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
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david.torres.ocana

LANGUAGES

 Mother tongue

 Full professional proficiency

SKILLS

Innovative spirit

Technical enthusiast

Self-challenging

Growth mind-set

Self-motivated

Team building

INTERESTS

Robotics and Autonomous vehicles

Artificial intelligence

Global economics

Emotional intelligence

Hiking: TMB, etc.

Sports (fitness and running)

Politics and international affairs

More about me:

[See my favourite books](#)

David Torres Ocaña

Robotics perception engineer

Teaching robots how to understand our world

LinkedIn: <https://www.linkedin.com/in/davidtorresocana>

Hacker Rank: https://www.hackerrank.com/david_torres_oc1

GitHub: <https://github.com/DavidTorresOcana>

Kaggle: <https://www.kaggle.com/davidtorresocana>

WORKING EXPERIENCE

Computer vision research engineer

Toyota Motor Europe | Freelance | Apr 2019 - To date

- Machine learning and Computer vision algorithms for Autonomous Driving:
 - Plane estimation, fisheye monocular depth prediction, SLAM
 - Cameras (mainly fisheye), LiDAR, Radar, GNSS, etc.
- Software integration, driver development, prototyping and testing
- RTMaps. Python and C++. Pytorch, Tensorflow, OpenCV, CUDA.
- Embedded: R-Car V3H, DrivePX2

Deep Learning Engineer

Jaguar Land Rover | Freelance | Mar 2018 - Mar 2019

- Deep learning algorithms development (Tensorflow, OpenCV, TensorRT) for Autonomous driving and cabin monitoring:
 - Object detection/tracking, image segmentation, monocular depth prediction
 - Sensors: Cameras (stereo and monocular) and LiDAR
- Networks optimization and real time deployment
- Driveworks, ROS. Nvidia Drive PX2 and Jetson TX2. Python/C++

Autonomous Parking system owner

Jaguar Land Rover | Freelance | Jul 2017- Mar 2018

Systems Owner of a L3 parking feature

- Sensor set selection (Cameras, LiDAR, Radar, ultrasounds, etc.)
- Software and hardware architecture design, algorithm selection and validation, prototyping, testing

Founder

DBX Drones | Apr 2015- Nov 2016

Mechanical design, [software](#) development (control/guidance) and testing. Matlab/Simulink, embedded C/C++

Sensor fusion software engineer

Formula One Management Ltd. | Freelance | Oct - Dec 2015

Attitude and localization estimation, sensor fusion algorithms: EKF, etc. IMU, GPS and passing sensors.

Matlab/Simulink, code generation, C/C++ development, distributed sensors.

SOFTWARE SKILLS AND TECHNICAL KNOWLEDGE

Software skills

- C/C++ and Python: Proficient
- Tensorflow, Pytorch, TensorRT
- OpenCV, Driveworks, CUDA
- Docker, Linux environment development
- Matlab/Simulink/Stateflow/Coder: Advance level
- Git/Tortoise repositories

Updated on 13/07/2019

PERSONAL RESEARCH

Unsupervised fisheye monocular depth estimation | 2018 - To date

Drone navigation and collision avoidance: Monocular vSLAM (Jetson TX2) + IMU/GPS on EKF | 2018 - To date

Vehicle detection with CNNs [See here](#)

Adaptive and Fault-Tolerant flight control systems with Adaptive Neural Networks [See here](#)

PUBLICATIONS

[1] D. Torres, H.-S. Shin and A. Tsourdos, "Development of a Nonlinear Reconfigurable F-16 Model and Flight Control Systems Using Multilayer Adaptive Neural Networks," *IFAC*, pp. 138-143, 2015.

[2] D. Torres, "Adaptive and fault-tolerant flight control systems," Cranfield university, Cranfield UK, 2014.

OTHER COURSES

Advanced C++ (Udemy)

Programming for Robotics - ROS (ETH-Zürich)

Introduction to Artificial Intelligence (ai-class, Stanford University)

Leading Effectively (Coursera)

Practical programming in C (MIT OCW)

Technical Knowledge

- Machine learning: [Object detection](#), image segmentation, monocular depth prediction, reinforcement learning
- Computer vision: Filtering, geometric transforms, Features detection, Matching & Tracking, etc.
- Bayesian inference and optimal filtering
- Data/Sensor Fusion
- Nonlinear optimization: GA, PSO, gradient based, etc
- Localization and mapping (SLAM, v. Odometry), [attitude estimation](#), tracking, etc.
- Good Mathematics base

Methodologies

- AGILE: SCRUM/KANBAN (Taiga, Trello and Jira)

ACADEMIC QUALIFICATIONS

Deep Learning specialization | 2017 - 2018

Coursera | Deep Learning AI | Andrew Ng

Neural Networks and Deep Learning, Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization, Structuring Machine Learning Projects, Convolutional Neural Networks and Sequence Models.

Robotics specialisation | 2018

Coursera | University of Pennsylvania

Dynamics and modelling, linear and non-linear control. Path planning. Image geometry, projective, pose estimation, multiview geometry. Gaussian learning, Bayesian estimation and filtering, Localization and mapping.

Cranfield University UK | 2013-September 2014

MSc Autonomous vehicle dynamics and control | 77.25/100

Course modules: Guidance and Navigation Systems, Modelling of Dynamic Systems, Sensor Fusion, Introduction to Aerodynamics, Autonomous Systems and Operations, Data and Information Fusion, Fault Diagnosis and Fault Tolerant Control, Autonomous Systems Control.

- Thesis: [Adaptive and Fault-Tolerant flight control systems with Adaptive Neural Networks](#) [See here](#)

Coursera | 2012 - 2013 [GitHub](#)

Machine Learning | Coursera. Andrew Ng

Supervised, unsupervised and online learning. Classification and regression problems. Computer vision. Optimization algorithms. Neural networks design, implementation and training. SVM. Principal Component Analysis.

Introduction to Artificial Intelligence. AI-class | 2011

Stanford. Online course

Statistics, Uncertainty, and Bayes networks, Machine learning, Logic and planning, Image processing and computer vision, Robotics and robot motion planning, Natural language processing and information retrieval.

Polytechnic University of Madrid | ETSIA | 2010-2014

Degree in Aeronautical Engineering

5 years degree equivalent to Bachelor + Master in Space vehicles

Polytechnic University of Madrid | EUITA | 2007-2010

Degree in Aeroengines | 7.9/10, Summa Cum Laude

3 years degree on aerospace technology and aeroengines

- Best academic record