Steven Wong

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EDUCATION

Imperial College London
Oct 2015 – Jun 2019

MEng in Electrical and Electronic Engineering (2.1) (Final year 78.97%)

Awarded the Eric Laithwaite Prize for Outstanding Innovation in the Final Year Individual Project

Final Year Project	Impedance probe for real-time intraoperative brain tumour/tissue interface detection (82%)
Year 4 modules	Finance Signal Processing (84%), Adaptive Signal Processing and Machine Intelligence (81%), Pattern Recognition (75%), Analogue Signal Processing (71%)
Year 3 modules	Real-Time Digital Signal Processing (77%), Digital System Design (73%), Analogue Integrated Circuits and Systems (72%), Project Management (67%)
Year 2 modules	Computer Architecture (75%), Signals and Linear System (69%), Overall Coursework (69.3%)

Christ's Hospital School
Sep 2012 – Jun 2015

A-Levels	Mathematics (A*), Further Mathematics (A), Physics (A), Computing (B)
IGCSE	7 subjects including 3 A*'s and 3 A's
Awards	Silver Certificate in the Cambridge Chemistry Challenge in 2014
	Mathematics Prize and Travers Buckle including scholarship from Christ's Hospital School – one student in every two years awarded this for outstanding knowledge and performance in Maths

WORK EXPERIENCE

Güralp Systems, Reading
Aug 2019 – Mar 2020

Development Engineer

- Full ownership on designing a new product, from composing software communication protocol between two devices, embedded programming, to circuit and PCB design
- Improved existing seismic instruments' transmission lines reliability
- Developed new features on existing seismometers in C (RTOS)

DCA Design International, Warwick
Apr 2018 – Sep 2018

Trainee Electronics Engineer

- Developed innovative concept for a low-cost high-volume electric contact
- Performed research on cellular IoT modules
- Designed a user interface to send data to a server via EC-GSM-IoT
- Designed and built proof of principle rig for multiple medical device projects
- Undertook feasibility investigations including mathematical models and tolerance analysis
- Reverse-engineered and improved the development and manufacturing test tools for medical devices
- Examined and programmed 200 PCBA in a day

Electrical & Electronic Engineering Department, Imperial College London
Jun – Jul 2017

Research Assistant

- Research topic: Fast parallel measurements of Memristors arrays
- Measured voltages and currents at input and output of terminals of the Memristors array
- Designed the circuit and used SPICE simulator to evaluate and optimised the circuit

MedEXO Robotics, Hong Kong
Aug 2016 – Sep 2017

Electronics Engineer (Part-time)

- Invented a system to stabilise tremors caused by neurodegeneration diseases (Parkinson's Disease)
- Analysed data and optimised coefficients to maximise efficiency and accuracy of the algorithm
- Designed and assembled the PCB to be installed in a limited space
- Carried out patient testing, recorded data and took feedback to enhance future prototypes
- Pitched in multiple events and garnered more than £40k in funding

HOME PROJECTS

- Non-invasive continuous blood pressure monitor with multi-site photoplethysmography research
- Baby breathing monitor using textile-based sensing elements
- BLE connected toxic gas detector (online collaboration)

UNIVERSITY PROJECTS / LABORATORY EXPERIENCE

Imperial College 4th Year Coursework based Modules (Grade A)

- Designed and simulated a 6-bit 100 kHz successive approximation analogue-to-digital converter in 180 nm technology with less than 800 uW power consumption under 77.84 um x 190.12 um
- Investigated and implemented person re-identification algorithms with metric learning methods on the CUHK03 dataset in Python
- Applied active noise cancellation on bio-signals and implemented an algorithm to estimate the breathing rate of a patient using their ECG signals collected from their wrists

Imperial College 3rd Year Coursework based Modules (Grade A)

- Implemented a speech enhancement system in embedded C based on noise estimation and frequency domain subtraction techniques such as over-subtractions
- Designed dedicated hardware blocks to perform floating point arithmetic, CORDIC algorithm with NIOS II Processor on a Terasic DE0 FPGA board in Verilog HDL and successfully improve the latency on evaluating a summation of complex trigonometric function by 99.95%

Imperial College 2nd Year Project, *Articulated Glove for People with Hand Disabilities* (Grade A)
Hardware Engineer

- **Awarded Runner Up prize in the 2017 Second year group project**
- Designed and built a touch sensor controlled robotic glove, driven by servo motors with the use of a microcontroller coded in C++ also incorporating techniques such as 3D printing
- Worked in a team of seven to design the prototype and presented to a panel of researchers
- Responsible for circuit design and circuit board design

Imperial College 2nd Year Electronics Laboratory (Grade A)

- Developed an echo synthesizer with variable delay and a voice corruptor using digital circuits on Altera's Cyclone V FPGA interface with a Digital-to-Analogue Converter
- Constructed a capacitive touch sensor circuit using Altium CircuitMaker
- Programmed and debugged a Mbed module programmed in C++ attached with OLED display and pre-made capacitive touch sensor PCB to use as a reaction meter

POSITION OF RESPONSIBILITY

Imperial Racing Green – Formula Student

Head of Electronics   Oct 2018 – Jun 2019
- The Imperial Racing Green initiative provides a platform for students to build zero emission vehicles based on battery electric technologies to race in the Formula Student competition
- Managed the electronics works performance and associated deadlines and budgets

PCB Designer   Oct 2017 – Jun 2018
- Evaluated and upgraded the PCB designs to a shorter route and a more convenient layout reducing the response time of the vehicle thus enhancing the controllability
- Redesigned circuit and PCB layout that reduced the size of PCB by 42%

Imperial College Mahjong Club   Jun 2016 – Jun 2017
President
- Led and managed the student society for students who are passionate about Mahjong
- Organised joint university competitions to promote Mahjong

PUBLICATION (Conference)

S. Wong, J. Ekanatake, Y. Liu, and T. Constandinou. "An Impedance Probing System for Real-Time Intraoperative Brain Tumour Tissue Discrimination". In 2019 IEEE Biomedical Circuits and System Conference (BioCAS). Oct 2019

ADDITIONAL SKILLS

Languages: Native Cantonese, Fluent English, Proficient Mandarin
Programming Languages: C, C++, Python, Visual Basic, ARM Assembly, Verilog HDL
Software: MATLAB, Altium Designer and CircuitMaker, PADS, LTspice, Cadence Virtuoso Analog Design Environment, LabView Communication, Quartus II/Prime, STM32, Arduino, Microsoft Office