

# HORACE(RUIHANG)

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### ○ PROFESSIONAL SUMMARY

I am a highly skilled and versatile professional with a strong background in both software development and mechanical engineering. With expertise in HTML, CSS, JavaScript, React, MySQL, MongoDB, and more, I excel in full-stack web application development. Simultaneously, I bring over six years of experience as an Intermedia-Senior Level Design Engineer, specializing in product design, research, and innovation. Proficient in tools like Inventor and Solidworks, I have a deep understanding of mechanical engineering principles, particularly in Solid Mechanics and Thermodynamics. I leverage simulation tools, including FEA and CFD, to validate and optimize design concepts.

### ○ SKILLS

- Programming Languages: JavaScript, Python, C#, SQL, C++
- Frameworks: ReactJS, NodeJS, ExpressJS, Bootstrap
- Tools: MySQL, MongoDB, Git
- CAD Design Tools: Autodesk Inventors & SOLIDWORKS
- Data Analysis (MATLAB, PRISM)
- Bilingual (English & Mandarin)

### ○ WORK HISTORY

#### **Design Engineer** | Coates Group – Sydney

04/2022 – Current

- Connective Drive Thru – Digital Totem product R&D: Conducted research, identification, and testing of sensing tools for customer identification in QSR drive-thrus. Explored AI model training for License Plate Recognition (LPR) using Yolov7 and Optical Character Recognition (OCR) using PaddlePaddle. Conducted vendor and component research on computer vision (CV) tools.
- Technology Research: Investigated industry trends and identified key technological focuses within the QSR industry.
- Technology Product Development: Collaborated with the hardware team to create a functional prototype of the Kiosk Evo. Implemented Kiosk gesture control, voice-to-text, Bluetooth interaction, LED interaction, and RFID interaction.
- Existing and New Product Review: Evaluated product mechanical strength, thermal dissipation, and material efficiency using tools such as FEA and CFD.

#### **Design Engineer** | Zumtobel Group – Sydney

01/2019 – 03/2022

- Design and develop new families based on the target product specifications within the respect of the New Product Development(NPD) process. Including the concept, design ( mechanical, electrical, thermal and optical design), detailing and coordinate release to production
- Design and develop a luminaire base on customer/project requirements
- Perform all the aspects of the product localisation together with Product Management, Production and Purchasing

- Work with stakeholders (Sales, Customer Service, Product Management, Suppliers) to assess and understand customer or market requirement to develop a finished product, prototyping and testing, supervise the qualification and initial production run
- Ensure timely completion of project to support customer delivery schedule or products launch plans
- Maintains relations with suppliers together with Product Management and Purchasing with the objectives to keep the team up to date with new products/technologies and regulations
- Product Master Data Maintenance(SAP)
- Enforcement of the Quality Management System of the Company in accordance with ISO9001 (current and future) requirements
- Investigation and rectification of quality complaints related to design fault. Participate in the review and approval of new products to be introduced to production

**CAD Drafter** | MW Toolbox & Trailer PTY LTD - Sydney 04/2018 - 01/2019

- Customise toolboxes, canopies and trailers using 2D(Autocad) & 3D(SOLIDWORKS)
- Nesting and CAM software for sheetmetal cutting
- Developed a stand-alone application (C#.NET) to partially automate the design process

**Statistician(Part Time)** | John Pyne Skin cancer research centre - Sydney 06/2016 - 10/2020

- Tabulation, statistical analysis of data through the MATLAB and Prism
- Co-author of the 4 published papers

**Game Developer** | BigBossDM PTY LTD - Sydney 04/2017 - 02/2018

- Game Front-end development uses C# and Unity

**Research Internship** | University of New South Wales - Sydney 11/2015 - 02/2016

- Designed and implemented experiments individually which contributed to the overall scope of the project
- Designed an in vitro model for electrode impedance study due to protein adsorption and tested with Cochlear implants to exam its electrical properties

**Sales Internship** | Xian Janssen Pharmaceutical Ltd – Hangzhou – CHINA 11/2014 - 12/2014

## ○ EDUCATION

University of Sydney

**Coding Bootcamp**

05/2023 – To be finished at the end of October

University of New South Wales - Sydney

- Front-end and back-end technologies through 3 major projects and 18 weekly projects. Topics including HTML5, CSS3, JavaScript, jQuery, Bootstrap, Express.js, React.js, Node.js, Database Theory, MongoDB, MySQL, Git, Webpack, GraphQL and Redux.

**Bachelor (Honours) of Mechatronic/Master of Biomedical Engineering** 2012 – 2017

- 2015 - Taste of Research Summer Scholarships
- Thesis topic: Developed a software that will assist the asset/diagnosis of facial paralysis use Microsoft Kinect
- Achieved high distinction in Solid Mechanics, Thermodynamics and Electronics linear system control
- 2016, 2014 Secretary(Design), Engineering World Health. Design and manufacture of biomedical technology to improve healthcare throughout the developing world.
- 2012 - Academic Achievement Awards
- Advance autonomic system using probability distribute functions, system modelling and Extended Kalman Filter.
- Robot path planning, obstacle avoidance using a grid-based bitmap.
- Robot position estimation and acquisition using a gyroscope and a laser sensor.

- ABB robotic system control. It involves a robotic arm, a conveyor and two cameras. Automation was taken place by a set external reference from MATLAB into ABB robot studio after image processing and movement calculation using MATLAB for each task.

## ○ REFERENCE

### **Matthew Simpson**

Head of New Product and Design at Coates Group

### **ARVIN JOYA**

Manufacturing Engineering Manager at Aristocrat

Formal Operation Manager at ZUMTOBEL GROUP