

# ANDREW XU

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3A Mechatronics Engineering

## Key Qualifications

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**Electrical:** Schematic Capture, PCB Layout, Analog & Digital Circuit Design, Power Supplies, Motor Controllers

**Tools:** Eagle, KiCAD, OrCAD, Oscilloscope, DMM, Soldering Iron, Signal Generator, Reflow Soldering

**Software:** C, C++, Python, PLC/FPGA, Java, Javascript, Arduino, MATLAB, RTOS

**Tools:** Microcontrollers, Linux OS, Windows, Version Control System (Git)

**Mechanical:** Detailed Craftsmanship, Part Design, Material Properties, Actuator Design

**Tools:** AutoCAD, SolidWorks, 3D Printing, Laser Cutting, Milling Machine, Lathe, Hand Tools

## Work Experience

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Electronics Development Intern, Structur3D Printing

Jan 2019 - Apr 2019

- Designed and tested entire AVR based embedded system for Structur3D's new advanced manufacturing product.
- Facilitated industrial design of product and supply chain setup to support manufacturing ahead of 2019 product launch.

Lead Hardware Designer, Oxilight Inc

May 2018 - Aug 2018

- Improved medical diagnostics device by adding fluorescent emittance circuitry, maintaining device size and longevity.
- Designed and implemented battery wake up circuitry and load sharing, increasing single charge product life by 15%.

PCB Designer, DA-Integrated

Sept 2017 - Dec 2017

- Designed and evaluated an I<sup>2</sup>C operated differential voltage monitor module for cost effective IC testing.
- Repaired thermosensors and pneumatics of IC testing systems to maintain continuous testing of customers' ICs.

## Projects & Initiatives

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Electrical Team Lead, Waterloo Autonomous Sailboat Team

April 2018 - Present

- Designed and tested new AVR based controls system to reduce system's overall footprint and increase reliability
- Recruited and trained active members in PCB design for custom sensor boards and power electronics.
- Led the design of a SPI to CAN interface system between AVR Microcontrollers and Odroid.

Research Associate, Students on Ice Foundation

Nov 2017 - Present

- Experimented with various bioplastic recipes to explore opportunities for Inuit to recycle waste through 3D printing.

## Interests

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Landscape Design  
Snowboarding  
Hiking  
Aviation  
Cycling

## Education

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Candidate for Bachelor of Applied Science, 3A Mechatronics Engineering, University of Waterloo  
Sept 2016 - Present

- Relevant courses include Microprocessors Systems and Interfacing (MTE 325), Actuators & Power Electronics (MTE 320), Sensors and Instrumentations (MTE 220), Real Time Operating Systems (MTE 241).