

HARSHAD ZADE

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📍 Nagpur, India

PROJECTS

RE-CONFIGURABLE SNAKE

📅 October'19 - Present

📍 IvLabs [\[Link\]](#)

- The aim is to design snake robots capable of re-configuring into quadraped by attaching together and performing a static gate of a quadraped.
- Each snake module can individually perform all the gates that any normal snake performs.

MULTI AGENT WIRELESS SENSOR NETWORK[\[Link\]](#)

📅 December'18 - April'19

📍 IvLabs

- Implemented a mesh network based on IEEE 802.15.4 to establish consensus in a swarm of robots.
- Established handshake using Atmega328p as well as TIVA TM4C123GXL launchpad.

LASER SECURITY SYSTEM[\[Link\]](#)

📅 June-July'18

📍 IvLabs

- Implemented a laser security system with push notifications capability and real-time monitoring.
- Designed the hardware using Arduino Uno and used ESP8266 for notifications and Raspberry Pi0 for IP camera. Implemented the firm ware using Arduino IDE and Raspbian.

HARMONIC MOTION ANALYZER

📅 March-April'18

📍 IvLabs

- MATLAB based program to analyze motion equation and parameters.
- Designed an algorithm for tracing path of a damped oscillator.

HOBBY PROJECTS

- Line Follower Bot
- Designed a manually controlled robot
- Fabricated a clap switch
- Fabricated a cell phone charger

EDUCATION

🎓 Bachelor of Technology (Metallurgical & Materials)

Visvesvaraya National Institute of Technology[\[Link\]](#)

📅 2017 - 2021*

📍 Nagpur

- Cum.GPA 7.2/10

ACHIEVEMENTS

- 2nd runner up in image processing task at Techno-Season'18, IV Labs, VNIT, Nagpur.
- Awarded the "Best Athlete '17-18" in VNIT.
- Represented VNIT, Nagpur at "All INDIA INTER-NIT SPORTS MEET'19".

TECHNICAL SKILLS

⚙️ Tools and Libraries

ARM Processors

AVR Atmega family

Arduino

KiCad

SYS/BIOS (TI-RTOS)

ROS

CAD Modeling

Code Composer Studio

Communication Protocols

Zigbee

Bluetooth

Wi-Fi

</> Programming

C

Embedded C

≡ Misc. Tools

LaTeX

Git

PUBLICATIONS

👤 Conference Papers

- **Harshad Zade**, Mayuresh Bhojar, Mayuresh Sarode, Neha Marne, Unmesh Patil, Vedant Ranade, and Ajinkya Kamat. OLSAC: OPEN-SOURCE LIBRARY for SWARM ALGORITHMS and COMMUNICATION [\[Link\]](#) ICAME2020 [Accepted]

COURSEWORK

- TI-RTOS Workshop Series
- An Introduction to Programming the Internet of Things (IOT) | Coursera*
- Control of mobile robots | Coursera*
- Multivariate calculus
- Numerical methods and computation

ACTIVITIES

- **Technical secretary** at IvLabs.
- **Project mentor** of some summer interns at IvLabs.[Link](#)
- **Volunteer** at IEEE VNIT CHAPTER to conduct workshops on topics like micro-controllers, circuit and PCB designing, manual robotics, etc.
- **Sports Secretary** at the Department of Metallurgical and Materials Engineering, VNIT, Nagpur.