Tianyu Guo (Ti)

University of Waterloo Mechatronics Engineering 2A

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Skills

Hardware

- PCB Schematic Design, PCB layout design, Soldering, 3D Printing
- Arduino, Raspberry Pi, PLC, FPGAs, ARM based microprocessors
- Machining, Wood shop tools, Laser Cutting
- UART, I2C, SPI, NFC protocols

Software

- Proficient: C, C++, AHK, HTML, CSS, Bootstrap, JavaScript, Mac/Linux Terminal
- Familiar: Java, MatLab, Python, Node.JS, Heroku, NoSQL, Google Cloud
- Eagle CAD, SolidWorks, AutoCAD, Sketchup, 3ds MAX, Photoshop, Illustrator, LabView

Additional

- Rapid Prototyping
- Project planning
- Customer Discovering
- Crowed Testing
- Market researching
- Investigation with manufacturers
- Scrum Model, Lean Model

Employment History

Co-Founder – *Busboy Technologies, Waterloo, ON* *2016-present*

- Using Lean Model developing a marketing service bringing retargeting advertisement to physical vendors
- **Managing business and project development** using lean method
- Co-developing and testing Busboy's software product. Used **CSS**, **HTML**, **JavaScript**
- Working with 3 restaurants to implement company's product

Innovation Intern – *Khazanah Americas Incorporated. San Fransisco, CA* *2016*

- Developed a KAIsearch website that allows employees to easily customize their search in multiple company's business databases that have used by 30% of staff in the office
- Lead developed a Kinect-based 3D human body scanner that can capture over 90% of users' upper body details
- Developed camera control interface and automation software for company's Drawing robot project
- **Analyzed tech startups** using Bloomberg and PitchBook
- **Participated** in various startups pitches and **investment interviews**, discuss deals with startups
- Skills improved with PCB design, machining, **Laser cutting**, 3D modeling, **3D printing**, **Raspberry Pi**, Arduino, **Python**, C, **SSH**, AHK, JavaScript, CSS, HTML, Linux

Hardware Developer - *Neurovative Technologies Inc., (Accelerator Centre) Waterloo, ON* *2014-2016*

- Co-developed company's main product, Vibrant, a wearable therapeutic system, as the 3rd member of the company
- **Data analysis** with accelerometer, circuit building, **Bluetooth Low Energy,** and tested bio-sensors and actuators
- Assisted with the company's Android companion app, using Java
- **Represented the company** in Shenzhen, **China** during summer 2015 by discussing and investigating cooperation opportunities in vibration motors and **PCB** manufacturing with vendors

Junior Software Developer - *Symanta Inc., (Communitech) Waterloo, ON* *2014*

- Worked with the Emotiv Brainwave **EEG** Headset, Google Cardboard, **Python**, and AHK
- Led developed company's mind controlled virtual reality gaming system
- Organized **customer discovery** process for the project. **Crowd tested** at KWartzlab hackerspace

Lab Assistant - *University of Waterloo, Waterloo, ON* *2013*

- Improved the Lab Manual for ECE 351 (Compilers Course)
- Ensured clear structure and drew flow charts for the programming assignments, using **C++**

Projects

Smartphone-controlled smart pillow for sleep tracking and modifying *2015-2016*

- Applied skills in **Arduino**, Git, C, Java, and data analysing with pressure sensors
- Built compact electrical system embedded in a pillow which utilized Arduino, accelerometers, Bluetooth, **I2C**, **SPI**, **UART**, **EEG** sensor circuit, LCD screen, vibration motors, sd card R/W, etc.
- **Source customized components** directly from manufacturers
- 18 months of research and developments and 4 versions of prototypes. The device is proven to be able to generate sleep activity graph as accurately as top 5 sleep tracking apps on the market

Bluetooth earpiece wireless charging shell (3d design and printing, circuit design and PCB manufacturing) *2016 - present*

- Developed the portable wireless charging shell for Bluetooth earpiece
- Conducted **market research** and **customer discovery** process for the **Startup project**

Concentration Improvement System (Arduino**, Bluetooth, Java for android, EEG sensor**) *2014-2015*

- Used machining skill to develop a wristband that notifies users when they are not concentrating

Real Life Angry Birds Gaming Machine (**3D design**, **Machining**, Arduino, and **Circuit Design**) *2014-2015*

- Led a group of 5 Engineering students designed and build an electrical controlled mechanical Angry Bird Machine

Myo EMG controlled RSI treatment system – *Hack the North hackathon (*Bluetooth, Arduino, C, UART*)* *2016*

- Co-developed vibration system to correct posture, using data from EMG sensor. **Tested on patients**, proven effective

Job Miner Website – *ConUHacks Hackathon (Rapid Prototyping, HTML, JavaScript, CSS, jQuery, and **Bootstrap**)* *2016*

- Co-developed a website that automatically evaluates jobs for University Students through job description

Activities

Founder of Natruwake Student team – *University of Waterloo Natruwake Bio-Mechatronics Team* *2015-present*

- Used **Scrum Model** led 10 students in developing an open-source smart pillow pad (based on pillow project)
- Used GitHub Version control and collaboration, 3D modeling & printing, Arduino **machine learning** library, PCD **layout** and **Schematic** design, MQTT protocol, H-Bridge, and product **crowd testing**, Google cloud, **SolidWorks**

Co-president in Mechanical and Electrical Lead of Robotics Team - *Waterloo Collegiate Institute* *2013-2015*

- Led building a robot car, **rapid prototyping** with sensors, dc motors, Raspberry Pi to control Arduino, machining for making the body, circuit design, **OpenCV**

Hardware Executive at First Robotics Team 2702 - *Eastwood Collegiate Institute* *2014-2015*

- Used lathes, drilling machines, table saw, milling machines, **SolidWorks** for designing, prototyping and building robots

Awards & Achievements

President's Award - *University of Waterloo* *2015*

- Awarded for founding UW-Hardware Workshop (1 of 6 recipients of the term, one of the youngest recipients in history)

2nd Place Overall - *International Autonomous Robot Racing Competition* *2015*

- Led Waterloo Collegiate Institute Robotics Team won the 2nd place in the world

Education

Candidate for Bachelor of Applied Science

-Honours Mechatronics Engineering at University of Waterloo *2015 – 2020*

- Extracurricular evolvement: Founder of UW Hardware Workshop (Helped over **300 students** get start with Arduino), Co-Founder and Lead **Project Designer** of Kitchener Public Library Robotics Summer Camp and Waterloo YMCA Robotics Summer Camp, Federation of Student Entrepreneurial Committee, Co-organizer of Meditation Club, Co-organizer of Chinese Canadian heart to heart Club, Toast Master Club, Brain Computer Interface Club, Outer club

Interests

- Reading, Rock Climbing, Biking, Chess, Chinese Calligraphy.
- Following tech trends, reading articles/ news about **entrepreneurship**