

Faculty of Engineering

Summer Research Program 2023-2024

Project Title: Restoring vision to the blind

Supervisor(s): A/Prof Yan Tat Wong

Department: ECSE

Email: yan.wong@monash.edu

Website profile of project supervisor: <https://research.monash.edu/en/persons/yan-wong>
<https://www.monash.edu/neurobionics> <https://www.monash.edu/bioniceye>

Objective

The Monash Vision Group is developing a cortical vision prosthesis to restore vision to the blind. To achieve this, we have designed an implantable device which can be implanted into the visual cortex of humans to deliver electrical stimulation to neurons to activate them.

Project Details

We have projects focused on the testing of the efficacy of this device, as well as developing supporting hardware. These involve the development of a psychophysics test suite to evaluate user performance and testing new vision processing algorithms to figure out the best ways to provide information to patients. Students will get to be part of designing and implementing a new medical device and gain experience in software and hardware design.

Prerequisites

Preferable experience with MATLAB and programming in C.

Additional Information

Please send me an email with

- your CV
- your marks transcript (it doesn't need to be certified)
- a writing sample (e.g. a recent assessment; if it's a group assessment, please submit one in which you did the majority of the writing).
- an indication of your level of programming and research experience.

Feel free to ask questions about the nature of the project. It is possible to tailor the work to match the experience or interests of the student.