Devon Gardner

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EDUCATION

Bachelor of Arts in Computer Science at New College of Florida **Aug 2020 – May 2023**
Honors Thesis – Exploring Robot Kinematics: an Engineering Approach

Associate of Arts in General Studies at State College of Florida **Jan 2018 – Jul 2020**

RELEVANT SOFTWARE DEVELOPMENT EXPERIENCE

WidowX 200 Robot Arm Control Architecture **Aug 2022 – May 2023**

- Applied linear regression to produce Gaussian mixture model-based motion primitives
- Evaluated performance of 5 motion primitives using root mean square error
- Utilized forward and inverse kinematics to convert between 3D coordinates and joint angles
- Communicated with robot arm through custom C++ DynamixelSDK wrapper and ROS2 framework

WORK EXPERIENCE

New College of Florida – Computer Science Tutor **Feb 2023 – Present**

- Troubleshoots student projects and provides strategic direction; has achieved 100% student satisfaction rating

New College of Florida – Teaching Assistant **Aug 2022 – Dec 2022**

- Taught students computer architecture concepts in small group format over 30+ office hour sessions; graded 100+ project submissions; handled integrity violations; improved course teaching materials; oversaw workshops

UofSC Center for Computational Robotics – Research Assistant **May 2021 – Aug 2021**

- Produced training dataset of underwater cave structures for robotic cave diving computer vision project
- Wrote Python script to ensure dataset quality by automating correction and culling of class labels
- Trained proof of concept YOLOv5 object detection model to classify structures with 82% mean average precision

State College of Florida – Supplemental Instruction Specialist **Oct 2019 – Aug 2023**

- Demonstrates application of programming concepts to tutees; teaches Python, Java, and C++ syntax
- Synthesizes concepts from Mathematics, Physics, and Chemistry; identifies student weaknesses; guides students through problem solving process

PROJECTS

Rasterizer **Feb 2023 – Apr 2023**

- Built computer graphics library to render user-defined 3D scenes using Rust
- Generated 2D images from object models using linear transformations and interpolation

From Nand to Tetris **Jun 2022 – Jul 2022**

- Built 16-bit Hack CPU and RAM from ground up using only NAND logic gates
- Designed and created logic gates and functional 16-bit Arithmetic Logic Unit in Minecraft
- Implemented assembler capable of supporting symbols and labels to generate machine language

Red Tide Dashboard **Apr 2022 – May 2022**

- Architected and implemented full-stack web application in Agile/Scrum team of three to produce ReactJS dashboard, aggregating 50,000+ data related to red tide
- Leveraged Twitter, YouTube, and Spotify APIs; built Express and MongoDB backend; deployed app on AWS
- Conducted sentiment analysis on Twitter data using nltk and scikit-learn libraries

RELATED COURSES & SKILLS

Courses: Software Engineering, Machine Learning for Visual Thinkers, Embedded Systems, Computer Architecture
Technologies: ROS/ROS2, Linux OS, C++, C, Python, Git, Arduino, Agile/SCRUM, Typescript, Javascript, C#, Java