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, Powershell, SQL, 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, GraphQL
- **Platforms:** Linux, MacOS, 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

- **Docker-DHCP on host bridge** | *Networking*
  - Built a network driver for networking on a host bridge with DHCP-allocated IP addresses in Go

- **Ethereum-Facilitated Secure Tunnelling** | *Blockchain Technology*
  - Leveraged 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

- **Decentralized Document Verification** | *Blockchain Technology*
  - Developed a blockchain-based certificate verification system to enhance the security and authenticity of academic credentials issued by educational institutions.
  - Implemented a Merkle tree based for enhanced security and efficiency in verifying academic credentials

- **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*
  - Developed a User-friendly Web app with **ReactJS** providing services offered by the Compute service framework
  - Implemented 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

- Written in-depth tutorials & How-Tos on various topics in various domains available on Github