Varad Belwalkar

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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, SQL, LaTeX
- **Software Tools** — Git, GitHub, Docker, Jenkins, Wireshark, Kubernetes, Ansible, Localstack, Terraform(Localstack)
- **Databases** — MySQL, MongoDB, 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 HubOpen-Source

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 — DYPCET