

Yash Gharat

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Aspiring associate software engineer with 6 years of experience in innovative applications and interdisciplinary collaboration.

SKILLS

LANGUAGES: Python, Java, C, C++, Javascript, HTML/CSS, Dart

TOOLS AND FRAMEWORKS: Agile Dev, Scrum, Jupyter, CMake, Linux, Bootstrap, Material.io, Angular, Node.js, AWS, Flutter, Git, React, Firebase

EXPERIENCE

CAEUSA **August 2021 - Present**

Application Software Engineer

- Granted Secret Clearance
- Designed the development of a comprehensive mockup in Figma, integrating a versatile component library, wireframes, and dynamic theming for a sophisticated Angular dashboard.
- Developed a Multi-System Health Monitoring Dashboard in Angular with a C# backend that scraped metrics using Prometheus
- Created a C++ application and library that concurrently managed receiving, decoding, and sending standardized, serialized messages to support communication between collaborating simulation software.
- Improved and maintained an Electron app that performed rasterization on drone imagery to create 3D models using ODM to enhance tactical knowledge of field environments.

Modeling and Simulation Co-op

- Developed a Q-learning model that used sensory and communication data to detect and perform tasks related to enemy detection.
- Integrated the Distributed Interactive Simulation (DIS) interface in Python, MATLAB, and other DoD related software to work towards a dynamic and intelligent adaptive kill-web.
- Decoded of Link16 Signal Protocol Data Units (PDUs) to facilitate centralized decision-making on multiple CGFs
- Contributed to a Human-Machine Teaming project focused on multi-domain operations, measuring trust in complex AI-driven synthetic teammates to enhance mission performance.

Unmanned Autonomous Systems Lab **June 2020 - August 2021**

Intern/Research Assistant

- Implemented MATLAB algorithms to simulate autonomous UAV formation for asset protection and enemy tracking using proprietary Advanced Framework for Simulation, Integration and Modeling (AFSIM) Software.
- Optimized runtimes in certain scenarios by offloading computations and scripts to MATLAB and Python.
- Implemented adaptive tracking assignment using multiple factors natively in AFSIM
- Developed dynamic UAV priority-based reallocation with nearest neighbors in AFSIM
- Implemented Markov Decision Processes to allocate tasks to UAVs

STIR Lab **August 2019 - October 2020**

Full Stack Developer/Researcher

- Developed Android app for a HCI PhD study that collected user data with an AWS backend using Cognito, S3, Lambda, and Gateway
- Developed companion Angular Dashboard which interacted with app users to aid in study management and reward disbursement

PROJECTS

Goop Dashboard

- Built a Raspberry Pi-powered LED pixel dashboard with integrated features including an advanced tamagotchi, weather display, and Spotify integration.

Graduation Hat

- Built a Raspberry Pi-powered LED pixel dashboard that using Bezier curves and basic calculus to display a fireworks display on a loop

Algorithms for String Analysis

- An annotated Jupyter notebook to visually demonstrate the runtimes and applications of several optimal algorithms commonly utilized in genome analysis.

PhantoMouse

- Generated a synthetic 3D dataset using Blender and Unity for a machine learning project enhancing computer mouse accessibility for prosthetic users.

Envoy Commander

- Developed a distributed Reinforcement Learning model for a gamified hardware environment, with a central learning agent and auxiliary agents for multi-armed bandit tasks.

Projector Hush Box

- Created a hush box using Solidworks modeling to soften the noise of a dorm projector while maintaining proper airflow inside the box and maintain modularity for moving it.

EDUCATION

Bachelors of Science in Computer Engineering (BSCpE) **2022**

University of Central Florida

Masters of Science in Computer Science **Expected Spring 2024**

University of Central Florida

Coursework: Network Optimization, Computer Architecture, Algorithms on Strings and Sequences, AR Engineering,