SANJAY MOHAN KUMAR

571-307-0134 ∘ smohanku@gmu.edu
linkedin.com/in/smohanku ∘ github.com/San68bot

EDUCATION

George Mason University Expected Graduation: May, 2026
Pursuing Bachelors degree in Computer Science *Fairfax, VA*

- **Relevant Coursework:** Object-Oriented Programming, Data Structures

Broad Run High School Aug 2018 - June, 2022
Ashburn, VA

- **Advanced Placement:** World History, Computer Science A, Statistics
- **Honors:** Research Chemistry, Physics, Project Lead the Way(PLTW)
- **Achievments:** Workplace Readiness Certification, Microsoft Office Specialist, W!SE Financial Literacy certification

SKILLS

Programming	Java, Kotlin, Python, C++, Latex, Git, Unix Shell, OpenCV
Software	IntelliJ, Visual Studio, MATLab, Microsoft Office, Adobe Software
Hardware	Arduino, Raspberry Pi, 3D Printing
CAD	Onshape, Autodesk Fusion 360
Robotics	State Machines, Control Theory, Trajectory Generation & Following, Open & Closed Loop Controllers
Soft Skills	Leadership, Problem Solving, Critical Thinking, Teamwork

PROJECTS

Smart Signal: *C++ | Arduino* September, 2017

Designed, assembled, and programmed an innovative project that simulates a traffic intersection in which the lane with the most traffic(identified using sensors) is prioritized the green light foremost in order to minimize traffic build-up.

Projectile Motion Simulator: *Python | Physics* September, 2020

Created a program that could estimate the necessary variables to launch an object a specified distance. This program derived velocity(could be translated into motor power), launch angle, and flight duration while accounting for environmental influences. Developed as part of FIRST Tech Challenge 2019-20 season Ultimate Goal.

State Machine Builder: *Kotlin | State Machines | Software Library* February, 2022

An extremely robust software library designed to make the creation and analysis of Finite State Machines as easy as possible. Its potential to be embedded into any system is made possible by a "Plug-and-Play" style interface.

Sensor Localization: *Kotlin | Real-Time Position Estimation | Software Library* July, 2022

Software library that uses distances to nearby fixed objects to derive a robot's relative real-time position (x, y, θ). Additionally, it can communicate with sensors to retrieve readings at optimal times as needed.

AlphaLib: *Kotlin | Control Theory | Trajectory Generation & Following | OpenCV | Software Library* August, 2022

An all-in-one package that makes programming any FTC robot easier and highly efficient. Several control theory concepts are skillfully implemented, such as Trajectory Generation & Following, Open & Closed Loop Controllers, and Object Classification.