Long Hin (Julian) Fong

Engineering Physics

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Technical Skills

Computer

C, C++, Flash ActionScript, MathLab, Labview, SolidWorks, AutoCAD, PowerPoint, Word, Excel

Electronics

circuit analysis, circuit assembly, photo etching, Verilog, VHDL, PCB design (Altium)

Machining

lath, mill, MIG welding, spot welding, CNC programing, composite layup, waterjet cutter, GDnT

Experience

Superpedestrian **Feb 2013 – Current**
Engineer

- Helped bring an electrically motorized bike wheel from prototype and concept to production
- Worked with suppliers to produce various mechanical components including, die castings, plastic injections parts and machined fabrications used in the wheel
- Drew schematics and PCB layout for motor drivers, user interface, sensors, and others
- Root cause technical problems, test proposed solutions
- Collaborate with suppliers and contract manufacturer, and generate engineering change orders
- Developed an Android app, website and server for initial proof-of-concept of bike data sharing

BC Cancer Agency – BC Cancer Research Centre **May 2012 – Dec 2012**
Engineering Co-op Student

- Set up a new automated systems for transfer of radioactive liquids through the lab
- Built software interface for transfer systems, set up OPC servers and LabView controls for monitoring and logging
- created various tools and shielding to aid researchers in experiments and minimize radiation exposure

LightIntegra Technology **May 2010 – Aug 2010**
Engineering Co-op

- Tasked to incorporate new blood platelet monitoring technology into an existing blood analyzer.
- Self managed project, communicated with researchers to understand requirements, studied previous prototypes made, and remedy overheating and laser alignment problems
- Designed and fabricated electrical and mechanical components including: thermal-electric drivers, valve controllers, laser and sample mountings
- Programmed micro-controllers in C, wrote a user interface in LabView
- Documented mechanical fabrications, schematics, wiring, program flow, and procedures for use
- Co-inventor of patent: “Dual analyzer system for biological fluid”

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BC Cancer Agency - BC Genome Science Centre **Sept 2010 – Dec 2010**
Engineering Technology Development

- Designed and fabricated subsystems for the DNA size selection robot (Chiller plate, pipette tip ejector)
- Made various custom tools for technicians to improve sequencing pipeline, (temperature controlled heater, buffer dispenser and pump)

James Hogg Research Centre – Technology Development Core **Jan 2009 – May 2009**
Research assistant

- Worked on a microfluidic research project, the purpose of which was to pair human cells and fungal spores in droplets of media to observe interactions
- Collaborated with biologists on chip designs and recorded them in AutoCAD
- Presented weekly progress updates
- Produced microfluidic chips using photo-etching and micro fabrication techniques at the lab
- Improved vision recognition in LabView program used to automatically sort cells and spores

UBC Aero Design Team **Sept 2007 – March 2010**
Wing and Interface construction lead

- Co-lead a team of students in the fabrication of a remote control plane for the SAE AeroDesign competition.
- Trained and mentored 10 students in construction of an RC plane
- Performed load calculations, designed and performed stress tests on wing and fuselage components
- Drew up construction plans, schedules and organized construction efforts
- Collaborated with other more experienced students on aerodynamic requirements of the plane
- Placed in top 5 out of 30 teams in North America

Other projects

- Created an amusing little game involving a hamster's escape using Flash ActionScript.
- Used Matlab to simulate wave propagation in tissue and investigated reconstruction techniques for ultrasound imaging for imaging research group run by Dr. Shuo Tang
- Investigated magnetic spins in rubidium atoms using polarized light to excite and RF to simulate atoms in class lab exercise
- Practised with VHDL to program FPGA chips for class project, made pretend pill counter and washing machine controller with sensor inputs and outputs
- Worked in an art group to build Titanoboa, a giant 50ft hydraulic snake snake for burning man. Programed control algorithems.

Education

University of British Columbia – Vancouver, BC, Canada
Faculty of Applied Science, Engineering Physics, Electrical Specialization May, 2013