Peter Huang

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Summary

A result-driven, software and system engineer with over 8 years experience software and system engineering with diverse skillset across multi-diciplinaries. Specilized in the areas of mapping and localization, sensor fusion, and control of robotic system.

Experience

Bosch Melbourne, Australia

Lead Software & System Engineer *Jun 2018 – Present*

Reporting to engineering manager, responsible for delivering software product/service for various customers including Victoria goverment and OEMs through - requirement elicitation, system architecture design, feature development, customer meetings and cross-regional colaborations.

- Regional number 1 in successful demonstration of full automated driving system for 2 million dollar government funded project - Connected Automated Vehicle over two years. Successfully integrate Bosch Radar Road Signature into AD system; Lead team in development of HD planner and feature maps creation to achieve highly accurate radar and video only localization on Victoria rural highway without GPS. Conduct mapping activities, creation of first Radar Road Signature map and lidar lane map in Australia.
- Design novel approach for developing HD planner map creation pipeline to achieve centimetre accuracy. Achieve centimetre accuracy of localization and mapping through multi-beam lidar intensity calibration, multi-sensor calibration, fusion of GPS inertial sensor and vehicle odometry, and optimization of multi-modal localizer.
- Research and develop graph based visual SLAM algorithm using stereo video camera; Deep learning based lane marker detection using semantic segmentation. Successful creation and deployment of multi-layer spatial data visualization website for analysis and critical decision making.
- Third price winner of machine learning business innovation competition, and lead Australian team for Bosch global AI challenges.

Blackmagic Design Melbourne, Australia

Software Engineer *Jun 2014 – Jun 2018*

Reporting to software engineering manager, responsible for realtime RTOS-based embedded software development for high performance video post-production product, development of drivers, API and multi-threaded cross platform application, audio and video analytic software and tools.

- Work closely with other engineers to develop and release the worlds smallest Ultra HD broadcast deck with professional 10-bit video/audio dual disk SD/UHS-II recording and playback. Established Advanced Media Protocol component, serial and ethernet driver and application, remote slow motion control and video timeline control for playback.
- Lead engineer for Video Assist 4K product, successfully deliver and demonstrate 3D LUT color correction preview feature and multi-language display and update in CES 2017.

Welling & Crossley Melbourne, Australia

Electronics Engineer *Jan 2011 – Jun 2014*

Reporting to chief R&D engineer, responsible for research and develop electronic schematics and PCBs, embedded software for engine control unit, fire pump control panel, variable speed pump controller, and remote controller for irrigation and power generator system.

- Outstanding employee achievement award for successful design and deployment of engine speed sensor for diesel and petrol power generators, which saves significant manufacturing cost.

- Successful demonstration of AS-2941 compliant touch screen fire pump controller to company CEO and stake holders.
- Critical troubleshooting for half million dollar Black Start 500KVA power generator for Queensland water treatment plant.

Qualification

Udacity — Melbourne, Australia
Self-Driving Car Nano Degree Certificate — *Nov. 2016 – Sep. 2017*

RMIT University — Melbourne, Australia
Graduate Diploma in Computer Engineering (High Distinction) — *Sep. 2010 – Nov. 2010*

RMIT University — Melbourne, Australia
Master of Electronics Engineering (High Distinction) — *Aug. 2008 – Jul. 2012*

Fuzhou University — Fuzhou, China
Bachelor of Science in Applied Physics — *Sep 2004 – Jun 2008*

Professional Skills

- **Programming Languages**: C/C++, Python, Bash, HTML, CSS, Javascript, SQL, Objective C, Matlab, VHDL, PLC, Assembly, LaTeX, LabView
- **OS/Middleware**: Linux, Windows, FreeRTOS, ROS
- **Software Framework/Libraries**: Qt, OpenGL, Protobuf, Boost, Matplotlib, Numpy, Scipy, Pcl, Eigen, Sophus, G2O, Ceres, GSTAM, OpenCV, Pytorch, Tensorflow
- **Software Tools**: CMake, SCon, Conan, Jenkins, Docker, AWS, Git, Confluence, Jira, Office365
- **Technical Stack**:Ultrasonic/Radar/Video/Lidar knowledge, Embedded Software Design, Data Analysis and Visualization, SLAM, Sensor Fusion, Perception, Nonlinear Optimization, Machine learning, Deep learning, Computer Vision