

# 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 – July 2020

## RELEVANT SOFTWARE DEVELOPMENT EXPERIENCE

### 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

## 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 – Present

- 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

### 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

### From Nand to Tetris

June 2022 – July 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

## RELATED COURSES & SKILLS

**Courses:** Software Engineering, Machine Learning for Visual Thinkers, Embedded Systems, Computer Architecture

**Technologies:** Typescript (TS), Javascript (JS), C#, Git, Java, Agile/SCRUM, Linux OS, C++, C, Python, ROS/ROS2