Diego Grados Bedoya

I am a quality-driven bioscience engineer and applied statistician using interdisciplinary approaches to address sustainable development challenges in agriculture, focused on soil-crop-atmosphere interactions, agroecosystems analysis and remote sensing. During my involvement on international research projects with multidisciplinary partners, I have demonstrated excellent teamwork and communication skills. I am proficient in programming languages for data-processing applications and process-based modelling. I have also cultivated my enthusiasm for the creation of integrated solutions, focusing on the data science to translate information into knowledge.

Personal Data

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Relevant Experience

Jan 2020 - Mar 2020
Researcher - *KU Leuven*, Leuven - Belgium
Divison of MeBioS - Biosystems Department - Faculty of Bioscience Engineering
- Dissemination of research results in seminars, workshops and peer-reviewed journals.
Reference: Prof. Dr. Eddie Schrevens

Apr 2016 - Dec 2019
PhD Researcher - *KU Leuven*, Leuven - Belgium
Divison of MeBioS - Biosystems Department - Faculty of Bioscience Engineering
- Developing of multi-target and system modeling methodologies for the agroecosystems' sustainability assessment.
- Dissemination of results in seminars, workshops, peer-reviewed journals and international conferences.
- Mentoring and supervision of BSc and MSc thesis students in Peru (UNALM and UNCP) and Belgium (KU Leuven).
Reference: Prof. Dr. Eddie Schrevens

Nov 2014 - Apr 2019
Research Assistant - *VLIR/UOS-UNALM Project*, Lima - Peru
Strengthening of Smallholder Horticultural Systems Subproject
- Co-leading the study of soil-crop-environment interactions in the Peruvian Costal Desert.
- Installation of soil, meteorological and irrigation equipment.
- Design, installation and analysis of agricultural experiments under drip irrigation systems.
References: Prof. Dr. Eddie Schrevens, Prof. Dr. Guido Wyseure, Prof. Dr. Jan Diels

Sep 2013 - Dec 2018
Research Officer - *VLIR/UOS-UNALM Project*, Junin - Peru
Sustainable Agriculture in the Central Peruvian Andes Subproject
- Leading the design, installation and evaluation of agricultural experiments under rainfed conditions.
- Consolidation of rational databases, development of soil-crop-atmosphere models and advanced statistical techniques.
- Analysis and evaluation of agroecosystems using participatory approaches.
- Quantification of enviromental emissions using agroecosystems approaches.
References: Prof. Dr. Eddie Schrevens, Prof. Dr. Sady García

Feb 2013 - Apr 2019
Research Officer - *VLIR/UOS-UNALM Project*, Junin | Lima - Peru
Drone Technology in Agriculture Subproject
- Leading the feasibility study for uses of drone technology in agroecosystems.
- In charge of drone flights in Peruvian's Andes and Arid regions.
- Implementation and analysis of photogrammetric and GIS databases.
- Development of mathematical and statistical workflows for land use classification and field experiments' assessment.
References: Prof. Dr. Eddie Schrevens, MSc. Dries Raymaekers

Jan 2012 - Dec 2018
Research Officer - *VLIR/UOS-UNALM Project*, Junin - Peru
Watersheds Management Subproject
- Leading the study of soil-crop-environment interactions and hydrology in the Peruvian Central Andes.
- Installation of soil, climatological and hydrometric equipment.
- Implementation of databases, application of hydrological models and assessment of rainfall-runoff relations.
References: Prof. Dr. Eduardo Chávarri, Prof. Dr. Guido Wyseure

Education

Apr 2016 - Dec 2019
PhD in Bioscience Engineering, *Mechatronics, Biostatistics and Sensors* - KU Leuven, Belgium
Thesis Title: "Multi-target methodologies for the improvement of agricultural systems research - *Study cases at system and field level*". | Advisor: Prof. Dr. Eddie Schrevens

Jan 2007 - Dec 2011
BSc in Agricultural Engineering, *Water Resources* - Agrarian National University La Molina , Peru
Honor Thesis Title: "Analysis of flood peaks in small Andean watersheds, Junin Department, Peru (2011-2012 Period)". | Advisor: Prof. Dr. Eduardo Chávarri

Publications

1. **Grados, D.**, García, S., Schrevens, E., 2020. Assessing the potato yield gap in the Peruvian Central Andes. *Journal of Agricultural Systems*, 181, 102817. https://doi.org/10.1016/j.agsy.2020.102817.
2. **Grados, D.**, Reynafarje, X., Schrevens, E., 2020. A methodological approach to assess canopy NDVI–based tomato dynamics under irrigation treatments. *Journal of Agricultural Water Management*, 240, 106208. https://doi.org/10.1016/j.agwat.2020.106208.
3. **Grados, D.**, Schrevens, E., 2019. Multidimensional analysis of environmental impacts from potato agricultural production in the Peruvian Central Andes. *Science of The Total Environment*, 663, 927–934. http://doi.org/10.1016/j.scitotenv.2019.01.414.
4. **Grados, D.**, Schrevens, E., 2020. Cassava NDVI analysis: A nonlinear mixed model approach based on UAV-imagery. *Journal of Photogrammetry, Remote Sensing and Geoinformation Science*. [Accepted].
5. Reynafarje, X., **Grados, D.**, Siura, S., Casas, A., Schrevens, E., 2020. Seasonal and irrigation effects on growth development dynamics, production, quality, and water use efficiency of tomato production in the Semi-arid Peruvian Coast. *Scientia Horticulturae*. [Under review].

Relevant Conference Proceedings [Peer-Reviewed]

2019 **Grados, D.**, García, S., Schrevens, E., Nitrogen and water use efficiency under rain-fed potato agriculture: An experimental study. *Acta Horticulturae (1253, 243–252). International Symposium on Water and Nutrient Relations and Management of Horticultural Crops*, Istanbul, Turkey, 12-16 Aug 2018. http://doi.org/10.17660/actahortic.2019.1253.33.

2019 Reynafarje, X., **Grados, D.**, Casas, A., Schrevens, E., Effect of water stress after flowering stage on tomato crop yield and soil water content in the semi-arid Peruvian coastline. *Acta Horticulturae (1253, 279–286). International Symposium on Water and Nutrient Relations and Management of Horticultural Crops*, Istanbul, Turkey, 12-16 Aug 2018. http://doi.org/10.17660/actahortic.2019.1253.37.

2017 **Grados, D.**, Gil, R., Raymaekers, D., Schrevens, E., Developing of an automated UAV-based RGB imagery workflow analysis for land use evaluation. *European Federation for Information Technology in Agriculture, Food and the Environment*, Montpellier, France, 02-06 Jul 2017. ISBN: 978-2-85362-686-6.

2017 **Grados, D.**, Vetters, E., Heuts, R., Schrevens, E., A model based technical sustainability analysis of potato production systems in the Mantaro Valley, Central Highlands, Peru. *Acta Horticulturae (1154, 155-152). Symposium on Applications of Modelling as an Innovative Technology in the Horticultural Supply Chain*, Wageningen, The Netherlands, 11-14 Oct 2015. http://doi.org/10.17660/actahortic.2017.1154.20.

2016 **Grados, D.**, Vera, J., Schrevens, E., Corn-faba bean associations in the Peruvian Central Andes. *Acta Horticulturae (1128, 79-88). International Symposium on Horticulture in Developing Countries and World Food Production*, Brisbane, Australia, 19-22 Aug 2014. http://doi.org/10.17660/actahortic.2016.1128.11.

Teaching Experience

FA 2017 - 2019 Applied Multivariate Statistical Analysis - Master in Bioscience Engineering, **KU Leuven**
Teacher Assistant: I taught students how to analyze their databases using statistical software by leading R-tutorials. I was responsible for the practical sessions on data wrangling and visualization, matrix algebra, R-programming and advanced multivariate techniques. [80 students]

FA 2019 Biological Production Systems - Bachelor in Bioscience Engineering, **KU Leuven**
Teacher Assistant: I guided students during the discussion and practical sessions to assess agroecosystems. I taught them the essentials of process-based mathematical modelling and supported them on the development of their research papers. [25 students]

SP 2016 Ecosystems Modelling - Master in Bioscience Engineering, **KU Leuven**
Teacher Assistant: I taught students how to develop and utilize agroecosystems models at diverse scales by leading R-tutorials. I guided the practical sessions on mathematical and statistical concepts, data wrangling and visualization, R-programming. I taught them the fundamental topics on process-based modelling of agroecosystems: identification, implementation, calibration and validation. [10 students]

Fellowships

2020 **FONDECYT-CONCYTEC** Research Grant [5 500€]
2016 - 2019 **VLIR/UOS-UNALM** PhD Fellowship [82 000€]
2013 | 2014 | 2015 **VLIR/UOS-UNALM** International Scholar Fellowships [67 000€]

Languages

English: Full professional proficiency
French: Limited working proficiency
Italian and Dutch: Elementary working proficiency
Spanish: Native/Bilingual

Technical Skills

Programming R, Python, MATLAB, FORTRAN
Markup Markdown, LaTeX
Other RStudio, Spyder, SAS, Office, QGIS, GRASS GIS, Git, GitHub, Make, HPC