Pravendra Singh

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Education

2012–2016 **Indian Institute of Technology Roorkee**, *Roorkee, India*.
B.Tech. in Computer Science and Engineering (Graduation - 2016)

Experience

Dec 2015 - Present **Technical Editor Intern**, PLOTLY.
Working for plotly's technical computing blog 'modern data' by contributing API example codes, plot visualizations and tutorials to enhance the use of plotly tools.
D3, ggplot2, R, Python

May 2015 – Jul 2015 **Software Developer Intern**, MYNTRA, Bangalore.
Collaborated with the Lead Mobile Engineering team to develop a 'Collaborative shopping focused real-time chat service'. Implemented the android application for the service. Developed a 'Distributed WebSocket Server' with JWT authentication layer to properly handle multiple connections.
Java, Node.js, Android Development, Android Studio

Oct 2013 – Oct 2014 **Student Developer**, SDSLABS, IIT Roorkee.
Worked with the student group to innovate and promote technical activities in the campus. Led the development for automation project of an intranet 'live streaming' service, along with many applications.
Ruby, CoffeeScript, PHP, Sinatra, ElasticSearch, MySQL

Apr 2014 - Present **Developer Program Member**, GITHUB.
Active volunteer for Open-Source in the campus and contributor to many FOSS projects.

Research & Publications

Dec 2015 **Breaking into the Indian E-commerce**, Tech in Asia, Python Weekly.
A report that analyze the e-commerce coverage in India. It highlights the *geographical distribution of e-commerce users in the country*, *customer behavior*, *shared logistics used by online shops* etc. The report uses online fashion store *Myntra* as the subject.

Jan 2015 **Open Source Presence Infographic of Indian Startups**, Wingify Engineering.
A report that compares leading Indian organizations according to their contributions on the Open Source scale. Uses *Bayesian Classification* for *Topic Modeling* to calculate sections like *technology stack*, *the field of work* of organizations.

Mar 2015 **Implementing an intelligent version of the classical sliding-puzzle game for Unix terminals using Golang's concurrency primitives**, arXiv, Cornell University Library.
Worked on an advanced version of the classic sliding-puzzle game which implements a concurrent version of the *A* Informed Search Algorithm* to power solver-bot that runs in the background.
A real-time notification delivery architecture was developed using language's built-in concurrency support, which performs similarly to 'event-based context-aware invocations' like we see on the web platform.

Achievements & Extra Curriculars

- Received *Student Scholarship* to attend the 2^{nd} *GopherCon India* conference, 2016
- Received a *Software Engineer* summer internship offer by *Datadog Inc.* New York.
- Ranked 1^{st} position in *Backdoor, Capture The Flag* competition, 2014 at IIT Roorkee.
- Interested in technical reading and writing, maintains an Engineering blog. [link]
- Ranked 3^{rd} in *Sristhi - Institute's Annual Technical Exhibition*, 2014 for Web-Development

Projects

Engine, *Distributed identifier generation service*.
Distributed identifier generation service that generates 'non-sequential' alphanumeric identifiers of fixed length, covering a closed set. Uses properties of 'Anagrams' and a little 'Group Theory'.

Python, RethinkDB, Multiprocessing

Puzzl, *An intelligent version of the sliding-puzzle game for your terminal built in golang*.
Puzzl uses a concurrent version of the A* Informed Search Algorithm to power solver-bot that runs in the background. It implements a real-time notification delivery architecture using *goroutines* and *channels*, to display game's interactive status on the fly.

Golang, Artificial Intelligence, Concurrent Programming

Doga, *HTTP log monitoring console for Humans*.
'Log Monitoring' console that uses 'Raw Sockets' to inspect for any HTTP protocol traffic traveling through the system. On top of collected requests data, it shows an informative dashboard of the system. Sends an alert when communication with an endpoint is overtaking a configurable threshold value.

Python, Socket Programming, Threads

geopattern, *Create beautiful generative image patterns from a string*.
A 'golang' library that can create beautiful generative image patterns from a string input. GitHub uses similar implementation to produce background images for their 'Explore' section. It uses 'Cryptanalysis' concepts to visualize the SHA-1 hash of a string into repetitive patterns.

Golang, Cryptanalysis

Teamwork, *Organization's Contribution Dashboard made for GitHub Data Challenge 3.*.
Shows advanced analytics for GitHub's organization accounts with features like 'aggregated contribution calendar', 'per user contribution to the organization' and 'member and repository based leaderboards' etc.

Python, BigQuery, RethinkDB, Visualization

Live-v3, *Automation project of institute's intranet live streaming service*.
'Live' is an intranet streaming service for the institute run by SDSLabs. 'Live-v3' project dealt with automating the channel selection according to vote (user) demand.
Implemented a (child)crawler to collect TV channel schedules for a day, an Electronic-Voting API to accept votes on a combination of channel and program (being streamed) and front-end for the application.

PHP, JavaScript, MySQL

Jump in to ride all the Bangalore taxis, at once.
Do you know how many cabs are active in your city right now?

I tried to investigate this for the city of Bangalore in my report, where I devised a mechanism to securely(without getting blocked) collect the information from implicit API (using Charles Web Debugging Proxy) of the taxi service.

Python, JavaScript, Mapbox, Visualization

Computer Skills

- Python, Golang, Javascript, Ruby, R, Java, PHP, C++
- D3, matplotlib, scikit-learn, RStudio, ggplot, Android Studio, Git, Vim
- RethinkDB, ElasticSearch, Redis, MySQL, Node.js, Linux