

# Arsh Sharma

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## EDUCATION

### NIT HAMIRPUR

B.TECH + M.TECH

ELECTRONICS AND COMMUNICATION

Expected May 2023 | Hamirpur, IND

Cum. GPA:8.32

### MOUNT CARMEL SCHOOL

Grad. Mar 2018 | Himachal Pradesh,

IND

Cum. GPA:10

## LINKS

Github:[Sov-trotter](#)

LinkedIn:[sov-trotter](#)

## SKILLS

### PROGRAMMING

Julia • Python • C++ • Matlab • GoLang

### TOOLS

Atom •  $\text{\LaTeX}$  • Vim • VisualStudio Code

### LIBRARIES

Matplotlib • DataFrames(Pandas)

Three.js, • JSON(RPC) • Tensorflow p5.js

• Turing.jl • QuantumBFS • Plots

### MISCELLANEOUS

Arduino • Quantum Information Theory

Processing • Blender • Genetic

Algorithms • Microsoft Kinect SDK

Generative Art • Webscraping

## EXTRACURRICULARS

• Aug'20-Nov'20 - Joint Secretary Hult Prize NITH

• Aug'18-present - Coordinator Team ISTE

• 2018 - 2019 - Animator at Pixonoids

## WORK EXPERIENCE

### STUDENT DEVELOPER - JSOC'20 May'20 - Sept'20

Julia Season of Contributions

- A GeoSpatial data handling ecosystem for the Julia language
- The project simplifies the GIS pipelines to read and view data in Julia, right from parsing it to a Tabular format and be able to plot it, all withing 4 lines of Julia code!

### TECHNICAL WRITER - GEEKSFORGEEKS April'20

- Writing articles on The Julia Language

## PROJECTS/OPEN-SOURCE CONTRIBUTIONS

### IBMQJulia.jl Oct'20

- A package written in Julia that uploads quantum circuits generated by Yao.jl to IBM-Quantum, that runs quantum circuits on real quantum computers.
- This package implements the [OpenQasm specifications paper](#).
- For now it can login, select backends, upload the circuits and get the results from the IBMQ server made possible by two major units the REST API and the Yao IR to QObj parser.

### Randomorg\_API.jl Nov'19

- Wrote a client library that fetches true random numbers from Random.org ( It can be now found on Random.org's official website. )
- RANDOM.ORG offers true random numbers to anyone on the Internet. The randomness comes from atmospheric noise, which for many purposes is better than the pseudo-random number algorithms.

### GPU EMULATOR Oct'19

- A video card made from scratch using IC's

### 2D RAYCASTER/RAYTRACING ENGINE Sept'19

- Built a minimal 2-D raytracer in js

### MOTION CAPTURE USING KINECT April'19

- The first few steps involved interfacing with the Kinect
- The output from kinect was then stored in a .bvh file (OpenNI)
- The .bvh was imported into Blender and applied on a model's armature thus the model imitated human movment
- In additon to it many objects were 3D scanned and their 3D models created (wavefront .obj format)

### 3D HUMAN - COMPUTER INTERFACE Dec'18

- Placing an object within the electric field of a capacitor affects the capacitance and the corresponding time constant.
- This gave the location of an object in a 3D space. While the Arduino micro-controller fetched values from the 3D space(capacitor), Processing was used to create a visual representation