# Shivansh Vij

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## SKILLS

- **Languages:** C, C++, Go, Javascript, Python, Ruby, C#, Java, Rust, Bash
- **Frameworks:** OpenCV, Tensorflow, Selenium, Vue.js, Nuxt.js, React.js, Next.js, Jest.js
- **Technologies:** Kubernetes, OpenShift, Docker, VMWare, PostgreSQL, MongoDB, Firebase

## EXPERIENCE

### Banyan Security | Software Engineering Intern

May 2020 - Present

- Utilized **Go** to integrate the ACME Protocol within a **zero-trust reverse proxy** for which allowed for automatic provisioning of SSL certificates with Let's Encrypt using HTTP-01 or TLS-ALPN challenges

### IBM | Software Engineering Intern

Sept. 2019 - Present

- Designed and shipped a complete **browser-based development environment** which includes access to an IDE, Kubernetes and OpenShift clusters, and a container registry, and was **used during Kubecon and IBM Think to educate 2000+ users across the world**
- Employed TypeScript, Helm, and Redis to create **scalable containerized microservices** for provisioning and **managing user environments in multi-tenant Kubernetes clusters for more than 1.6 million users**
- Implemented **dynamic overprovisioning** by employing a custom version of the cluster autoscaler and customized horizontal pod scaling patterns which **reduced loading times for user environments by 85% and monthly operating costs by 72%**

### IBM | Site Reliability Engineering Intern

April 2019 - Sept. 2019

- Orchestrated the redesign and migration of existing Rancher-based tooling to Kubernetes to **improve user launch times by 46%, service 300K new users, and reduce operating costs by 15%** Coordinated the entire development lifecycle of an **Open Source Ruby Gem** for the management
- of OpenShift and Kubernetes clusters, which is currently being used to **service 3.5 million learners at companies like Shell, Disney, Redhat, Scotiabank, and RBC**
- Transitioned team to practice **Infrastructure as Code** by using **Helm, Terraform, and Ansible** for automatic provisioning, syncing, and testing of our team's production and staging environments

### IBM | DevOps Intern

Jan. 2019 - April 2019

- Utilized chaos engineering concepts to harden Kubernetes and OpenShift clusters against network latency, and resource saturation which **increased infrastructure stability by 18%**
- Researched and developed scalable, fault-tolerant computing and networking infrastructures for production-ready OpenShift clusters on Bare Metal and VMWare vSphere which was **used by multiple teams at IBM, Cisco Networks, and the US Armed Forces**

## PROJECTS

### Lynk | https://lynk.sh

Nov. 2019 - Present

- Engineered a novel reverse tunneling protocol to securely expose local TCP and HTTP services to the web with support for Websockets and HTTP/2 without any changes to the existing network or firewall
- Extended raw TCP sockets and implemented stream compression to **achieve 6x faster website load times than other similar services when measured using a RUM Speed Index and Google Lighthouse** Utilized load-balancing concepts from Kubernetes to scale and **service 1200+ concurrent users/day** **Technologies Used: Firebase, Go, MongoDB, Node.js, Vue.js, Nuxt.js**

### Parasite | https://parasite.sh

Feb. 2020 - Present

- Design an **open source proxy** to record and replay intercepted HTTP traffic via REST API or frontend
- Compiled project as a standalone or an NPM module **embeddable in any project with 2 lines of code** ***Technologies Used: Node.js, Express.js, Vue.js, Nuxt.js, Jest.js***

## EDUCATION

### UNIVERSITY OF WATERLOO | B.A.Sc Computer Engineering

Sept. 2017 - April 2022

- **Coursework:** Compilers, Software Design and Architecture, Data Structures and Algorithms Computer Architecture and Processor Design, Systems Programming and Concurrency