

# Varad Belwalkar

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🐙 [hub.docker.com/u/varadbelwalkar](https://hub.docker.com/u/varadbelwalkar) 🐙 [github.com/VaradBelwalkar](https://github.com/VaradBelwalkar)

## Education

**D Y Patil college of engineering and technology, Kolhapur** 2020-ongoing  
*Bachelor of Technology, Computer Science and Engineering* | CGPA: 8.46  
**S.M. Lohiya Highschool** | **New College, Kolhapur** 2018 | 2020  
SSC, 10th | Grade: 96.2% | HSC, 12th Grade: 83.3%

## 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

## Key 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

### 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

## Technical Skills

**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 Development:** HTML5, CSS3, JavaScript, Node.js, ReactJS, ExpressJS, Django

**Platforms:** Linux, FreeBSD, MacOS, and Windows

**Routing and Switching:** GNS3 and EVE-NG

**Firewalls:** Palo-Alto, Fortigate

## Position and Responsibility

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