




SAGAR PATIL

US Citizen | @sagarreddypatil@gmail.com |  sagarreddypatil |  linkedin.com/in/patilsr |  sagarpatil.me

EDUCATION

Purdue University

B.Sc. in Computer Science

West Lafayette, IN

Class of 2025

WORK EXPERIENCE

Ansys Government Initiatives (AGI)

SWE Intern

Exton, PA

Summer 2022

- Delivered several new features and bugfixes on STK's C++ codebase with minimal prior experience
- Implemented new ITU RF propagation standards for STK's Communication and Radar component
- Implemented a framework for easier development of Unit Tests using GTest
- Contributed in weekly standup meetings with the team to discuss progress and new tasks

Bloomberg LP

SWE Intern

New York, NY

Summer 2019

- Worked on an internal web application to label Named Entities in text and manage model training
- Used Bootstrap and CSS to design and revamp various responsive pages and components
- Implemented new features and added functionality on the full stack, using Python, Flask, MySQL, and ReactJS

EXTRACURRICULARS

Purdue Space Program Liquids

Avionics Lead

Purdue University

Since Fall 2021

- Managing development of flight software and embedded device drivers in C/CMake for a bipropellant rocket
- Developing mission control UI using NextJS and uPlot, with high data rate plotting and real-time downsampling
- Designing protocols for data acquisition, configuration, and control of flight critical Avionics systems
- Performing systems-level design and reviews of avionics hardware, including part selection and integration

ACM Special Interest Group on AI (SIGAI)

Officer and Project Lead

Purdue University

Since Fall 2021

- Leading the development of a project group for exploring the sampling of Large Language Models
- Developed a simulation of the 2021 VEX Robotics Game in Unity as an environment for an RL agent
- Leveraged machine learning in PPO-based reinforcement learning model to "learn" a pathfinding problem
- Utilized ONNX to optimize and convert PyTorch computer vision models to run on a Jetson Nano co-processor

PROJECTS

NLP Chatbot | github.com/sagarreddypatil/nlp-chatbot

- Made a modular framework for serving large language models, built on HuggingFace's Transformers
- A Large Language model prompting project for conversation purposes, interfaced over Discord

Marching Cubes | github.com/sagarreddypatil/Marching-Cubes-Unity

- Implemented the Marching Cubes algorithm in Unity3D to mesh implicit surfaces
- Optimized the algorithm, at first using Compute Shaders and later moving to CPU multithreading.

SKILLS

Programming: C, C++, Python, Java, C#, Dart, HTML/CSS, Javascript, SQL

Libraries/Tools: PyTorch, OpenCV, React, Electron, Express, Flask, .NET, Postgres, CMake, PlatformIO, Arduino

Misc: Git, Linux, Vim, Unity3D, Altium Designer, KiCAD, Ansys HFSS, Ansys STK

AWARDS & ACHIEVEMENTS

President's Volunteer Service Award Gold Awarded for completing more than 250 hours of volunteer service.

Affectiva EMPATH Makethon Winner Created a Large Language Model-powered chatbot that considers emotions detected by Affectiva's Human Perception AI