

# Dhruv Bhanushali

Software developer

Senior undergraduate, IIT Roorkee

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## ⚡ AREAS OF INTEREST

- Server-side infrastructure engineering
- Cross-platform and full-stack web development
- Software architecture and design
- Composing documentation and non-technical articles

## 🎓 EDUCATION

**Indian Institute of Technology, Roorkee**

B. Tech.

📅 2015 – 2019

Bachelor's degree

Engineering Physics, Department of Physics

## 🧰 INTERNSHIPS

**Infrastructure engineer**

HackerEarth

📅 May – July, 2018

Bengaluru, India

- Wrote the HackerEarth *infrastructure-as-code* (IaC) after in-depth analysis of their production architecture.
- Developed the Python tools to replicate the infrastructure by deploying the IaC in an alternate AWS AZ.
- Developed an EC2 instance launch and termination engine.
- *Isolated staging and production* in separate VPCs.
- Enabled deployment of new staging VPCs in one click.

**Software developer**

HackerEarth

📅 May – July, 2017

Bengaluru, India

- Developed a *code-evaluation engine* to build, execute and evaluate multi-file Java projects using Ant.
- Developed the scaffolding RabbitMQ architecture.
- Added database-agnostic JDBC connectivity.
- Installed *security policies* such as memory and I/O limits.

## 🌟 POSITIONS OF RESPONSIBILITY

**Chief technology coordinator**

IMG

📅 2016 – 2019

IIT Roorkee

Information Management Group (IMG) is the student body that developed, manages and upgrades both the content management system for the IIT Roorkee website and Channel i, the official intranet portal.

- Pivoted the role of IMG in the campus from an app development group to a platform development group.
- Created Omniport, the rewritten open-source portal of IIT Roorkee replacing Channel i and updating its suite of apps.
- Initiated, lead and oversaw a total overhaul of IMG's core products to the latest software stack and technology.
- Mentored and tutored a team of over 50 developers and designers, at both the macro and micro levels.
- Shortened development cycles at IMG by up to 50% with a modular, containerised and isolated approach.
- Revolutionised the popular <img> of IMG leading to heightened public awareness and brand reputation.
- Increased the IMG's outreach via social media and cultivated a brand-conscious mindset about our products.
- Developed a culture of open-source at IMG and set the institute record of 30 repos open-sourced in one day.
- Lead IMG, therefore IIT Roorkee, to the highest selections ever worldwide in GSoC 2018, 10 and 35 respectively.

The above was accomplished in my tenure of one year.

## 💡 SKILLS

### Computer languages and frameworks

Python (+Django, Django REST Framework), reStructuredText, Java (+JavaFX), JavaScript/Node.js (+Express, React, Angular, Vue), PHP, FORTRAN, Kotlin (+Android), Bash, C++, Golang

### Computer software and skills

Docker (+Compose), Ansible, Puppet, Git, Sphinx, Travis, Jest, Ant, Sentry, Celery, Pygments, Vim, UFW, iptables, Jupyter, NumPy, Sympy, RabbitMQ, JetBrains IDEs, SQL & NoSQL databases,  $\text{\LaTeX}$ , Adobe Creative Suite, MathWorks MATLAB

## 📁 PROJECTS

**Omniport**

Campus portal platform

📅 March 2018 – Present

📦 Django; React

- Omniport is a *platform for institutes* to deploy their web portal (like Channel i for IIT Roorkee), by and for the students.
- Omniport is completely generic, but offers various levels of customisability, to suit the needs of any institute worldwide.
- Omniport can be extended with plug-and-play apps and can function as an OAuth2 provider for third-party integration.
- Supports the latest features such *HTTP/2*, real-time *WebSockets*, progressive web apps and role-based access.
- Developed the entire Django backend *solo*, including all core apps and services, and integrated with the React frontend.
- Wrote the *documentation* of the *philosophy, architecture and backend* of the portal, and reviewed that of the *frontend*.
- Ensured top code quality and continuous updates.

**Omniport infrastructure**

Container deployment

📅 March 2018 – Present

📦 Docker; Bash

- Designed the *complete architecture* of Omniport, and its scaffolding services, from the ground up.
- Containerised the architecture with Docker and Docker Compose to automate *scaling, redundancy and reproduction*.
- Containerised the Django backend, the React frontend, the NGINX reverse-proxy, databases, message broker and cache.
- Wrote Bash scripts to automate image creation and container deployment *in development and production*.
- Configured IMG's servers and deployed Omniport customised as Channel i, thus ensuring fitness for purpose.

**Placement & Internship portal**

Omniport application

📅 August – November, 2018

📦 Django; React

- Placement & Internship portal digitises the entire placement process, including creating the official IIT Roorkee *résumé*, applying to companies and knowing the results.
- Added features to the app like *test and interview calendar* and the ability to submit a cover letter with your application.
- As *Project leader*, oversaw the development of the *revamped version* of the portal and its Android app for Omniport.

**Rethink! online**

TRM software

📅 February – April, 2017

📦 Django

- Developed a *time and resource management* and logging application for Rethink!, the tinkering lab of IIT Roorkee.
- The app manages the allocation of machine time as well as consumables with expenses to students availing the services.
- Also *deployed the app* on their in-house servers, integrating with Channel i OAuth so as to be seamless for users.

**LecTut**

Mobile study app

📅 February – April, 2017

📦 Kotlin (Android)

- Developed a *companion app* to enable mobile and offline access to LecTut, the official study portal of IIT Roorkee.