Project proposed by: **Supervisor:**	Intelligent Sensory Microsystems Laboratory, ECE, U of T Prof. Roman Genov
Project title:	**Miniature Wireless Implantable System for Neural Interfaces**
Project description:	The rapid advancement of neural interface technology demands innovative solutions for efficient data transmission between implants and external systems. A key challenge lies in developing compact, reliable, and high-performance wireless communication systems to handle neural data in real-time. This project offers an opportunity to contribute to solving this challenge by designing a small, integrated PCB-based system that bridges neural implants and external devices. We are seeking a highly motivated Electrical Engineering undergraduate to assist in this endeavor. The project will involve designing a PCB that incorporates a data receiver for decoding signals from neural implants, an MCU or FPGA for control and processing, and a Wi-Fi module for wireless data transmission. Responsibilities include PCB design, signal processing, and programming the control unit to enable seamless communication. This internship provides hands-on experience in system design, hardware integration, and signal processing while contributing to cutting-edge neural interface research. The project will take place in the Intelligent Sensory Microsystems Laboratory, with students working closely with a Ph.D. student. Candidates are expected to possess the following qualifications: • Self-motivation and a strong interest in low-power data wireless communication • A solid Embedded system and programming background (FPGA, MCU and PCB design) • Proficiency in programming with MATLAB and FPGA. This project offers an exciting opportunity to engage with state-of-the-art technology and make a significant impact in the field of neural interfacing.
Contact person:	Mr. Yu Huang (yuh.huang@mail.utoronto.ca) and copy to Prof. Roman Genov (roman@eecg.utoronto.ca). Please include your GPA, study program, and related accomplished projects in the email along with your attached updated CV and all of your transcripts (official or unofficial).