

BEN (DAPU) WANG

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EDUCATION

University of Pennsylvania - Sophomore

Jerome Fisher Program in Management and Technology

BS. Electrical Engineering and BS. Economics at Wharton School of Business

Sep 2018 - Present

GPA: 3.58

North Sydney Boys High School

99.40 ATAR

Jan 2012 - Dec 2017

EXPERIENCE

Formula SAE Electric Racing Team: Penn Electric Racing

Oct 2018 - Present

Power Electronics Lead/Schematic DRI Skills: Altium designer, Power electronics design, FPGA design, Project Management

- Lead design and manufacturing of FPGA controlled, 600V/80kW motor controller for award winning 4 wheel drive electric racecar using Wide-BandGap semiconductors, high density stacked planarized construction and Insulated Metal Substrate thermal solution
- Projected to improve power density 5x over best commercial solution, and 3x over best in published research (170kW/kg)
- Acted as the Directly Responsible Individual (DRI) for the schematic design of 15 custom circuit boards by a team of 8 members, including a 24 channel Power Distribution Unit and a 600V, 640 cell semi-distributed lithium Battery Management System

ODrive Robotics: High Performance Motion Control

March 2019 - August 2019

Hardware/Firmware Engineer

Skills: Power electronics design, DFM, C/C++/Python

- Designed and laid out a highly integrated 60V 100A 3 phase motor controller for robotics application in Altium Designer
- Selected parts and improved Design For Manufacturing (DFM) to reduce BOM and assembly costs by 35%
- Implemented software/firmware performance and algorithm improvements which reduced USB connection latency by 10x

Althea: Blockchain Incentivized Mesh Networking

Jan 2018 - Present

First Employee: Software Engineer/Consultant

Skills: Rust, Blockchain, Linux Networking

- Wrote and maintained first version of mesh billing software now deployed to hundreds of embedded devices in 5 countries
- Implemented MVP of bidirectional blockchain (Ethereum) payment channel client using actor based architecture ahead of schedule
- Now consults on integration of payment channels into billing software as well as on Rust software implementations

COMMERCIALIZED PRODUCTS

Perf+: Compact and Efficient Electronic Prototyping Board

May 2015 - Present

Inventor: Hardware Crowdfunding Project

Skills: Project Management, Outsourcing

- Used Kickstarter to raise AU\$ 15,461 from 614 backers for development and volume manufacturing for patented board designs
- Iterated and improved design based on user feedback, and raised a further US\$ 11,898 from 217 backers on CrowdSupply
- Over 15,000 boards were manufactured in Shenzhen and all rewards fulfilled ahead of schedule to positive user reception

RemoteBoot: Remote Management module for Desktop Computers

Nov 2015 - Present

Inventor: Hardware/Software Crowdfunding Project

Skills: ESP8266, C/C++, HTML, JS

- Raised AU\$ 17,589 from 431 backers for manufacturing and further development, with all rewards fulfilled to positive reception
- Deployed over 1000 devices worldwide, which have saved over 500MWh, reducing CO₂ emissions by over 350 tons

PATENTS

Field Configurable Electrical Routing Matrix for Electronic Prototyping

Granted Nov 2015

Australian Innovation Patent: AU2015101706

Chair Mounted Optical Posture Sensor

Granted Mar 2016

Australian Innovation Patent: AU2016100723

TECHNICAL STRENGTHS

Hardware & Electronics

Software & Tools

Embedded platforms

Programming Languages

High power, Wide-bandgap (SiC, GaN), Motor controllers, Insulated Metal Substrate, FPGA

Linux, OpenWRT, FreeRTOS, Jupyter, Excel, Kicad, Altium Designer, Verilog

STM32, ESP8266/ESP32, AVR/Arduino

Python, Rust, C/C++, HTML, JavaScript, Java