Rishi Papani

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EDUCATION

UNIVERSITY OF MARYLAND

BS in Computer Science & Math
Expected 2023 | College Park, MD
President's scholarship
Journalism scholarship
Current GPA: 3.96/4.0

THE INTERNATIONAL SCHOOL BANGALORE

Grad. July 2020| Bangalore, India

VARIOUS MONTGOMERY COUNTY MAGNET SCHOOLS

Aug 2007 - Jun 2014| Germantown, MD

LINKS

Github:// rspapani
LinkedIn:// rspapani

SKILLS

PROGRAMMING

Python • Java • C • Matlab
Scheme • HTML/CSS
MIPS Assembly• QML

LIBRARIES

PyQt • NumPy • OpenCV
Flask • RPi.GPIO •PySerial
• PyGame

MISCELLANEOUS

GNU/Linux • Raspberry Pi • LaTeX
Functional Programming • Vim
MS Office • Excel • Access
Designing and creating electric circuits

COURSEWORK

Systems Programming
Object Oriented Programming
Multivariate Calculus
Linear Algebra
Capital One Machine Learning
Discrete Structures

TEST SCORES

ACT: 36
Subject SAT Math: 800
Subject SAT Physics: 800

EXPERIENCE

CORNELIUS BEVERAGES | Software Engineering Intern

June 2019 – August 2019 | Bangalore, IN

- Worked on Smart Beverage Dispenser's GUI and Inventory Management.
- Enabled the real-time synchronization of beverage supplies with the dispenser GUI menu to reduce the number of clicks for the customer.
- Usage data was collected and then analyzed to enable automated predictions regarding when supply would deplete, done using Python.
- Led a team of Interns and developed a Smart Module for pre-existing Food Heating Unit, done for sister company, Prince Castle.
- Designed a data packet format, which is readable by pre-existing Food Heating Unit's ARM controller, using pre-existing specifications.
- Developed a program to read data received from an MQTT service, program it into the packet format, and send it to the ARM controller using Serial Communication, using Python and the PySerial Library.

PROJECTS

OPTIFOCAL DRIVE May 2020 – June 2020

- A machine learning application that detects whether or not someone paying attention, i.e. to monitor people driving and prevent crashes.
- It works by using both facial recognition and facial landmark detection models to find a face, calculate it's orientation, and then uses statistical averaging to determine if someone is distracted.
- The actual calculations use linear algebra and trigonometry.
- Programmed in Python using OpenCV, Dlib, and the PnP algorithm.

2D PHYSICS ENGINE Oct 2019 – Dec 2019

- A Physics simulator of 2D objects, accurately portrays Elastic collisions, air resistance, gravity, and drag on rigid bodies.
- Uses a particle system, that allows structures of any shape, density, and elasticity to be created.
- Particle system made by using constraint relations, and verlet integration.
- Engine developed in Python, can use PyGame as a graphical front-end.

ROVEX Jan 2019 – Feb 2019

- A Wifi Controllable Rover with Live Camera Feed. It Streams live footage to a web page which contains controls that may be used to control the robot.
- Raspberry Pi used for the robotics, programmed in Python using RPi.GPIO.
- Website front-end developed using HTML/CSS and basic Javascript with AJAX to link it to a Flask controlled Python API that managed the actual robot control program.

MIPS INTERMEDIARY LOGIC LANGUAGE Nov 2020 – Dec 2020

- A programming language that compiles to MIPS assembly, written in Python
- Allows for lower level assembly programming without register management
- Supports function declarations, local/global variable scoping, and memory allocation.

COMMUNITY INVENTORY MANAGEMENT TOOL Sept 2020

- Web server that acts as a publicly manageable supply database
- Engineered Backend using Python's Flask library to manage the site's API, and SQLAlchemy to manage the users and the data tables in an SQLite database.