

Michael Rooplall

New York, NY 10038 | MichaelRooplall@gmail.com | (347) 858-5954

www.linkedin.com/in/michael-rooplall | www.github.com/DeveloperBlue | www.MichaelRooplall.com

EDUCATION

Pace University, Seidenberg School of Computer Science and Information Systems

New York, NY

Bachelor of Science (B.S.) in Computer Science | **Concentration:** Full-Stack Development

May 2021

Honors: Pforzheimer Honors College | **Major GPA:** 3.78

EXPERIENCE

Seidenberg Creative Labs

Manhattan, NY

Project Manager

September 2020 – May 2021

- Lead a team of developers to build a website for Seidenberg Creative Labs. Held stand-ups and sprints, gave technical guidance, and ensured team members weren't facing roadblocks or behind schedule.
- Implemented lint checking, **TypeScript**, code reviews, and component isolation ensuring project was maintainable and up to industry standards.

Software Engineer

September 2020 – May 2021

- Worked on a team to create a GPS-guided quiz game and tour through Manhattan to various locations visited by Alexander Hamilton in **React Native**. Interfaced directly with client and team to give various technical advice, implement requested features, and ensured UI scaled across various device.
- Worked on a team to create a health centric fitness application using **Flutter** and **Dart** on client company's proprietary peer-to-peer encrypted network to bring more applications and users into their ecosystem.

Benjamin N. Cardozo High School - Robotics Team

Bayside, NY

Mentor | Consultant

November 2017 – Present

- Built and maintained the full stack of a website using HTML, CSS, JavaScript, **NodeJS**, **MongoDB**, and other various APIs to allow members to handle attendance, apply for scholarships, administrate, and easily update website information.
- Designed and built a custom Linux-based **robot controller** using a RaspberryPi, NodeJS, Electron, and Java to reduce the cost of purchasing expensive proprietary hardware, saving approximately \$700 per unit.
- Lead after-school classes teaching high school students advanced computer science concepts pertaining to vision processing, optimization, motion profiling, and more.

Lead Software Engineer

September 2014 – June 2017

- Programmed 120lbs robots in **Java** to compete in the FIRST Robotics Competition (FRC), creating robots that complete various tasks both autonomously and controller-operated, meeting strict deadlines and guidelines.
- Implemented **Git** Version Control and **CI/CD** to review and manage student contribution to robot updates.
- Implemented **real-time off-board vision processing** and object tracking using Java and OpenCV allowing robots to identify, target, and interact with specific goals.
- Led after-school classes, teaching high school students introductory and intermediate Java.

SKILLS

Languages: Java (Kotlin), JavaScript (NodeJS, TypeScript), Python, HTML, CSS & Sass, Dart, Lua, Bash, PHP

Databases: MongoDB, SQL, Redis

CI/CD, Tests: GitHub Actions, Jest

Libraries: React Native, React, Redux, Electron, Express, Flutter, GraphQL, Ffmpeg, OpenCV, jQuery, Amazon Web Services (AWS), Google Cloud Platform (GCP), TLS/SSL, SSH

Software: Docker, Git, WSL, Trello, Figma, Adobe XD, Slack, Microsoft Teams, Microsoft Office, Sony/MAGIX Vegas, OBS Studio, Handbrake, Adobe Premiere, Photoshop, Illustrator, Audition, InkScape, GIMP, Blender, Bootstrap Studio, Android Studio, WireShark, Roblox Studio, Unreal Engine, Unity

PROJECTS – www.MichaelRooplall.com/Projects

Project Stream

September 2020 – Present

- Designed and built a cross-platform streaming application allowing for video conferencing, screen sharing, accessing a shared remote virtual browser with **NodeJS**, **TypeScript**, **React Native**, **Electron**, Mediasoup, **AWS** services, and more.
- Designed and built a virtual browser using **Docker**, Linux, xvfb, PulseAudio, Ffmpeg, and Puppeteer to allow users shared control over a remote virtual device.
- Implemented a **WebRTC SFU** (Mediasoup) with simulcast allowing for scalable video conferencing, screen sharing, and remote control across client devices.

- Refactored codebase to allow for **vertical and horizontal scaling** across AWS EC2 instances with **load balancing** for Express, SocketIO, Redis, and Mediasoup.
- Implemented image caching using AWS S3 and AWS CloudFront.
- Implemented a **JWT** token-based authentication system with Express, Axios, SocketIO, Redis, and MongoDB/Mongoose.

React Native Positron / React-Native-Web

January 2022 – May 2021

- Designed, implemented, and open-sourced a project template for developing cross-platform apps for Android, iOS, Windows, MacOS, Linux, and the Web using React Native, React-Native-Web, and Electron with TypeScript, Webpack, and Babel.
- Published entire project writeup and analysis on [Medium](#) along with the open-source code on [GitHub](#).

Hamiltour

September 2020 – May 2021

- Collaborated on a team to create a GPS-guided quiz game and tour through Manhattan to various locations in React Native for iOS and Android devices.
- Implemented GPS-based background notifications and quiz alerts during the tour, removing the need for the application always running in the foreground and dramatically improving user experience.
- Implemented and enforced design standards with flexbox across development team to ensure the UI/UX scaled across different devices.

AuroraBot – NodeJS Discord Bot

June 2017 – December 2019

- Designed and built a multi-purpose, modular Discord bot using Express and other libraries in NodeJS, a MongoDB database, and Ffmpeg for audio processing. Could provide entertainment, handle administrative tasks, and search queries across multiple databases.
- Designed a sleek UI/UX for non-CLI users and used multithreading to enable the bot to handle thousands of messages per hour across hundreds of users with further scalability.

RaspberryRIO - Robot Controller

December 2017 – July 2019

- Designed and built a Linux-based robot controller that ran on a RaspberryPi, using NodeJS, Electron, Java, network socket protocols, and various breakout boards, alongside an external web dashboard controller to replace expensive proprietary hardware.

RECOGNITIONS

Seidenberg Creative Labs

- The Seventeenth Annual Pace Pitch Contest - Ludos Mercatos - *Finalists* (2021)
- Pace Mobile App Design Contest 2021 - Ludos Mercatos - *Winners* (2021)
- @Appathon Competition - atHealth - *Winners* (2020)

FIRST™ Robotics Competition

- SBPLI Long Island Regional #2 Competition - *Finalists* (2019)
- Hudson Valley Rally Competition - *Finalists* (2017)
- New York City Regional Competition - *Rookie Inspiration Award* (2015)
- Brunswick Eruption Off-Season Competition - *Future Glory Award* (2015)

Queens College - HackAttack 2018

24 Hour Hackathon hosted by Queens College

- *Finalist* for the *Community Connected* challenge. Lead developer on team that developed RePixel, an incentivized geocaching recycling application. Presented to a panel of IBM judges.

Gaming for Global Change

Non-profit Organization (2016, 2017)

- Participated in various Gaming for Global Change events with staff, raising significant sums of money for *Charity: Water* and other non-profit organizations.

RELEVANT COURSEWORK

Mathematical Structures | Web Design | Data Structures and Algorithms | Fundamentals of UNIX and C | Computer Organization | Algorithms and Computing Theory | Programming Languages and Implementation | Operating Systems and Architecture | Software Engineering | Computer Networks and the Internet | Mobile Web Development | Intro to Data Mining | Artificial Intelligence |