26th July 2021

# Candice Ip

Website Portfolio /candicei /candicei candicejxi@gmail.com

## SKILLS

**Electrical** Signal Analysis, Altium, Hardware Noise Reduction, SPI, $I^2C$, Soldering, Filtering, Amplification
**Software** **Fluent:** MATLAB, Python, LabVIEW, C **Familiar:** R, C++, Java, VHDL, Assembly
**Mechatronics** Embedded Programming, Closed-loop Control, Computer Vision, CAD, **MCU:** PIC, ARM Cortex, 8051
**Other Skills** Rapid Prototyping, Finite Element Analysis, Project Budgeting & Scheduling, Grant Proposal Writing, Coaching

## EXPERIENCE

**Stoko** | Engineering Physcist — Oct 2018 – Jun 2020 | Vancouver, CA
- Brought mechanical, research, and imaging expertise to design, develop, and test the Stoko K1 knee brace from prototype to production.

**Dynamic Optics** | Project Coordinator — May 2018 – Oct 2020 | Port Coquitlam, CA
- Managed mechanical designs, optimized optical and fluid subsystems, and coordinated among key industry stakeholders.

**Nanoplasmonics Laboratory** | Research Intern — May 2017 – Aug 2017 | Victoria, CA
- Co-authored two peer-reviewed papers in ACS Omega and SPIE Optical Trapping and Optical Micromanipulation.

**HRI Robotics Laboratory (RREACH)** | Mechatronics Engineering Intern — May 2016 – Aug 2016 | Vancouver, CA
- Developed a prototype of a biomedical and mechatronics device, SleepSmart v2, for detecting physiological signals upgraded with digital sensors.

**Max Planck Institute (MPSD)** | Experimentalist & Software Intern — Jan 2015 – Apr 2015 | Hamburg, DE
- Co-authored a paper on novel instrumentation and automation for mass spectrometry experiments in Scientific Instruments.

## SELECTED TECHNICAL PROJECTS

**Electrical Impedance Tomography** | Individual | — Nov 2017 | Vancouver, CA
- Implemented mathematical Green's Functions using finite element analysis to image an artificial tumor in MATLAB.

**Senior Engineering Design Competitions** | Software & Management Lead | — Fall 2015 & 2017 | Vancouver, CA
- Competed in autonomous robotics competitions and presented to industry professionals; 1st in 2015, 3rd in 2017.

**Autonomous Item Retrieval Robot Competition** | Software Lead | — Apr 2015 – Aug 2015 | Vancouver, CA
- Built and programmed an autonomous robot to navigate an obstacle course and retrieve targets; 1st in design quality.

## EDUCATION

**University of British Columbia** | MSc, Physics — Sep 2020 - Present | Vancouver, CA
- Researching a novel quantitative MRI technique for detecting and diagnosing cancer.

**University of British Columbia** | BASc, Engineering Physics | Minor in Commerce — Sep 2013 - May 2018 | Vancouver, CA
- A physics and applied mathematics program enriched by design fundamentals in electrical and mechanical engineering.

**Swiss Federal Institute for Technology (ETHZ)** | International Exchange — Sep 2016 - Dec 2016 | Zurich, CH
- Studied Data Visualization, Physics, and Energy Technologies with the Department of Mechanical and Process Engineering.

## SELECTED PUBLICATIONS

[1] N. Hachohen, **C. J. X. Ip** , G. K. Laxminarayana, T. DeWolf and R. Gordon, 'Nanohole optical tweezers in heterogeneous mixture analysis,' (San Diego Convention Centre, 6th Aug. 2017–10th Aug. 2017), SPIE, San Diego, United States, 2017. doi: 10.1117/12.2273358.

[2] W. D. Robertson, L. R. Porto, **C. J. X. Ip** , M. K. T. Nantel, F. Tellkamp, Y. Lu and R. J. D. Miller, 'Note: A simple image processing based fiducial auto-alignment method for sample registration.,' Review of Scientific Instruments, 2015. doi: 10.1063/1.4929408.