santiago, Chile*

GIS assistant *2015*

- GIS elaborations and spatial analysis in the Study for the definition of protection areas in the east piedmont of Santiago project, financed by the United Nations Development Programme (UNDP)

Consultancy

- **2017**: Report elaboration and participation as expert witness in the case D-33-2017 of the environment court of Santiago. with the report “Spatio-temporal analysis of causality and spatial extent of the Nilahue Barahona fire in January 2017.”
- **2017**: Report for the Forest Institute of Chile (INFOR): “Delineation and classification of water courses in forest basins in southern Chile: Analysis using remote sensing techniques” (forest and water research line)

- **2014**: GIS advisor: Diagnosis of the agricultural and soil system of the area of influence of the Carén reservoir. Ambiente Seguro-CODELCO El Teniente. Mapping and analysis of land uses.

Academic achievements

International journals

- **Cabezas**, J., Galleguillos M. & J. Pérez-Quezada. (2016). A method to predict vascular plant richness in a heterogeneous wetland using spectral and textural features and a random forest algorithm. IEEE Geoscience and Remote Sensing Letters 13(5): 646-650.
- **Cabezas**, J., Galleguillos, M., Valdés, A., Fuentes, J.P., Pérez, C. & J. Pérez-Quezada. (2015). Impacts of management on vegetation and carbon stocks in an anthropogenic peatland using field and remote sensing data. Ecosphere 6(12): 282.
- Pérez-Quezada, J. F., Brito, C. E., **Cabezas**, J., Galleguillos, M., Fuentes, J. P., Bown, H. E., & Franck, N. (2016). How many measurements are needed to estimate accurate daily and annual soil respiration fluxes? Analysis using data from a temperate rainforest. Biogeosciences, 13(24), 6599.

Book Chapters

- Pérez-Quezada J., Astorga B., **Cabezas** J., Labra F. & Rovira J. Ecologic Planning of the territory applied in the piedmont of Santiago. (2018) In: Pérez-Quezada J. y Rodrigo P. (Eds.) Applied methodologies for the conservation of the biodiverity of Chile. Environmental Sciences Series N°1. Faculty of Agricultural Sciences, University of Chile, Santiago: 379-411 (Original in Spanish)

Presentations in scientific congresses

- **Cabezas**, J & F. Fassnacht (2018). Reconstructing the vegetation disturbance history of a biodiversity hotspot in central Chile using Landsat, BFAST and Landtrendr. International Geoscience and Remote Sensing Symposium (IGARS). Valencia, España, 22-27 July 2018.
- Labra, C., **Cabezas**, J. & C. Little. Delimitation of protection areas for water courses using hidrological modelling tools (2018). Joint conference on Forest and Water. Valdivia, Chile, 5-9 November 2018. (Original in Spanish)
- **Cabezas**, J., Fassnacht, F., Schmidt, T., Kleinschmit, B. & M. Foester. (2016) Satellite-based monitoring of invasive species in central-Chile: Detection of disturbances using Landsat time series. Presentation in the ForestSat 2016 congress. Santiago, Chile. 14-18 November 2016.
- **Cabezas**, J., Fassnacht, F., Schmidt, T., Kleinschmit,B. & M. Foester. (2016) Relating the disturbance history of natural vegetation in central Chile with the spread of three invasive species. Poster presented in "GEO BON Open Science Conference & All Hands Meeting 2016." Leipzig, Germany. 4-8 de July 2016.
- Foester, M., Schmidt, T., Kleinschmit, B., Fassnacht, F & J. **Cabezas**. (2016) Detecting the spread of invasive tree species in central Chile with combined Landsat and Sentinel-2 data. Poster presented in "GEO BON Open Science Conference & All Hands Meeting 2016." Leipzig, Germany. 4-8 de July 2016.
- **Cabezas**, J., Galleguillos M. & J. Pérez-Quezada. (2015). Prediction of the richness of vascular plants in a wetland of the Chiloe Island using remote sensing textural variables. Poster presented in the IV Congress of Native Flora, Concepción, Chile. 14-17 October 2015. (Original in Spanish)
- Pérez-Quezada, J., Brito, C., **Cabezas**, J., Salvo, P., Lemunao, P. Flores, E., Valdés, A., Fuentes, J.P., Galleguillos, M. & C. Pérez. (2015). Carbon stocks of an old-growth forest and an anthropogenic peatland in southern Chile. Poster presented in EGU 2015. Vienna, Austria. 12-17 April 2015.

References

- Dr. Robert Waterworth. Director. The Mullion Group. e-mail: `robert.waterworth@mulliongroup.com`
- Dr. Fabian Fassnacht. Post-Doc Position. Institut für Geographie und Geoökologie, (Karlsruher Institut für Technologie, KIT). e-mail: `fabian.fassnacht@kit.edu`
- Dr. Jorge Pérez Quezada, Associate Professor. Faculty of Agricultural Sciences (University of Chile). e-mail: `jorgepq@uchile.cl`