

# Jack Warner Russell

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## Education

**Texas State University**      **GPA: 3.92**  
Bachelor of Science in Computer Science

Expected December 2023  
San Marcos, TX

## Projects

### Raspberry Pi Temperature Sensor

Dec 2021 – Aug 2022

- Implemented an automated room monitoring system to handle bad data from the current room thermostat
- Saved \$500,000 of Research Servers from high temperatures by utilizing a raspberry pi, Python3, and open source libraries for database needs and email notification functionality
- Created a web-based UI through an Nginx Server
- Designed automated services to run the temperature and humidity sensor on the raspberry pi

### Corrosion Detection Convolutional Neural Network

Nov 2022 - May 2023

- Supported a NASA-sponsored study by creating a robust data pipeline to accurately measure corrosion in microscopic images of corrosion samples obtained from a microgravity environment
- Attained an impressive 40-60% accuracy rate by leveraging Open-MMLab's MMSegmentation library to construct a cutting-edge UNET model for corrosion detection, matching industry standards
- Effectively communicated our research to stakeholders and department members through engaging presentations

### Bobcat Trail Class Routing App

March 2023 - Present

- Recognized the absence of efficient pedestrian routing services for navigating between classes at Texas State University, highlighting the need for an innovative solution
- Leveraged technologies such as HTML, JavaScript, OpenStreetMap API, Leaflet, and GraphHopper to develop a web app that facilitated the creation and storage of optimized pedestrian routes between classes
- Ran 2 rounds of testing with over 10 participants and presented our App to a panel of experts on University Affairs

### JPMorgan Chase “Data for Good” Hackathon

Oct 2022

- Advised a nonprofit where to place their next youth homeless facility by analyzing needs and data across USA
- Selected Boston as the best location by identifying impactful metrics and training a K-means Clustering model
- Presented our findings and visualizations to a panel of stakeholders in competition with 16 other teams (won third)

## Leadership and Employment History

### Instructional Assistant, TxSt Computer Science Infrastructure Team (San Marcos, Texas)

Jan 2022 – Present

- Provide IT services including maintaining hardware/software, account management, and server administration
- Led development projects including the Inventory Manager, Temperature Sensor, and Net Boot Projects
- Facilitated a student outreach opportunity by mentoring students to develop their own Raspberry Pi Clusters

### Lead Officer of the College Project, Phi Theta Kappa Honor Society (ACC Virtual)

Sept 2020 – May 2021

- Managed co-chairs, members, and administrators to create different Student Centers for the Spring 2021 Project
- Contributed to the Fall 2020 Project creating a module teaching Equity-Minded Student Leadership to potentially all of the 40,000 students at ACC through online modules
- Collected, compiled, and analyzed research through focus groups, surveys, and articles to supply the necessary data for both the Equity-Minded Student Leadership Project (Fall 20) and Student Centers Project (Spring 21)

## Honors & Certifications

**Education:** 2023 Computer Science Excellence Award | Nomination for Student Employee of the Year | Texas State Dean's List (Every Semester)

**Career:** CodePath iOS Development Course Certification | NASA STEM Engagement and Educator Professional Development Collaborative: XR Scene and Camera Control, XR Physics and Ray Casting, and XR GUI and Deployment Certifications | Terry O'Banion Student Technology Award Champion

## Technical Skills

**Coding Languages:** Experienced in C++, Java, Swift, and Python. Adept in HTML and Javascript

**Technologies:** Kubernetes, REST APIs, Xcode, OpenLDAP, Django, Docker, Linux, Raspberry Pi, Nginx, IPXE