Bide Huang

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Summary

Entrepreneurial Software Architect with 13+ years of experience delivering scalable EDI solutions, AI/ML systems, real-time embedded systems, and cloud applications. Co-Founder of a profitable SaaS business, specializing in EDI integration and logistics optimization. Proven ability to lead teams, develop innovative solutions, and drive business growth through technical excellence and strategic leadership.

Experience

Hover Sense Pty Ltd — Melbourne, Australia
Co-Founder and Director — *January 2022 – Present*

Oversee business daily operation, manage project, product devepement and release

- Delivered end-to-end EDI integration solution for a national logistic company and a major Australian supermarket chain, scaling the business into a profitable SaaS platform with stable annual revenue growth.
- Developed a fleet planning and optimization tool that reduced operational costs by 15% and using most advanced mathematical solvers that optimized 10,000+ variables.
- Collaborated with the Norwegian University of Science and Technology to develop quadcopter guidance and navigation simulation software for reinforcement learning research.

Endava — Melbourne, Australia
Development Consultant — *January 2024 – Present*

Report to Head of Development, working with industrial adviser and development team to participate in technical presale, PoC development and customer demostration

- Led a team of 5 to architect and deploy a real-time carry-on luggage detection system using computer vision, improving accuracy and performance with fine-tuned YOLO models, hosted on AWS infrastructure for scalability and reliability.
- Built an AI Financial Analyst tool leveraging RAG architecture, streamlining document summarization and analysis workflows.
- Cloud Native Observability using OpenTelemetry PoC for Ericsson ADP. Built microservices application with Kubernetes to demonstrate the collection and visualization of application traces, logs, and metrics. Technologies used: Kubernetes, Grafana, Jaeger, OpenTelemetry, and VictoriaMetrics.

Dek Technologies - an Endava company — Melbourne, Australia
Senior Software Solution Architect — *January 2023 – January 2024*

Reporting to Seeing Machine Engineering Manager, working with cross-discipline Engineering teams to deliver commercial driver monitoring integration solution for Caterpillar.

- Architected and implemented health and telemetry data collection, processing, transmission from a in-vehicle Driver Safety System (DSS), and integrated with Gaurdian Live(cloud-based monitoring platform in AWS) via 4G network.
- Successfully Led development team in Vietnam and Australia to deliver software releases by adopting Model based System Engineering(MBSE) methodology to compliment V Model system engineering implementation.

SwarmFarm Robotics — Melbourne, Australia
Senior Software Engineer — *Jun 2021 – January 2023*

Reporting to CPO, end to end responsibility for research and development of robot route planning software stack in C++; Lead a team of 3 developers to develop and commercialize a cloud based plannning website - Farm Manager.

- Research and develope a generic route plannign framework in C++ to generate traversal path for swarmrobots to navigate in broadacre, turf and Orchard environment. Key algorithms are graph based A*, Hybrid A*, numerical optimization based path smoothing, non-holonomic Dubins path generation, and cost heristics.
- Achieved path planning success rate to 98% and real time in robot traveral generation speed to 200ms by defining KPI, designing and deploying evaluation server to run large-scale farm dataset on cloud.
- Successfully scaled up procution workflow for traversal graph model generation on cloud, by desiging a serverless application to generate field models in parrallel using AWS API gateway, Lambda, and S3.
- Significantly reduced manual effort (typically 20 man hours for a 100 hectres field) in robot optimal work plan creation by designing an algorithm to automatically generate path plan from surveryed geometries.

Bosch Melbourne, Australia

Lead Software and System Engineer *Jun 2018 – Jun 2021*

Reporting to Engineering Manager, end to end responsibility 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. Achieved centimetre accuracy of localization 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 assit 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 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

Certifications

- **Google**: Professional Cloud Architect Certificate *August 2024*
- **AWS**: Solution Architect Associate Certificate *February 2024*
- **Coursera**:
  - Google Project Management: Professional Certificate *February 2023*
  - Machine Learning Specialization *June 2020*
- **Udacity**: Self-Driving Car Nano Degree Certificate *Nov 2016 – Sep 2017*
- **Freiburg University**: Robot Mapping *September 2018*

Education

RMIT University Melbourne, Australia
Graduate Diploma in Computer Engineering (High Distinction) *September 2010 – November 2010*
RMIT University Melbourne, Australia
Master of Electronics Engineering (High Distinction) *August 2008 – July 2012*
Fuzhou University Fuzhou, China
Bachelor of Science in Applied Physics *September 2004 – June 2008*

Professional Skills

- **Programming Languages**: C/C++, Python, dotNet, F sharp, 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, NodeJs, Pytorch, Tensorflow
- **Software Tools**: CMake, SCon, Conan, Gitlab, Jenkins, Docker, AWS, Git, Confluence, Jira, Office365, QGIS
- **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