

David Matos

Curriculum Vitae



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David Matos
Personal Website

PERSONALIA

NAME, INITIALS	Matos Rodriguez, D.E.
FIRST NAME	David
STREET, HOUSE NUMBER	De Lampendriessen 31
ZIPCODE, CITY	5612 AH, Eindhoven
COUNTRY	the Netherlands
DATE OF BIRTH	06/12/1993
PLACE OF BIRTH	Panama, Panama
NATIONALITY	Panamanian
GENDER	Male

EXPERIENCE

University Racing Eindhoven, Netherlands
Accumulator Engineer

09/2018 - 09/2019 (PT)

TU Eindhoven's Formula Student team, the perfect environment to apply theoretical knowledge, where I designed some of the accumulator internals such as brackets, mounts or any other support for PCBs, which were then 3D printed. Additionally, performed Finite Element Analysis on components to make them up to spec. Furthermore, I had the final responsibility of the Engineering Design Judging team, which defends all technical design choices made at the competition.

Fiat Chrysler Automobiles, United States
Catalyst Development Engineer

07/2016 - 07/2017 (FT)

Responsible for resolving build issues related to powertrain to maintain build timing. Also responsible for reviewing with other powertrain engineers part requirements for each mule/proto build. Finally, develop, review and publish Bill of Materials in PDB mainframe database.

Florida Institute of Technology Formula Team, United States
Suspension Team Lead

05/2015 - 09/2016 (PT)

Led a subteam of 5 people making sure deadlines, and all design requirements were met for the competition. Performed a finite element analysis of the suspension uprights using ANSYS workbench, along with its design in Solidworks. Also manufactured some suspension parts using lathe, milling machine and welded suspension into the chassis.

LANGUAGES

ENGLISH	Advanced
DUTCH	Intermediate
SPANISH	Native

EDUCATION

09/2018 - 10/2020

M.Sc. Automotive Technology

Eindhoven University of Technology, Netherlands

Department of electrical engineering, signal processing systems group.

Thesis title: "Analysis of multiple modality object detectors and 3D multiple object tracking"

09/2012 - 09/2016

B.Sc. Mechanical Engineering

MAGNA CUM LAUDE

Florida Institute of Technology, United States

Senior Design Project: Design of a Formula Student car for FSAE Michigan Competition.

PROJECTS

Pointnet detections with ROS

PyTorch, Python, ROS, Git

Implemented SoA object detector in KITTI with ROS. Detections are visualized in LiDAR and camera space using RVIZ. Personal [github project](#)

Object Detection and Tracking

PyTorch, Python, ROS, Git

Benchmarked different object detectors and implemented multiple affinity measures for data association in a 3D Multiple object tracking algorithm. In addition, implemented 3D MOT algorithm on a vehicle using ROS operating system. Final Thesis for my Masters Degree.

Robust Semantic Segmentation

TensorFlow, Python

Implemented network on which different data augmentation techniques were used to determine its effect on a network performance. Google Cloud was used for training given its vast resources. Results were tested on synthetic Synthia Dataset. Team of 2 people

CityScapes Semantic Segmentation

TensorFlow, Python

Implemented network on which different experiments were done such as changing the optimizer, adding regularization and using full input size images and downsampled images to determine effect on the network. Additionally, Google Cloud was used for training on the CityScapes dataset. Team of 2 people.

Kaggle Speech Recognition

TensorFlow, Python

Implemented network which consists of correctly predicting 10 different words from an audio file, which is converted to an spectrogram for input to CNN for training. Competition hosted by Kaggle. Team of 5 people

Kitti data to Bag tool

C++, ROS, Git

A tool to convert raw data from the automotive KITTI dataset to a ROS bag, using the ROS PointCloud Library to convert the point clouds. Personal [github project](#)

Plant Instance Segmentation

PyTorch, Python, Git

Implemented instance segmentation network Mask-RCNN to count and segment plants on a private dataset. Evaluated model qualitatively and quantitatively using COCO metrics. Training was performed on Google Cloud Console.

INTERNSHIPS

09/2019 - 12/2019

ViNotion, Netherlands

License Plate Obfuscation Effect on Object Detection Performance

COMPUTER SKILLS

PROFICIENT WITH Python, PyTorch, TensorFlow, ROS,
Matlab, Git, OpenCV

FAMILIAR WITH Docker, C++

REFERENCES

Available upon request.