

Vinodh Nagarajan

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EDUCATION

University of Illinois at Urbana-Champaign | Champaign, IL

Expected: May 2023

Bachelor of Science in **Mathematics and Computer Science**

Cumulative GPA: 3.70

Relevant Coursework: Software Design Studio, Data Structures (C++), Computer Architecture

Arizona State University | Tempe, AZ

Attended: August 2019 - May 2020

Bachelor of Science in **Computer Science**

Cumulative GPA: 3.75

Relevant Coursework: Object-Oriented Programming and Data Structures (Java), Digital Design Fundamentals

SKILLS AND TECHNOLOGIES

Programming Languages: Java, C++, Python, Kotlin, C

Web Development: JavaScript, CSS, HTML, Bootstrap

Tools and Operating Systems: Git, Windows, Ubuntu, Microsoft Word, Microsoft Excel, Adobe Photoshop

ACTIVITIES

Electronic Systems Engineer, Illini Motorsports | Champaign, IL

August 2020 - Present

- Used the MPLAB X IDE and XC32 Compiler in conjunction with a Microchip 32-bit microcontroller to create an auto-upshifting paddle-shifting gear control module, custom steering wheel, and power distribution module.
- Refine existing C codebase to improve readability, organization, maintainability and system stability for the 2019-2020 vehicle and any future vehicles.

Systems Engineer, Sun Devil Motorsports | Tempe, AZ

August 2019 - May 2020

- Developed a custom paddle shifter gear system and control module for simpler and more reliable vehicle operation at speed.
- Built a more compact dashboard and steering rack and optimized driver seating position to improve driver visibility, vehicle controllability and vehicle stability during operation.

Programming Lead, DVHS Robotics Team 5776A | San Ramon, CA

April 2018 - May 2019

- Developed a PID controller and 2D grid positioning system in the PROS operating system and C++ programming environment to allow for more precise robot control and for the creation of more efficient and higher point scoring autonomous routes during match play.
 - Created a data logging and robot optimization program that constantly polled sensor and motor data to optimize the control algorithm to improve autonomous route efficiency and points scoring.
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PERSONAL PROJECTS

BackTap, Android app that uses taps on the back of a phone to perform actions

- Developed in Android Studio using Kotlin, this app uses data from the phone's accelerometers to detect double and triple taps on the back of the user's phone which can be mapped to various actions.

A* Pathfinding Visualization, Python program to visualize paths between points and around obstacles

- Developed in Python and using the tkinter GUI library, this program allows the user to draw a starting point, finishing point and obstacles. It calculates the shortest path around user-placed obstacles and draws the shortest and most efficient path.