Patrick O'Brien

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ADVISOR/MENTOR: Dr. Yan Gai
PROGRAM START: Fall 2019

BIOGRAPHY

Matthew O'Brien goes by his middle name Patrick. He is a St. Louis native with a love for helping people and an interest in neuro-degenerative diseases. He received his B.S. in Biomedical Engineering, with a focus in bio-electronics, from Saint Louis University in 2019. As a member of Dr. Yan Gai's lab he has explored the numerous uses for biosensors in evaluating the human neural pathways. His interests include biosensors, software engineering, artificial intelligence, and basically anything in the nervous system. When he isn't at home, he enjoys playing hockey, video games, working out and absolutely loves reading books.

RESEARCH

Alzheimer's Disease is the most common form of Dementia, a debilitating neuro-degenerative disease. There is currently no cure for Alzheimer's disease. Treatment relies on early diagnosis and slowing the cognitive decline. This project aims to increase accuracy of diagnosis and demonstrate earlier age of diagnosis to assist with treatment. This project combines deep learning methods and data from the Alzheimer's Disease Neuroimaging Initiative database to produce a program. This program takes inputs such as cranial MRI scans, cranial PET scans, clinical and genetic data. The output will be a confidence score.