Oliver Borel

Machine Learning Engineer with industry experience developing 3d object detection ML models and software in the AV industry, navigation algorithms for a globally sold SLAM system as well as experience with control for UAVs and robot arms.

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PROFESSIONAL EXPERIENCE

Oxa, Oxford — *Semantic Understanding Engineer*
Self driving software
December 2022 - Current
Responsibilities:
- Design production ready 3D object detection ML models and algorithms (vision, lidar, radar, early/late fusion multi-modality) for deployed AV software. Python training/data, C++ and custom cuda kernels deployment
- Contribute to software lifecycles (CI/CD, regression/unit testing).
- Provide support, features and bug fixes to customer teams

Achievements:
- Led the training and deployment (to customer code) of a vision based model with new night time capabilities
- Contributed to design, training and deployment of new multi-modality (vision/lidar) architectures
- Implemented late fusion vision-radar algorithms (customer code)
- Improved deployed vision based model recall and precision by leveraging simulation and data augmentation (generative models)
- Streamlined model training and validation process with cloud computing

Mo-Sys Engineering, London — *Computer Vision Engineer*
Camera tracking and virtual production software and robotics
February 2021 - December 2022
Responsibilities:
- Provide ongoing R&D and support (C++ software and hardware / sensor sourcing and specification) for a globally sold SLAM product
- Create and maintain SLAM, camera tracking and calibration C++ code
- Provide technical guidance to team members developing software for autonomous robotics (drone and AGV)

Achievements:
- Lead developer for a graph based (bundle adjustment) calibration algorithm for film and broadcast lenses
- Miniaturise and optimised (CPU / accuracy) a globally sold SLAM system

STING (WECORP) Industries, London — *Perception Engineer*
Ethics first defence robotics and software
April 2020 - December 2020

Responsibilities:
- Create tracking and SLAM software for military grade UAV
- Maintain, test, validate sensors (lidars, stereo cameras, IMUS)

Achievements:
- Developed custom odometry software for accurate pose estimation
- Updated codebase from Python to C++

NXP Semiconductors, Southampton — *Student Placement*
August 2016 - August 2017

EDUCATION

ISAE SUPAERO, Toulouse — *Aerospace Engineering Space Imaging, Navigation and communication (MSc)*
August 2018 - October 2020
15.1/20 - CGPA: 3.47/4

University of Surrey, Guildford — *Electronics engineering with space systems (BEng)*
October 2014 - June 2018

First class honours.

SKILLS

Programming:
Advanced: C++, Python
Intermediate: Cuda-C++, C, JS, Matlab.

Tools / environments:
GCP, AWS, ROS, Simulink, Unreal Engine, Unix, Blender

GCP cloud computing:
Vm instances, automated cloud run jobs, GKE cluster

Computer vision:
Dataset curation and management (fiftyone, GCP)
Model training (Pytorch, tensorflow)
Model deployment (C++ ONNX, Torchlib, Custom cuda kernels)
Graph based bundle adjustment (G2o, Ceres)

Communication: Bilingual and international background

Problem solving: Fast paced high pressure start/scale up environments

LANGUAGES

English and French native, Spanish B1

INTERESTS

FPV Racer drone (building and flying)
Private Pilot License (Robin DR400)
Water-Polo