Joseph G. McGrath

jmcgrat3@nd.edu josephmcgrath.me

EDUCATION

University of Notre Dame — Notre Dame, Indiana, May 2019
Bachelor of Science, Electrical Engineering — GPA 3.93

University of Oxford Visiting Student Program — Oxford, England, 2017 – 2018

HONORS

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

EXPERIENCE

Notre Dame Computer Vision Research Lab — Notre Dame, Indiana
Research Assistant — June 2018 – Present

- Created open source textured contact lens detection software using OpenCV
- Trained models to determine the optimal parameters for use in lens detection

Fairchild Industries — Lake Zurich, Illinois
Quality Department Intern — August 2017 – September 2017

- Performed quality checks in accordance with engineering prints
- Diagnosed supplier problems in the case of rejected parts

Professor Tsung-Yi Ho, National Tsing Hua University — Hsinchu, Taiwan
Research Assistant — May 2017 – July 2017

- Designed novel cell recognition technique based on holographic cell imaging
- Implemented various machine learning techniques to improve recognition performance

Howard Group, Electrical Engineering Department — Notre Dame, Indiana
Research Assistant — April 2016 – May 2017

- Characterized the dispersion compensation system for the laser microscope
- Analyzed collected data using MATLAB

PROJECTS

Lego Football — Oxford, England
Control Systems Team — Spring 2018

- Created a control loop based on Lego NXT dynamics to allow the robot to stand on two wheels

Microelectronics — Oxford, England
Memory Design Lead — Spring 2018

- Designed memory schematics for use with an 8-bit microprocessor in Cadence Virtuoso

Introduction to Computing — Notre Dame, Indiana
Car Diagnostic Team — Fall 2016

- Programmed a scrolling LCD in C for use with a device capable of reading car diagnostic parameters

Introduction to Engineering Systems — Notre Dame, Indiana
Railgun Project Team — Spring 2016

- Programmed a projectile trajectory analysis in MATLAB with a GUI for visualization

SKILLS

C, C++, OpenCV, Verilog, Cadence Virtuoso, MATLAB, Control Theory, Oscilloscope