

# Victorio Úbeda Sosa

✉ victorio@kth.se

in vicubso

☎ +34 637 188 955

☎ +46 762 608 820

I am a master student in mathematics and a mechanical engineer. I am passionate about the areas of applied mathematics that lie on the intersection between numerical methods, probability theory, and optimization. Having performed research on a wide range of topics such as optimal control, topology optimization, deep learning, quantum computing, and pricing of financial derivatives, I thrive in a multidisciplinary research environment where I can apply my mathematical skills to solve real-world problems.

## Experience


- Sep 2023 – Present **Data scientist.** *Svenska Handelsbanken.* Innovation department.
  - Researching quantum computing algorithms with applications in finance.
- Jun 2023 – Aug 2023 **Visiting researcher.** *Technical University of Denmark – Department of mechanical engineering*
  - Research on deep learning applications for topology optimization.
  - Funded by Danish Data Science Academy (DDSA).
- Sep 2022 – Present **Teaching assistant.** *KTH Royal Institute of Technology – Department of mathematics.*
  - SF1522 Numerical Computations.
  - SF1516 Numerical Methods and Basic Programming.
- Aug 2022 – Jul 2023 **Data analyst.** *Tink AB – Enrichment categorization team.*
- Mar 2019 – Jul 2019 **Research fellow.** *University of Castilla-La Mancha – Department of applied mathematics*
  - Research on variational methods for dynamical systems.
- Sep 2018 – Jul 2019 **Teaching assistant.** *University of Castilla-La Mancha.*
  - Physics course for first-year engineering students.
- Jul 2017 – Aug 2017 **Research intern (voluntary position).** *University College Dublin – Dynamics and control group.*
  - Development of an attitude determination and control system (ADCS) for EIRSAT-1 satellite.
- Sep 2015 – Jul 2016 **Teaching assistant.** *University of Castilla-La Mancha.*
  - Courses in programming and physics for first-year engineering students.
- Dec 2015 – Jan 2016 **Research fellow.** *University of Castilla-La Mancha – Department of applied mathematics.*

## Education

- Jan 2024 – Present **Master's thesis.** Technical University of Denmark (DTU).  
Thesis title: *On the use of deep learning for multi-resolution topology optimization.*
- Aug 2021 – Present **MSc, Mathematics.** Royal Institute of Technology (KTH)/Stockholm University (SU).
- Sep 2015 – Jun 2021 **BSc, Mathematics.** Universidad Nacional de Educación a Distancia (UNED)  
Exchange year at Linköping University (LiU).  
Discontinued at the start of my master's studies.
- Sep 2014 – June 2019 **BSc, Mechanical Engineering.** Universidad de Castilla-La Mancha (UCLM)  
Thesis title: *Optimal attitude control of satellites.*

## Research Publications

## Journal Articles

- 1 P. Pedregal and V. Úbeda, "Optimal attitude control of satellites," *SeMA Journal*, 2024.  DOI: 10.1007/s40324-024-00354-8.

## Conference Proceedings

- 1 D. Sherwin, J. Thompson, D. J. McKeown, W. J. O'Connor, and V. Úbeda Sosa, "Wave-based attitude control of EIRSAT-1, 2U cubesat," in *2nd Symposium on Space Educational Activities*, Budapest, 2018.
- 2 V. Úbeda Sosa, D. Sherwin, J. Thompson, D. J. McKeown, and W. J. O'Connor, "Modelling EIRSAT-1 dynamics to validate and test a novel attitude control system," in *2nd Symposium on Space Educational Activities*, Budapest, 2018.

## Skills

---

Languages	📖 Spanish (native proficiency), English (full professional proficiency), Swedish (limited working proficiency), German (limited working proficiency).
Coding	📖 Python, Qiskit, Pytorch, Matlab, Julia, Fortran, L <sup>A</sup> T <sub>E</sub> X, ...
Misc.	📖 Academic research, teaching, leadership, typesetting and publishing, ...

## Miscellaneous

---

### Voluntary experience

Nov 2021 – Oct 2023	📖 <b>Co-founder.</b> <i>Stockholm's Master's in Mathematics Seminar.</i>
Sep 2022 – Jul 2023	📖 <b>Board member.</b> <i>KTH AI Society.</i>
Mar 2022 – Aug 2022	📖 <b>Electronics and software team lead.</b> <i>KTH Hyperloop.</i>
Sep 2015 – Jun 2017	📖 <b>Electronics engineer.</b> <i>UCLM Formula student.</i>
Sep 2016 – Jun 2017	📖 <b>Student representative (delegado).</b> <i>University of Castilla-La Mancha.</i>

## References

---

Available on Request