Joana Fonseca

Curriculum Vitae

Education

2017–2022 **Decision and Control Systems**, ***Ph.D***, KTH Royal Institute of Technology, Sweden, Supervised by *Karl Henrik Johansson* and *Jonas Mårtensson*, working on marine robotics, control, estimation, and target tracking.

2016–2017 **Automatic Control**, ***M.Sc.***, University of Porto, Portugal, Focus Control and Robotics. Supervised by *Maria R. Pinho* and *Aníbal Matos*. GPA: 17/20 (Top 1%).

2015 **Systems & Control**, ***M.Sc.***, Delft University of Technology, Netherlands, One semester of studies within the Masters of Systems and Control, GPA: 17/20.

2012–2015 **Electrical and Computer Engineering**, ***B.Sc.***, University of Porto, Portugal. Specialization in Automation, GPA: 17/20 (Top 1%)

Experience

2019-current **Teaching Assistant in *Underwater Technology***, *SMaRC*, KTH, Sweden.
This course focuses on control for AUVs. Taught 3 years of this Master level course.

2019-current **Master Thesis supervisor**, *Supervised about 10 MsC thesis*, KTH, Sweden.
Most master thesis projects were related to marine robotics, control, estimation, & learning.

2018-current **Bachelor Thesis supervisor**, *Robotics, Control, & Learning*, KTH, Sweden.

2018-current **Member of the WOP@KTH committee**, *Network that supports women PhD students and PostDocs across KTH and promotes gender equality* .

2017-2020 **Teaching Assistant in *Nonlinear Control***, *DCS - EECS*, KTH, Sweden.
This course focused on Lyapunov analysis and controller design for nonlinear systems. Taught 3 years of this Master level course.

2014–2017 **Public Relations**, *University of Porto*, Portugal.
Spokesperson in a variety of events aimed at high-school students in Portugal, to teach them about electrical engineering and computer science and motivate them in their studies.

2016 **Teaching Assistant in *Projeto FEUP***, *University of Porto*, Portugal, Taught 1 year of this Bachelor level course which focused on electronics.

2014–2015 **Teaching Assistant in *Mathematics and Physics***, *University of Porto*, Portugal, Taught this Bachelor students continuously for 12 months. It consisted on helping bachelor students improve their results relating to mathematics and physics.

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Publications

To be submitted — **Journal in Field Robotics**, *Experiments in the Baltic sea for adaptive front tracking using an USV and satellite data*, *M. Lock, J. Fonseca, S. Bhat, I. Stenius, K. Johansson*.

2022 — **IROS Conference Paper**, *USV local data and remote satellite data fusion for Algal Bloom Tracking in the Baltic Sea*, *A. Rocha, J. Fonseca, M. Aguiar, K. Johansson*.

2021 — **OCEANS Conference Paper**, *3D Tracking of a River Plume Front with an AUV*, *D Teixeira, J. Sousa, R. Mendes, J. Fonseca*.

2021 — **OCEANS Conference Paper**, *Algal Bloom Front Tracking Using an Unmanned Surface Vehicle: Numerical Experiments Based on Baltic Sea Data*, *J. Fonseca, M. Aguiar, J. Sousa, K. Johansson*.

2020 — **CONTROLO Conference Paper**, *Cooperative circumnavigation for a mobile target using adaptive estimation*, *J. Fonseca, J. Wei, K. Johansson, T. Johansen*.

2019 — **IROS Conference Paper**, *Cooperative decentralised circumnavigation with application to algal bloom tracking*, *J. Fonseca, J. Wei, K. Johansson, T. Johansen*.

2017 — **Master Thesis**, *Optimal Control Applied to AUVs*, Published in University of Porto.

2017 — **Conference Poster**, *Design of Minimum Time Trajectories for Autonomous Underwater Vehicles*, Presented at international NHOC2017, and national EPCO2017.

Awards

2019 — **Jubileumsanslaget '19 Grant**, *Won scholarship for travelling to Macau in China and attend IROS'19*.

2017 — **Program of Excellence of KTH**, *Award for the most promising new women PhD students in the School of Electrical Engineering of KTH*.

2017 — **Research Scholarship**, *University of Porto*, Portugal, Master Thesis on Optimal control applied to AUVs.

2015 — **ERASMUS Scholarship**, *Won scholarship for exchange studies in T.U.Delft*.

2014 — **Research Scholarship**, *University of Porto*, Portugal, Research on Fourier series and transforms in the context on functional analysis..

Languages

Expert Portuguese, English. **Intermediate** Spanish, Swedish. **Beginner** French, Mandarin.

Computer skills

Programming C, Python, LaTeX, Linux **Math tools** Matlab, AMPL

Interests

Professional Control, Marine & Space Robotics, Optimization, Machine Learning.

Personal Tailoring, Drawing, Swimming, Cycling, Dancing, Climbing, Travelling.

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