

Fidel Echevarría

Aerospace Engineer

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Last updated on November 3, 2019

Proactive aerospace engineer. Creative and agile problem solver, strongly motivated to teamwork. In continuous search of learning. Fascinated with the endless possibilities technology is opening in our civilization. Really interested in autonomous driving, artificial intelligence, renewable energies and the important role of technology in poverty reduction.

Experience

2016- **Flight Dynamics Research and Development Engineer**, *UAV Navigation*, Madrid.

Research and development in the following areas applied to aircraft autopilots and dynamic estimation:

- Flight control algorithms and logics. Control/stability augmentation systems, classical control theory.
- State estimation techniques for aircraft dynamics. Sensor fusion techniques (GNSS, ADS, IMU, MAG).
- Sensor calibration techniques. Kalman filtering, batch optimization, SVD.
- Aircraft simulation. Dynamics, kinematics, atmospheric perturbances.
- Computer vision systems for autonomous aircraft navigation.

2015-2016 **Flight Control Engineering Intern**, *UAV Navigation*, Madrid.

Involved in the development and validation process of several aircraft simulators and control systems.

Education

2019- **M.Sc. Research in Artificial Intelligence**, *Universidad Nacional de Educación a Distancia (UNED)*.

Key subjects: Bio-inspired neural methods, Evolutionary computation, Computer vision, Perceptual and autonomous robotics, Machine learning methods, Research methodology for intelligent systems.

Thesis: *Identification of Aircraft Dynamics Using Neural Networks*.

2018-2019 **Self-Driving Car Engineering Nanodegree**, *Udacity*.

Key subjects: Deep Learning, Computer Vision, Sensor Fusion, Localization, Model Predictive Control, Optimal Path Algorithms, System integration (ROS).

2010-2015 **B.Sc. Aerospace Engineering**, *Universidad Politécnica de Madrid (UPM)*.

Key subjects: Mechanical Design, Flight Mechanics, Aerodynamics, Fluid Mechanics, Thermodynamics, Aerospace Materials, Structures, Electronics, Project Management, Aerospace Propulsion.

Thesis: *Design of a Flight Control System Optimization Tool for Aerial Vehicles*.

Skills

Experience fields. Artificial intelligence, computer vision, numerical optimization, sensor fusion, automation and control, dynamic system simulation, data analysis, embedded software development, user interface design, graphical design, version control.

Tools and technologies. C/C++, Python, R, Tensorflow, OpenCV, Qt, Latex, Microsoft Office, Git, SVN, Linux, Bash, MATLAB, Simulink, Fortran, CATIA.

Languages

Spanish Fluent. Mother tongue.

English Fluent. CEFR Level C1 (2014).

French Basic skills. CEFR Level A2 (2007).

Personal Projects

- 2018 **Aircraft Trajectory Optimization.** Analysis tool for estimation of optimal aircraft trajectories in air races.
Link: <https://fidelechevarria.github.io/aircraft-trajectory-optimization>.
- 2017 **Computing and Engineering Blog.** Site for hosting personal projects and repositories related with computing and engineering.
Link: <https://fidelechevarria.github.io>.

Additional Training

- 2017 **RPAS Pilot Certification**, ATO 238, Madrid.
- 2015 **Advanced CATIA V5 Certification**, ETSIAE (UPM), Madrid.
- 2014 **MATLAB Course**, ETSIAE (UPM), Madrid.