

Alexandre Cortiella

Boulder, CO, USA 80302 • (+1) 720-755-1584

alexandre.cortiella@gmail.com • es.linkedin.com/in/alexandrecortiella • www.alexcortiella.com

Authorized to work in the United States.

SUMMARY

Curious aerospace engineer passionate about science and technology. I aspire to become an expert and make useful contributions to the aerospace sector. I am experienced in system identification and machine learning. Seeking opportunities in space engineering.

EDUCATION

Ph.D. Aerospace Engineering University of Colorado Boulder, Boulder, CO Ph.D. Thesis: Data-driven model development and identification of dynamical systems.	<i>Spring 2021</i>
M.S. Aerospace Engineering University of Colorado Boulder, Boulder, CO	<i>Spring 2018</i>
B.S. Aerospace Engineering Technical University of Catalonia, Barcelona, Spain B.S. Thesis: Study of numerical techniques for structural optimization in aeronautics.	<i>Spring 2014</i>

EXPERIENCE

Graduate research assistant, Aerospace Mechanics Research Center Boulder, CO <ul style="list-style-type: none">Developed a dynamical system identification algorithm via non-convex optimization and sensitivity/adjoint methods.Devised novel algorithms for data-driven dynamical model identification from noisy data using sparse regularization and machine learning techniques.Implemented finite element thermal-structure and fluid-structure interaction algorithms with moving meshes.Presented research at various workshops and conferences including SIAM Computational Science and Engineering 2021.Served as a teaching assistant for Structures and Materials course, mentored students, and prepared lectures.	<i>January 2017 - Present</i>
Research Scientist, Laboratory for Atmospheric and Space Physics Boulder, CO <ul style="list-style-type: none">Analyzed data from Juno spacecraft to identify plasma and radiation particles of Jupiter's radiation belts.Performed Monte Carlo simulations and sensitivity analyses using ESA's Multi-Layered Shielding Simulation Software.Developed mathematical models for Jupiter radiation high-energy particle environment.Collaborated with and reported results to NASA Jet Propulsion Laboratory.	<i>June 2018 - August 2018</i>
GN&C Researcher, UPC Nanosat Lab Barcelona, Spain <ul style="list-style-type: none">Designed and implemented attitude determination and control algorithms for a Earth Observation nanosatellite.Programmed a spacecraft flight dynamics simulator for Low Earth Orbit nanosatellite missions.Planned, executed, evaluated, and supervised all phases of spacecraft flight dynamics, estimation, and control operations.Collaborated and scheduled critical review meetings with industry partners from Elecnor Deimos.	<i>May 2015 - August 2016</i>

SKILLS

Communication

- Languages: Spanish (Native), Catalan (Native), English (Professional), French (Basic).
- Presented and published my research in prestigious conferences and journals.
- Mentored and taught undergraduate and graduate engineering students.

Leadership

- President of the CU Catalan Club - Managed and organized events to promote Catalan culture.
- Founding member of CU Graduate Colloquium Seminars - Organized and coordinated talks and workshops.
- Captain of a Federated Handball team – Federated Handball player for 17 years in three different teams.

Technical

- MATLAB & Simulink, Python, C++, HTML-CSS.
- Solid Works, CATIA, AutoCad, ANSYS.
- System Identification, Machine learning, Finite element analysis, Numerical simulation, Spacecraft dynamics.

HONORS AND AWARDS

- Awarded a SIAM Student Travel Award CSE 2021 Conference (2021).
- Awarded a Graduate International Travel Grant by University of Colorado (2019).
- Awarded a Conference Travel Grant by University of Washington (2019).
- Ph.D. research funded by National Science Foundation (NSF) Grant: CMMI-1454601 (2018).
- Winner of the Space Station Design Challenge at the Institute of Space Systems, Germany (2016).
- Recipient of a Balsells Fellowship for graduate studies at University of Colorado Boulder (2016).
- Recipient of a Research Fellowship by Institut d'Estudis Espacials de Catalunya (IEEC) (2015).
- Distinguished B.S. Thesis Award for being among the top 5% (2014).