

Muhammad Hamza Nasir

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Skills

PROGRAMMING LANGUAGES

JavaScript
Python
Ruby
Java
C
R

FRAMEWORKS

Node JS
Express JS
React JS + Redux/MobX
Tornado
Django
Ruby on Rails
Sails JS

DATABASE SYSTEMS AND SCRIPTING LANGUAGES

PostgreSQL
MySQL
MongoDB

INTERNET OF THINGS

Arduino
Raspberry Pi
ESP8266
Helium Platform

CLOUD PLATFORMS AND VIRTUALIZATION

Docker
Amazon AWS/EC2
Heroku

Education

Illinois Institute of Technology

Bachelor of Science in Computer Engineering - May 2019
• Cumulative GPA: 3.52

Employment

NuMat Technologies, Inc.

Software and Controls Intern

May 2017 to Aug 2017

NuMat Technologies, Inc. is an advanced technology company innovating at the **intersection of big data, material science, and hardware systems**.

- Set up a **gas-test manifold with a variety of sensors and actuators** to allow production of a specific kind of Metal Organic Framework (MOF).
- Developed full-stack web application in **Python** using **Tornado** and **MongoDB** to communicate with the gas-test manifold and its components so that chemists can **observe and control** its state remotely.
- Fixed long-standing bugs with existing systems and **updated controller programs** to comply with most recent code standards (**PEP 8, ES6, Airbnb-Javascript**).

Projects

FakeAir - fakeair.herokuapp.com

Developed a **full-stack** airline web application using **Node JS**, **Express JS** and **PostgreSQL** with an intuitive front-end interface made using **Bootstrap**. No ORM was used to emphasize **SQL scripting and queries**. Deployed on **Heroku**.

Personal Home Automation System

Arduino Controlled mini-home automation system for a room that **controls lights based on voice recognition and various sensor readings** (e.g. light, proximity). For example, when the light in the room is low and the proximity sensor registers a reading of someone's presence in the room, a **voice prompt** will ask the person whether he/she wants to turn on the lights.

Indoor Location for Emergency Callers - api.iitrtclab.com

Current

Working with a team of 14 developers to develop a service which allows callers in distress to call a PSAP operator with GPS location along with an exact indoor location including, room number and floor. The service uses multiple BLE devices on every floor to calculate location using an algorithm that triangulates using RSSI values and use those x, y co-ordinates to map to a particular floor and room.

IIT Facilities Application - rtcfacilities.herokuapp.com

Current

Developed a full-stack web application with **Ruby on Rails** and **PostgreSQL** that uses data from IIT's real-time communication platform to get data for temperature and humidity for every room and floor. The facilities department can use the app to monitor temperatures while students/faculty can use the app to request a higher or lower temperature by interacting with **SVG's** for that particular room and floor. Application uses **d3** for **data visualization**.

Maze solving robot

Worked with a team to **engineer a small vehicle** out of LEGOs that uses **light and touch sensors** to **autonomously** navigate through any random maze with either physical or paper-tape walls using the **Handy-board microcontroller**.

Awards

Dean's List Awardee

All semesters in school except for Spring 2016

IEEE-Eta Kappa Nu Delta Induction

Inductions handed out to top 20% of batch

Leadership

Pakistani Student Association · Treasurer

- Work with the president to organize and schedule events. Assume the role of the president in his absence.
- Responsible for deciding and altering budgets with the Office of Campus Life. Emailing cooperatively with fellow executive board members and outside parties.
- Conducting seminars and setting up conferences with the help of the executive board.

Beaconhouse Newlands Debating Society · Vice president

- Coordinated with Model United Nations exec-boards, conducted MUN trials and participated in conferences.
- Worked with coach and president to hold two debating sessions per week.