Bide (Peter) Huang

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SUMMARY

A result-driven software and system engineer with over 8 years experience in software engineering, possess strong competency and industrial experience in areas of mapping and localization, sensor fusion, machine learning and vision.

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 government and OEMs. Define engineering tasks as per project requirements, design system software architecture and develop feature, integrate algorithms, conduct testing and manage relase, organise customer meetings and cross-regional collaborations.

- Designed and developed prototype of electronic horizon for L2+ hands free functions, including ROS based horizon provider application, horizon APIs for crowd source map data extraction and RViz/DeckGL visualization.

- Successful demonstration of fully automated driving system for 2.5 million dollar government funded CAV Trial project. End-to-end responsibility of mapping and localization including GPS/Camera/Lidar/Radar sensors integration and calibration, data extraction and visualization, development of algorithm, and conduct mapping activities and road testing.

- Designed novel approach for developing HD planner map creation pipeline to achieve centimetre accuracy. Achieved centimetre accuracy of localization accuracy through multi-beam lidar intensity calibration, multi-sensor calibration, multi-modal localization performance optimization.

- Research and develop graph based Visual SLAM algorithm with stereo video camera for EKF sensor fusion; Creation and deployment of multi-layer spatial data visualization website for analysis and critical decision making.

- Designed and implement ultrasonic wade assit function for JLR.

- Second runner-up of machine learning business innovation competition - Developed prototype of vision based lane marker detection using semantic segmentation for road quality anlysis.

Blackmagic Design   Melbourne, Australia
Software Engineer   *Jun 2014 – Jun 2018*

Reporting to software engineering manager, responsible for real time embedded software development for high performance video post-production product, including drivers and application on micro-kernel based OS, API and multi-threaded cross platform video playback and capture applications and tools.

- Worked closely with other engineers to develop and release the world's smallest Ultra HD broadcast deck with professional 10-bit video/audio dual disk SD/UHS-II recording and playback.

- Lead engineer for successful delivery of Disney customer release for HyperDeck Mini Studio; Designed and implemented Advanced Media Protocol which enables video playback synchrounization, frame-accurate timeline and slow motion control over serial and Ethernet.

- Lead engineer for Video Assist 4K product, successfully delivered and demonstrated 3D LUT video 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/device drivers for engine control unit, Qt based touch screen controller, 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 stakeholders.

- Critical troubleshooting for half million dollar "Black Start" 500KVA power generator for Queensland water treatment plant.

QUALIFICATION

Freiburg University   Online
Robot Mapping   *Sep. 2018*

Udacity   Online
Self-Driving Car Nano Degree Certificate   *Nov. 2016 – Sep. 2017*

Coursera   Online
Machine Learning, Robotics Specialization   *June. 2015*

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, OpenCV, Pytorch, Tensorflow

- **Software Tools**: CMake, SCon, Conan, Gitlab, Jenkins, Docker, AWS, Git, Confluence, Jira, Office365

- **Technical Stack**:Ultrasonic/Radar/Video/Lidar knowledge, Embedded Software Design, Data Analysis and Visualization, modelling and simulation, SLAM, Sensor Fusion, Nonlinear Optimization, Machine learning, Deep learning, Computer Vision