

BEN (DAPU) WANG

(+1) 267 206 1377 ◊ wangben3@gmail.com ◊ bendwang@seas.upenn.edu

EDUCATION

University of Pennsylvania - Rising Senior

Jerome Fisher Program in Management and Technology

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

Sep 2018 - Present

GPA: 3.63

EXPERIENCE

Formula SAE Electric Racing Team: Penn Electric Racing

Electrical Hardware Lead

Skills: Project Management, Altium designer, Power electronics design, FPGA design

October 2018 - Present

- Lead the schematic and PCB 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 for award winning electric racecar
- Achieved second place overall in the electric division of the 2021 FSAE California event, out of 21 teams participating.
- Designed and manufacturing of FPGA controlled, 600V/80kW motor controller using Wide-BandGap semiconductors, high density stacked planarized construction and Insulated Metal Substrate thermal solution. This is projected to improve power density 5x over best commercial solution, and 3x over best in published research (170kW/kg)

ODrive Robotics: High Performance Motion Control

Hardware/Firmware Engineer

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

March 2019 - August 2019

- 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

First Employee: Software Engineer/Consultant

Skills: Rust, Blockchain, Linux Networking

January 2018 - Present

- 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

Inventor: Hardware Crowdfunding Project

Skills: Project Management, Outsourcing

May 2015 - Present

- 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

Inventor: Hardware/Software Crowdfunding Project

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

November 2015 - Present

- 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/PUBLICATIONS

LFTag: A Scalable Visual Fiducial System with Low Spatial Frequency

IEEE CVIV (Computer Vision, Image and Virtualization), best oral presentation

Published Sep 2020
DOI: 10.1109/CTISC49998.2020.00030

Chair Mounted Optical Posture Sensor

Australian Innovation Patent: AU2016100723

Granted March 2016

Field Configurable Electrical Routing Matrix for Electronic Prototyping

Australian Innovation Patent: AU2015101706

Granted November 2015

TECHNICAL STRENGTHS

Hardware & Electronics

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

Software & Tools

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

Embedded platforms

STM32, ESP8266/ESP32, AVR/Arduino

Programming Languages

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