Bradley R. Selee

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Education

Senior Computer Engineering / Clemson University **August 2016 – Present**

College of Engineering, Computing and Applied Sciences

- Clemson GPA: 3.64
- Graduation Date: May 2021

Experience

Undergraduate Research - Computational Biology **January 2020 – Present**

Supervisor: Doctor F. Alex Feltus

- Applying concepts of computational biology to construct a multilayer perceptron neural network, written in PyTorch, to classify tissue samples using biological features such as gene expression and genotypes

Co-op Test Engineer at Itron **August 2018 – May 2021**

- Built and maintained ASP.NET MVC 5 Web Application with C and SQL using Visual Studio IDE allowing engineers to efficiently move meters throughout the meter farm
- Connected Web Application to Microsoft SQL Server to accurately represent the meter farm in the database and Linked Application with Git Version Control
- Created windows service to monitor XML files and email technicians/engineers upon job completion
- Gave in-depth presentation of co-op work to division leader

IEEE Robotics – Autonomous Robot Navigation **August 2017 – May 2019**

- Goal: design, build, and program an autonomous robot to navigate field and complete desired tasks with no human contact
- Utilized C++ to program sensors/motors with Arduino Microcontroller and Raspberry Pi
- Recognized objects with computer vision using the Pixy Cam 2
- Placed 5th out of 44 teams in IEEE SoutheastCon 2019 Hardware Competition

Undergraduate Research - Photonics **May 2018 – August 2018**

Supervisor: Doctor Liang Dong

- Assembled LIDAR sensor from 1550 nm pulse laser, piezoelectric stage for scanning, photodetector to convert light signal to electrical signal, and MATLAB for signal processing and 3D modeling
- Set up a 980 nm laser to improve laser efficiency by adjusting fiber coil diameter, writing Fiber Bragg Gratings with UV laser, and optimizing fiber length

Supplemental Instruction - Calculus I & II **August 2017 – May 2018**

- Plan and lead review sessions on class material twice a week at Tri-County Technical College

Projects and Events

Active Contours Computer Vision GUI

- Created a Python GUI that implements the active contour computer vision algorithm to segment complex images
- Exclusively uses the Tkinter, for the GUI, and Python's Image Library, to get pixel data

Snake AI with Deep Q-Learning

- Trained a Deep Q-Network using Python to play the game "Snake" by learning from its own mistakes and successes
- Used trial and error to input unique states and receive accurate outputs from the neural network

Events

- Clemson Hackathon 2017, IEEEXtreme14.0