

Joseph G. McGrath

EDUCATION

University of Notre Dame Bachelor of Science, Electrical Engineering with Honors Thesis	Notre Dame, Indiana, May 2019 GPA 3.96 Summa cum laude
University of Oxford Visiting Student Program Electrical Engineering	Oxford, England, 2017 – 2018

EXPERIENCE

Epic Systems Software Developer	Madison, Wisconsin August 2019 – Present
<ul style="list-style-type: none">Designed strategy to merge questionnaire frameworks and reduced new weekly issues by 50%Developed rapid solutions to support COVID-19 workflows in MyChart	
Notre Dame Computer Vision Research Lab Research Assistant	Notre Dame, Indiana June 2018 – June 2019
<ul style="list-style-type: none">Created open source presentation attack detection baseline for iris recognition using OpenCV, C++, and PythonTrained and optimized SVM, random forest, and MLP models for cross dataset testing	
Professor Tsung-Yi Ho, National Tsing Hua University Research Assistant	Hsinchu, Taiwan May 2017 – July 2017
<ul style="list-style-type: none">Explored methods to produce 3D cell images from low resolution CMOS sensorsDesigned a system for cell recognition using holographic cell imaging and extreme learning machines	

PROJECTS

Row Tracker Senior Design	Notre Dame, Indiana Spring 2019
<ul style="list-style-type: none">Implemented I2C connection in C to send data from inertial measurement unit to BLE microcontrollerUsed a state machine to send notifications over Bluetooth when certain threshold values were met	
Road Scene Segmentation Artificial Intelligence	Notre Dame, Indiana Fall 2018
<ul style="list-style-type: none">Programmed a system for lane detection using OpenCV and PythonImplemented object identification in road scene images using DarkNet neural network framework	
Lego Football Control Systems	Oxford, England Spring 2018
<ul style="list-style-type: none">Created a control loop based on Lego NXT dynamics to allow the robot to stand on two wheels	
Memory Architecture Microelectronics	Oxford, England Spring 2018
<ul style="list-style-type: none">Designed memory schematics for use with an 8-bit microprocessor in Cadence Virtuoso	

SKILLS

C, C++, OpenCV, MATLAB, Python, NoSQL, Control theory, Machine learning

HONORS

Boeing Engineering Scholarship Recipient	Dean's List, University of Notre Dame
Eta Kappa Nu	Tau Beta Pi
Brennan Scholar, University of Notre Dame	Engineering Scholars Program, University of Notre Dame