

# Varad Belwalkar

Github: [github.com/VaradBelwalkar](https://github.com/VaradBelwalkar)

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## EDUCATION

- **D Y Patil college of engineering and technology** Kolhapur, India  
*Bachelor of Technology - Computer Science and Engineering; GPA: 8.46* 2020-ongoing
- **S.M. Lohiya Highschool** | **New College, Kolhapur** Kolhapur, India  
*Grade: 96.2%* | *HSC, 12th Grade: 83.3%* 2018 | 2020

## SKILLS SUMMARY

- **Languages:** C/C++, Go, Python, JavaScript, PHP, Bash, Powershell, SQL,  $\text{\LaTeX}$
- **Software Tools:** Git, GitHub, Docker, Jenkins, Wireshark, Kubernetes, Ansible, Localstack, Terraform(Localstack)
- **Databases:** MySQL, MongoDB, SQLite, Redis
- **Web Dev:** HTML5, CSS3, JavaScript, Node.js, ReactJS, ExpressJS, Django
- **Platforms:** Linux, FreeBSD, and Windows
- **Routing/Switching:** GNS3 and EVE-NG
- **Firewalls:** Palo-Alto, Fortigate

## EXPERIENCE

- Deployed and maintaining the college server to ensure seamless access and availability of resources for students and faculties
- Published PaaS Framework as Docker image which has over **2.8K+** pulls on Docker Hub

## PROJECTS

- **Compute Services** | *Distributed Systems*
  - Engineered backend in Go to provide storage and container services by utilizing docker-SDK for Go
  - Used **MongoDB** for storage, **Redis** for faster workflow, Computing platform, and Cookie-based sessions
  - Implemented Client in Go with conventional security practices and hybrid encryption
  - Implemented CI/CD pipeline using **Jenkins** to automate the build, test, and deployment process
- **Load Balancing standalone docker engines** | *Hobby Research Project* 2023-ongoing
  - Developing a custom **load-balancer** in **Go** to facilitate the load balancing on multiple nodes
  - Service is in development and implementation following the Raft consensus algorithm
- **Ethereum-Facilitated Secure Tunnelling** | *Blockchain Technology*
  - Leveraging Smart Contracts on the PoA test network sepolia for End-to-End highly concurrent Webhook interface between client and server behind NAT, with RESTful client implemented in Django
  - Only Contract owners will be able to communicate through the tunnel
- **Docker-DHCP on host bridge** | *Networking* 2023-ongoing
  - Building a network driver for networking on a host bridge with DHCP-allocated IP addresses in Go
  - **Tutorial - Introduction to Reinforcement Learning** Created tutorial for Q-learning RL algorithm and concepts.
  - **Impact** Course has been taken by 250+ students so far with 4.65 average rating.
- **Scalable Platform as a Service** | *System Design*
  - Built an **auto-scaling** container-based PaaS framework by implementing NGINX reverse-proxy to load-balance services controlled by replicated **Django-server** through Docker-Swarm
  - Provided a deployment platform, auto-configuring clients for Linux and Windows systems and TLS verification and encryption from the client side
- **Web-based Labs** | *Web application* 2022-ongoing
  - Developing a User-friendly Web app with **ReactJS** providing services offered by the Compute service framework
  - Implementing a built-in terminal and various conventional practices and security features
- **D-RAM Addressing Attack** | *Computer architecture*
  - Performed a timing attack on intel core i5 to reverse engineer the confidential address mappings
  - Established a **Covert-Channel** to perform illicit inter-process communication between the host and isolated VM

## POSITION AND RESPONSIBILITY

- Carried out Linux-Wargames and took Linux-related sessions DYP CET