

VIGNESH RAJMOHAN

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864-906-2620 | US Citizen

EDUCATION

CARNEGIE MELLON UNIVERSITY

B.S. Electrical and
Computer Engineering
B.S. Robotics
May 2022 | Pittsburgh, PA
GPA: 3.61 / 4.00

COURSEWORK

- Computer Systems (C Language)
- Embedded Systems (C, ARM)*
- Computer Graphics (C++)*
- Robot Kinematics and Dynamics (MATLAB)
- Digital Systems (SystemVerilog)
- Linear Algebra
- Signals and Systems (MATLAB)
- Data Structures (C Language)
- Probability Theory

*denotes Spring 2021

SKILLS

PROGRAMMING

- C
- Python
- JavaScript
- SystemVerilog
- Bash
- C++
- MATLAB
- RAPID
- x86
- Python

TOOLS

- Unix
- ROS
- ReactJS
- SolidWorks
- Agile
- Git
- GDB
- NodeJS
- Scrum
- Fusion 360

FABRICATION

- 3D Printing
- Laser Cutting

LINKS

Website: vigneshrajmohan.me

LinkedIn: vignesh-rajmohan

GitHub: vigneshrajmohan

ACTIVITIES

CMU Robotics Club
CMU Iris Lunar Rover

WORK EXPERIENCE

CARNEGIE MELLON SCS | TEACHING ASSISTANT - COMPUTER SYSTEMS PITTSBURGH, PA | FALL 2020

- Taught 15-213 recitations on systems topics including machine-level code, memory, networking technology and protocols, and supporting concurrent computation.
- Held office hours to review concepts and assist debugging programming labs.

UNITED ROBOTICS LLC | SOFTWARE ENGINEER

SAN JOSE, CA | SUMMER 2020

- Consulted by T-Mobile to develop C++ software to allow for "mirroring" gesture-based control of a YuMi robot arm for the T-Mobile 5G Remote Robot Experience.

CMU ROBOTICS INSTITUTE | RESEARCH INTERN

PITTSBURGH, PA | SUMMER 2020

- Implemented policy iteration for path planning for an autonomous taxi.
- Created interactive online user study with Amazon Mechanical Turk and designed robust NodeJS grid-world simulations.
- Integrated multiprocessing to optimize AI reinforcement learning performance.

ABB | SOFTWARE ENGINEERING INTERN

SAN JOSE, CA | SUMMER 2019

- Constructed Externally Guided Motion (EGM) system for rapid responsive motion control through TCP/UDP communication.
- Developed computer vision algorithms with OpenCV and PCL for surface-orientation detection/classification.
- Improved safety of ABB industrial robots, enhanced software was implemented globally at all ABB R&D entities.

PROJECTS

MALLOC | SPRING 2020

Implemented a dynamic memory allocator for C programs using segregated free lists with FIFO policy. Supports malloc, calloc, realloc, and free functions. Optimized using footer-less blocks and mini blocks. Developed using C, used GDB for debugging.

CONCURRENT WEB PROXY | SPRING 2020

Developed a web proxy in C to handle and cache requests concurrently with multithreading using POSIX thread.

LAMPEX | SPRING 2019

A 4 degrees of freedom robotic lamp designed in SolidWorks that interacts with users using computer vision (OpenCV) and machine learning (TensorFlow) to classify user emotions and "express" itself using joint configurations that mimic human behavior.

THREAD (NAVIGATION APP) | FALL 2018

An iOS application written in Python that allows users to leave a digital "thread" when traveling using GPS and accelerometer data to easily find their way back.

NEXTUP | FALL 2018

Group Spotify voting app that utilizes the Spotify python API with a Flask backend and React UI to play songs in order of vote count. Placed 3rd overall at CMU hackathon.