

Darío Javier Guevara Proaño

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ACADEMIC EMPLOYEMENT

- **University of California, Davis** Davis, California
Postdoctoral Scholar Jul. 2021 – Current

FORMAL EDUCATION

- **Escuela Politecnica Nacional** Quito, Ecuador
BSc in Electronics and Control Engineering; Grade: (27.3/30) Sep. 2010 – Oct. 2016
- **Universidad Técnica Federico Santa María** Valparaiso, Chile
Ph.D. Electronic Engineering; Grade: (100/100) Mar. 2017 – Jul.2021

CONTINUING EDUCATION

- **Reinforcement Learning Specialization** e-Course
Coursera Sep. 2020
- **Sensor Fusion Nanodegree** e-Course
Udacity Oct.2021 - Current

LANGUAGES

- **Spanish:** Mother tongue.
- **English:** Level C1.

COMPUTER AND SYSTEM SKILLS

- **Programming languages:** Python, C,C++
- **Scientific/Engineering software:** Matlab & Simulink, Numpy & SciPy, Pytorch, Git, Latex
- **Robotics software:** ROS, Gazebo, V-REP

RESEARCH EXPERIENCE

- **Escuela Politecnica Nacional** Quito, Ecuador
Research Assistant: Design of control strategies for mobile robotics Jun 2015 - Jun 2016
- **Advance Center of Electric and Electronic Engineering (AC3E)** Valparaiso, Chile
Research project (RO-077FA) for CETAQUA S.A.: Data acquisition and processing Oct 2018 - Dic 2018
- **Universidad Técnica Federico Santa María** Valparaiso, Chile
Multi-sensor cloud of data for phenotyping and motion estimation of automated machinery Mar 2017 - Jun 2021
- **University of California, Davis** Davis, United States of America
AI-Enabled Sensing and Forecasting of Grape Production under Extreme Heat Jul 2021 - Current

TEACHING EXPERIENCE

- **Universidad Técnica Federico Santa María** Valparaiso, Chile
Teaching assistant: Computer Seminar I (ELO325) Aug. 2019 - Mar. 2020

JOURNAL PUBLICATIONS

- **A linear algebra controller based on reduced order models applied to trajectory tracking for mobile robots an experimental validation:** International Journal of Automation and Control, Volume 13, pg. 176-196
- **Mechatronic terrestrial LiDAR for canopy porosity and crown surface estimation:** Computers and electronics in agriculture, Volume 146, pg. 104-113
- **Fruit detection in an apple orchard using a mobile terrestrial laser scanner:** Biosystems engineering, 2019, vol. 187, p. 171-184.
- **Fruit detection, yield prediction and canopy geometric characterization using LiDAR with forced air flow:** Computers and Electronics in Agriculture, 2020, vol. 168, p. 105-121
- **LFuji-air dataset: Annotated 3D LiDAR point clouds of Fuji apple trees for fruit detection scanned under different forced air flow conditions:** Data in Brief, 2020, vol. 29, p. 105-248.
- **Analyzing and overcoming the effects of GNSS error on LiDAR based orchard parameters estimation:** Computers and Electronics in Agriculture, 2020, vol. 170, p. 105-255.
- **Point cloud-based estimation of effective payload volume for earthmoving loaders:** Automation in Construction, 2020, vol. 117, p. 103207.
- **Comparison of 3D scan matching techniques for autonomous robot navigation in urban and agricultural environments:** Journal of Applied Remote Sensing, 2021, 15(2), 024508.
- **Assessment of Multispectral Vegetation Features for Digital Terrain Modeling in Forested Regions:** IEEE Transactions on Geoscience and Remote Sensing, 2021.
- **3D Spectral Graph Wavelet Point Signatures in Pre-Processing Stage for Mobile Laser Scanning Point Cloud Registration in Unstructured Orchard Environments:** IEEE Sensors Journal, 2021.

CONFERENCES

- **A new approach of a Numerical Methods Controller for self-regulating processes:** 2016 IEEE Biennial Congress of Argentina (ARGENCON), pg. 1-6
- **Fruit Detection and Localization from RGB-D Sensors:** Annual Catalan Meeting on Computer Vision (ACMCV'18), Oral presentation
- **Cluster-based scan registration for vehicle localization in urban environments:** 2020 IEEE Robotic Computing (IRC).

CONTRIBUTED CHAPTERS

- **An Approach of a Numerical Methods Controller for Nonlinear Chemical Processes:** Impact and Advances of Automatic Control in Latinoamerica, pg. 52-58

AWARDS AND SCHOLARSHIPS

- | | |
|---|---|
| • Rossi Postdoctoral Scholar
<i>Departments of Viticulture & Enology, University of California, Davis</i> | Davis, California
<i>Jul 2021 - current</i> |
| • Conference Attendance Scholarship
<i>DGIIP - Universidad Técnica Federico Santa María</i> | Valparaiso, Chile
<i>Nov 2020</i> |
| • PhD Scholarship
<i>Agencia Nacional de Investigación y Desarrollo (ANID), Chile</i> | Valparaiso, Chile
<i>Mar 2020 - Jul 2021</i> |
| • Awarded poster
<i>AC3E Center</i> | Valparaiso, Chile
<i>Oct 2019</i> |
| • PhD Scholarship
<i>Universidad Técnica Federico Santa María</i> | Valparaiso, Chile
<i>Mar 2017 - 2019</i> |
| • Incentive program for scientific research
<i>DGIIP - Universidad Técnica Federico Santa María</i> | Valparaiso, Chile
<i>Mar 2018</i> |
| • Incentive program for scientific research
<i>DGIIP - Universidad Técnica Federico Santa María</i> | Valparaiso, Chile
<i>Mar 2019</i> |
| • Doctoral Consortium for ISRR
<i>ISRR committe</i> | Puerto Varas, Chile
<i>Dec 2017</i> |

REFERENCES

- **Mason Earls:** Postdoctoral supervisor +1 415 870 0204, mason.earles@gmail.com
- **Elisabeth J. Forrestel:** Postdoctoral supervisor +1 530 400 7629, ejforrestel@ucdavis.edu
- **Fernando Auat Cheein:** PhD supervisor +56 9 96759124, fernando.auat@usm.cl
- **Andres Rosales:** BSc supervisor +593 99 287 3745, andres.rosales@epn.edu.ec
- **Eduard Gregorio:** Research collaboration +34 973 70 26 73, eduard.gregorio@udl.cat