

**JOB DESCRIPTION FOR:  
Junior Sensor Design Engineer**

**JOB BRIEF:**

Start Date: June 1<sup>st</sup>, 2022  
Contract length: 6 months, with the possibility of extension  
Application deadline: April 17<sup>th</sup>, 2022  
Job Types: Full-time, Internship

Do you want to join a rapidly growing team that is working on cutting-edge technology to innovate for a safer tomorrow? NZ Technologies Inc. (NZTech) is looking for a proactive and driven individual, keen on solving dynamic problems and driving meaningful changes at a small technology innovation company. The successful candidate would be an enthusiastic engineer trained in the fields of mechanical and electrical engineering design with a passion for solving real industrial problems in the field of touchless human-machine interfaces. The position focuses on sensor design, scientific experimentation, machine learning algorithm development, and hands-on prototyping. Prior experience working on sensor design or working with sensor is a requirement.

**BACKGROUND:**

Established in 2009, NZ Technologies Inc. (NZTech) works in the field of Human Machine Interaction (HMI) with specializations in touchless sensors, 3D machine vision, and machine learning algorithms. NZTech's proprietary software and hardware are designed and built in-house at our office in Vancouver, BC. Our core products, TIPSO™ and HoverTap™ are proprietary technologies that have evolved from the technical expertise and unique industrial experience of our engineering team, with significant feedback from our team of experienced advisors from the medical and other industrial sectors. The team recently won the 2020 BCTech Technology Impact Award for Company of the Year - Startup Success.

TIPSO™ is an award-winning Human-Machine Interaction (HMI) family of products for Interventional Radiologists and Surgeons who need to efficiently interact with radiology images in the Operating Room (OR). It is designed by doctors, for doctors, to fit seamlessly in their challenging work environment. NZTech is continuously working with VGH and other hospitals to research, develop, and deploy new sensing technologies in the Operating Room to aid doctors in their critical work.

HoverTap™ is a new user interface technology that enables touchless controls over existing panels, LCD displays, and the like. Its practical design allows it to be retrofitted quickly and enables touch-free interactions with panels of all shapes and sizes. HoverTap™ Lift is a new way to touchlessly and safely use elevators. Easily retrofitted to existing buildings, the HoverTap™ panel allows for simple hand-wave and finger-point interactions – getting you to your destination without a single touch.

## **JOB DESCRIPTION:**

We are looking for an enthusiastic and responsible individual who is trained in the field of engineering development and scientific research. The successful candidate should be able to work independently and with the team on developing new embedded systems and support structures.

The position not only offers tremendous learning opportunities but great potential for career advancement. Most importantly, you will be joining an uprising high tech start-up in its early stage to make an impact and take a front seat for the journey.

*Duties include, but are not limited to:*

- Develop, characterize, and validate 3D sensors
- Design experiments to iterate designs of existing sensors - including data analysis
- Design and implement machine learning algorithms for 3D sensors
- Specifying, simulating, and validating the electrical schematics necessary for embedded processor systems and sensor modules
- Designing, fabricating, assembling, and testing PCBs for unique sensor + processor designs
- Contribute to intellectual property disclosures, scientific discoveries, and other technical documents such as technical development progress and design documentation
- Prototyping, coding, and testing new ideas using microcontrollers, sensors, and various prototyping tools such as the 3D printer, CNC machine, and PCB printer
- Actively working with the team to brainstorm, discuss, and solve technical problems

## **MINIMUM JOB REQUIREMENTS:**

*This position is being offered as part of the 'Digital Skills for Youth Program;' hence the opportunity is only available to candidates that are either a Canadian Citizen, PR or hold refugee status, and between 15-30 years old.*

- Must be between 15-30 years of age
- Be a post-secondary graduate
- Be legally entitled to work in Canada as a Canadian citizen, permanent resident, or person who has been granted refugee status
- Not have completed a DS4Y work placement in their lifetime
- Comfortable commuting to the job location
- Excellent verbal communication and writing skills and
- Proven interpersonal and leadership skills

**POSITION-SPECIFIC REQUIREMENTS:**

- 0-2 years experience in modern sensor design
- 1 year experience with complex systems (e.g. developing systems that include multiple electronic components)
- 1 year experience in machine learning algorithm development
- Microcontroller programming + debugging
- Circuit design for digital and analog electronics
- Able to work independently with carrying out experiments using scientific methods
- Electronic parts research and selection
- Professional documentation practices
- Effective at independent problem-solving

Please submit **both your resume and cover letter** to [naomi@nztech.ca](mailto:naomi@nztech.ca) with the job title as the subject of the email. A portfolio would be an asset. We will contact you if we see a good fit between the candidate and the position.