

(+91) 9177636287  
Hyderabad, Telangana  
yuvraj@riseup.net

# Yuvraj Makkena

## Post Graduate Student / IIT Hyderabad

Website: [yuvrajm.gitlab.io](https://yuvrajm.gitlab.io)  
[github.com/yuvrajmakkena](https://github.com/yuvrajmakkena)  
<https://www.linkedin.com/yuvraj>

Hello, my name is Yuvraj and I am currently a Masters student in the Department of Artificial Intelligence at IIT Hyderabad and research assistant working in TiHAN (Technology Innovation Hub for Autonomous Navigation) under the guidance of Prof. Dr.Praveen Tammana and Prof. Dr.P.Rajalakshmi, where I focus on researching and building EdgeCloud solutions for autonomous vehicles, leveraging compute-heavy applications with advanced techniques such as deep learning to the edge, My passion lies in computer systems, networks, and sciences. I am also a free software and open hardware enthusiast with over four years of experience. I love working on Linux machines, exploring and building customized OS'es using GNU/Linux, and managing servers/systems with expertise in system administration and automation in Linux. In addition, I am interested in the cutting-edge technologies such as DPUs, SmartNICs, Tofino switches, Edge Computing, and software engineering.

### EDUCATION

**Masters in Artificial Intelligence**, *Indian Institute of Technology, Hyderabad* 2023 — 2025  
**Bachelors in Electronics and Communication**, *ACE Engineering College, Hyderabad* 2017 — 2021

### PUBLICATIONS

**Yuvraj Makkena**, R. Tella, N. Parekh, P. Saraf, Annu, H. Shukla, A. Matathammal, S. Danda, P. Chandrahas, A. Jadhav, P. Tammana, K. Kondepu, P. Rajalakshmi, "[Experience: Implementation of Edge-Cloud for Autonomous Navigation Applications](#)"  
**15th International Conference on COMMunication Systems & NETWORKS, 2023.**  
**Yuvraj Makkena**, Prashanth P S, Praveen Tammana, Praveen Chandrahas, Rajalakshmi Pachamuthu, "[Real-time Object Detection as a Service for UGVs using Edge Cloud](#)"  
**16th International Conference on COMMunication Systems & NETWORKS, 2024**

### POSTERS

**EdgeCloud for Autonomous Navigation Applications**  
To Provide compute, storage, and network resources for deploying an autonomous navigation application.

### ACHIEVEMENTS

**Sakura science research exchange student**, *Tsukada Lab, University of Tokyo, Tokyo, Japan* June 2023 — July 2025

### TECHNICAL EXPERIENCE

**DevOps and Systems Engineer** July 2022 — Present  
*EdgeCloud For Autonomous Navigation* *TiHAN IIT Hyderabad, Telangana*

- Setting up EdgeCloud Cluster to perform Operations for UAV/UGVs.
- Deploy Kubernetes pods for different services like Storage, CPU/GPU Processing and Pub-sub network protocols e.t.c
- Visualize Compute utilization of UAV/UGV using Grafana dashboard.
- Published a Paper for COMSNETS 2023

**Research Assistant** September 2021 — July 2022  
*Validating and Securing Network Protocols & Network Management Systems* *IIT Hyderabad, Telangana*

- Setting up Test Bed to perform experiments on programmable data planes.
- Building NOS for Barefoot Tofino Switch
- Testing Different p4 programs like l3Forward, Netcache in topology .

**Full Stack Developer** June 2021 — August 2021  
*IMPAAC* *JumpKing LLP, Bengaluru, Karnataka*

- A Crowd Sourcing Platform built on MERN Stack.
- Setting up the Development/Production Environment in Amazon EC2 Instance.
- Developing the API's for data and connecting them with React UI Frontend.

**DevOps and Fullstack Engineer** December 2020 — May 2021  
*FSMI-Swecha* *Hyderabad, Telangana*

- Trained on Docker, GitLab, Microservices, JAM Stack.
- Developed 7+ Wordpress/Drupal Websites.

**Web Developer Intern** November 2018 — March 2019  
*Virtual Labs, International Institute of Information and Technology - Hyderabad* *IIIT Hyderabad, Telangana*

- Responsible for UI Fixes in Virtual Labs Applications.

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### SKILLS

<b>Front-End Languages</b>	HTML, CSS, JavaScript, Markdown, $\LaTeX$ <b>Data Serialization</b> JSON, YAML
<b>Back-End Languages</b>	C, Python, JS, BASH.
<b>Libraries, Frameworks</b>	Bootstrap, React
<b>DevOps</b>	<b>Cloud Services</b> Hetzner, DigitalOcean, Dreamhost <b>Monitoring</b> Grafana, Prometheus CI GitLab CI <b>Containerisation</b> Docker <b>Container Orchestration</b> Kubernetes
<b>Debugging</b>	Firefox Developer Tools
<b>Design Tools</b>	Inkscape
<b>CMS</b>	Drupal, Wordpress
<b>OS</b>	Debian, Ubuntu
<b>Web Servers</b>	Apache, Nginx
<b>API</b>	RESTful, JSON
<b>VCS</b>	Git
<b>Repo Hosting Services</b>	GitLab, GitHub
<b>IDEs</b>	VS Code, VIM, Nano
<b>Communication</b>	English, Telugu, Hindi

### PROJECTS

<b>Validating and Securing Network Protocols &amp; Network Management Systems</b>	IIT Hyderabad, Telangana
<b>EdgeCloud for Autonomous Vehicles</b>	IIT Hyderabad, Telangana
<b>IMPAAC - Crowd Sourcing Platform</b>	JumpKing LLP
<b>GPU Cluster - Slurm Based GPU Clusters with 5 Nodes</b>	ACE Engineering College

#### Personal projects

##### ACEinx

A Custom Operating System based on Linux kernel, with selected packages and customised grub-splashes

##### Covid19 Nearest Centers

A web application to locate nearest Covid test centers

##### Rush

E-Commerce Site built on MERN Stack where Users can Buy different products

##### Find Product Origin

An application to find from which country the product is originated

##### Home Automation

Smart Power Handling through Devices using NodeMCU

##### Automatic Attendance Management System

Face-Recognition Based Attendance Management Using Python Frameworks

### COMMUNITY ACTIVITIES

#### Swecha - Executive Committee Member

2021 — Present

Member of Creative Commons Global Network Indian Chapter.

2019 — Present

(H)aktivist at FSMI Contributing to FreeSoftware Projects and Movement

2017 — Present

- Ignited GNU Health to build an OS image for olimex

- Attended Open Source India Conference 2019 as TA

- Organiser of Hacktober Fest Bangalore 2019

##### Speaker at MiniDebConf India 2021

- Liberating Single board computers using Debian

2021

- Debian Distribution Build

2021