

# Rishabh Unikrishanan

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Application building with feature-scaling into basics of 3D modelling, UI/UX , Business Logic for Pass-Booking, REST APIs, Web Testing. Used Python to automate hardware control of rotor and hack-RF SDR with satellite TLE data. Rust binary script for packet encoding decoding .I am curious about Z-Order curves, geometry , graphics , Reed Solomon Erasure Coding , matrix.org and more. I'd want to achieve personal as well as social goals.

## WORK EXPERIENCE

**Metadrob** (20/04/2023 - Heden)  
Full-Stack  
Backend Front-end and Threejs integration.  
🔗 <https://metadrob.com>

**In2Tech** (07/10/2022 - 08/02/2023)  
Independant Consultant

- Metal graphics framework with swift for freehand drawing research for FluidTouch to mimic Apple notes drawing app.
- CRM Application that scales to all chat platforms using Matrix.org.
- NDA Signed for setting up Icecast2 for Music Streaming Service Company.

**Dhruva Space** (07/01/2021 - 07/07/2022)  
Software Engineer 1

**Satellite Tracking Automation.**  
A python class that emits events to a spid rotor gs-232 and to a hack rf sdr based on a configuration file generated with meta-data and TLE data.

**Collision Analysis Simulations**  
<https://github.com/IBM/spacetech-ssa>  
Reverse engineered the above library for custom requirements and bulk data analysis.

**Ground Station Network**  
Created a REST API server using Google Cloud that provides authentication , satellite pass information , 3D data and graphs with basic CRUD operations . Front end was done in a React Redux template along with Cesium and Three.js for 3D visualizations . Web testing using mocha js. A simple ground station server was created that listened to pass booking events from users and started processes that triggered the tracking module and transferred the data to cloud . Primary satellites for testing include NOAA YARILO and NETSAT.

**Miscellaneous**  
Protocol Buffers Proof of Concept for marshalling satellite data before and after receiving/transmitting it via a SDR , including PPT . gRPC solutions were used as a possible way to control hardware structurally. Rust Language was used for telemetry data encoding-decoding tool.  
🔗 <https://www.dhruvaspace.com/>

**Dhruva Space** (07/06/2020 - 01/01/2021)  
Intern  
DTN simulations and ArcGIS playing . Three.js to display satellite paths from TLE data . Creation of a E-Commerce website with React Redux and Google Cloud .  
🔗 [dhruvaspace.com](https://dhruvaspace.com)

**Call health** (03/01/2018 - 06/01/2018)  
Intern  
Web scraping, azure vm costing analysis .

## EDUCATION

**JNTU**  
B.tech, Computer Science

## PROJECTS

**Chess Blog**  
A simple chess blog where i tried to create a logo and embed chess boards.  
React+Redux+Typescript with google cloud .  
Embedded Chess board and Puzzle Logic page.  
🔗 <https://chessverse-1e251.web.app/>

**ScatterNet**  
Scatters your data across a network and helps you retrieve it.  
Similar to Reed Solomon Erasure Coding where data is split across different address spaces and can be recreated by the individual parts.  
🔗 <https://github.com/XxSNiPxX/scatternet>

**Matrix homeserver**  
Matrix.org Synapse homeserver  
Setting up a matrix homeserver with whatsapp bridge.  
🔗 [element.in3tech.tech](https://element.in3tech.tech)

## SKILLS

FreeBSD Linux	Rust Go Python Javascript Swift
Metal OpenGL	Automation
TLA+	Formal Verification

## INTERESTS

**Software**  
TLA+, Z Order Curves, USD File Format, Web3 , Rust , Encoding-Decoding

## AWARDS

**Brains and Games**  
Brains@Play  
Won a muse 2 by conceptualizing a game using EEG data.  
🔗 <https://brainsatplay.com/competition/submissions#Desperate>

## PUBLICATIONS

**An analysis for coopetition among market participants for the creation and maintenance of a consortium governed satellite network infrastructure.**  
IAF  
An abstract and possible paper based on my understanding of the business problems.  
<https://iafastro.directory/iac/paper/id/74394/summary/>