

Bide (Peter) Huang

Website: <https://hbd730.github.io/>

Email: hbd730@gmail.com

Mobile: +61 430 001 790

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

Lead Software & System Engineer

Melbourne, Australia

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 release, organise customer meetings and cross-regional collaborations.

- Designed and developed the prototype of electronic horizon for L2+ Advanced Driver Assist System, including horizon APIs for crowd source map behaviour layer data extraction, ROS based horizon provider application, and RViz/DeckGL visualization tools.
- 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.
- Successful delivery of ultrasonic sensor based wade assist function for JLR customer project. Designed and implemented embedded application, sensor data filtering algorithm, simulation and testing.
- Second runner-up of machine learning business innovation competition - Developed prototype of vision based lane marker detection using semantic segmentation for road quality analysis.

Blackmagic Design

Software Engineer

Melbourne, Australia

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 synchronization, 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*Electronics Engineer*

Melbourne, Australia

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***Robot Mapping*

Online

*Sep. 2018***Udacity***Self-Driving Car Nano Degree Certificate*

Online

*Nov. 2016 – Sep. 2017***Coursera***Machine Learning, Robotics Specialization*

Online

*June. 2015***RMIT University***Graduate Diploma in Computer Engineering (High Distinction)*

Melbourne, Australia

*Sep. 2010 – Nov. 2010***RMIT University***Master of Electronics Engineering (High Distinction)*

Melbourne, Australia

*Aug. 2008 – Jul. 2012***Fuzhou University***Bachelor of Science in Applied Physics*

Fuzhou, China

*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