

1211 University City Blvd
Blacksburg, VA
24060

Haritha Gnanasegar

<https://linkedin.com/in/harithagnanasegar>

aghari19@vt.edu
<https://aghari19.github.io>

EDUCATION

Bachelor of Science in Computer Engineering, Major - Controls, Robotics, and Autonomy, May 2021

Virginia Tech, Blacksburg, VA

Relevant Coursework, Licenses, and Certifications:

Problem Solving with C++	Digital Image Processing	Embedded Systems Design*
Data Structures and Algorithms	Computer Vision	Principles of Robotics*
Applied Software Design	AI and Engineering	Computer Architecture
Embedded C – Microcontroller	Network Application Design	

GPA: 3.47 (Dean's List – Fall 2017, Spring 2018, Spring 2019)

ACADEMIC PROJECTS

ELDERLY CARE HOME GROCERY SYSTEM

NETWORK APPLICATION DESIGN

- Designed a grocery ordering application for elderly care home where the users interact with a web UI and generate their order using voice commands
- Implemented the voice commands and recitation of the order using Microsoft Azure Speech to Text and Text to Speech API's
- The application is supported by a RESTful API and programmed in python as a part of a 3 member team

QT BASED CALCULATOR

APPLIED SOFTWARE DESIGN

- Designed and implemented a GUI calculator using Qt application with the help of dynamic polymorphism, composition and event-driven programming in C++

EMBEDDED C TARGET BOWLING ALLEY GAME

MICROCONTROLLER INTERFACING

- Used analog-digital converter to interface with joysticks, PWM signals and buzzer
- Implemented the game with functionality of angle bowling, random pin generation, bowling force variation

IMAGE COLORING

DATA STRUCTURES AND ALGORITHMS

- Deployed a flood filling algorithm using a linked-list stack to color specific regions in a given image in C++
- Command line prompts were used to specify the image, RGB values and coordinate of the region

BILL TAMPER DETECTION

PROBLEM SOLVING WITH C++

- Used a hash function and determined if a given bill was tampered with or not during transmission
- The hash message and id number of the bill was parsed in a signing method that determined the bill as bad/good

RELATED EXPERIENCE

Victor Tango Autonomous Vehicle Team, Autodrive-Society of Automotive Engineers(SAE), August 2020 – Present

Virginia Tech, Blacksburg, VA, **Advised:** Dr. Steve Southward

- Secured 1st in the Concept Design Presentation of the Autodrive Year 3 competition organized by SAE
- Designing the Local Planner reroute functions using finite state machines and testing in simulation
- Studying different mapping algorithm for the global reroute method

Undergraduate Research Assistant, Electrical and Computer Engineering, January 2020 – May 2020

Virginia Tech, Blacksburg, VA, **Advised:** Dr. Leyla Nazhandali

- Researched 3 different types of signal processing techniques using conference papers, analyzed the best fit for dataset
- Developed programs, for Intelligent Wearable Analyzer, for signal smoothing and peak detections in Python and C respectively to view the concentration of different gases

Tutoring Lab Staff, Math Emporium, August 2019 – Present

Virginia Tech, Blacksburg, VA,

- Tutor 3-8 students weekly in intro-level math classes to improve study habits
- Coach students one-on-one to aid with concept understanding

SKILLS/ACCOMPLISHMENTS

C, C++, Python, MATLAB, HTML, CSS, Linux(Ubuntu), MSP432 Board, Microsoft Office
Authored "N'Kana: August 2020 – a collection of 10 short stories"
Languages- English, Hindi, Tamil, French, Arabic

*Classes currently enrolled in