Fidel Echevarría

Aerospace Engineer

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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

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

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

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.

Education

2010-2015 **B.Sc. Aerospace Engineering**, *Technical University of 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*.

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).

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

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 **Computing and Engineering Blog.** Site for hosting personal projects and repositories related with computing and engineering.

Link: `https://fidelechevarria.github.io`.

2018 **Aircraft Trajectory Optimization.** Development of an analysis tool which enables a temporal-space study of optimal aircraft trajectories for application in air races.

Link: `https://fidelechevarria.github.io/aircraft-trajectory-optimization`.

Additional Training

2014 **MATLAB Course**, *ETSIAE (UPM)*, Madrid.

2015 **Advanced CATIA V5 Certification**, *ETSIAE (UPM)*, Madrid.

2017 **RPAS Pilot Certification**, *ATO 238*, Madrid.