Rahul **Garg**

✉ rg@vihu.dev | ⚲ Denver, CO | ⚭ vihu.github.io

Experience

Nova Labs Inc. — *Remote*
SOFTWARE ENGINEER — *2022-04-01 – Present*
- Migrating Helium Blockchain ecosystem to Rust Oracles
- Maintaining Helium Blockchain Network
- Working with the Solana ecosystem
- Building Rust based data pipelines for anti-gaming measures
- Doing data visualization for Helium hotspots

Helium Inc. — *San Francisco, CA*
SOFTWARE ENGINEER — *2017-12-12 – 2022-04-01*
- One of the founding developers of Helium Blockchain Network
- Co-authored HoneybadgerBFT consensus protocol
- Co-authored Distributed Key Generation for the Internet
- Co-implemented novel Proof of Coverage mechanism for reward incentive for Helium miners
- Solved complex mathematical problems related to probability, cryptography and distributed systems

Nimble Storage - Hewlett Packard Enterprise — *San Jose, CA*
SENIOR SOFTWARE ENGINEER — *2016-10-24 – 2017-12-06*
- Owner of Test Execution framework written entirely in Elixir with full OTP behavior
- Wrote tool service monitor, mimics Apple System Status service with real time updates in Elixir
- Migrated legacy Perl automation code to new Python bindings

Cisco Systems Inc. — *San Jose, CA*
SOFTWARE ENGINEER III — *2016-07-01 – 2016-10-24*
- Automation Lead for Cisco Unified Computing System Virtual Interface Card team
- Wrote Python based test framework to interact with Cisco Network Interface cards
- Mentored junior engineers

Cisco Systems Inc. — *San Jose, CA*
SOFTWARE ENGINEER II — *2014-02-03 – 2016-07-01*
- Automated SMB traffic generator for Windows platform for Cisco VIC adapter performance testing
- Developed easy to use Python APIs for Cisco VIC adapters multiple platform testing
- Wrote numerous standalone scripts using Powershell for automated testing of Blade/Rack server adapters for Windows platform
- Planned and exectured test plans for feature releases for Cisco's Unified Computing System with focus on Virtual Interface Cards

Cisco Systems Inc. — *San Jose, CA*
SOFTWARE ENGINEERING INTERN — *2013-05-01 – 2013-08-01*
- Scripted for SCVMM Hyper-V VM-FEX architecture
- Understood Hyper-V, Cisco UCS and virtualization stack

Skills

Languages: Rust, Python, Erlang, Elixir
Web: Axum, Flask, Phoenix
Infrastructure: Ansible, Heroku, AWS
Databases: Postgres, SQLite
Virtualization: Docker, Hypervisor

Projects

gogo — *rust*
TERMINAL BOOKMARK MANAGER — *crates.io/crates/gogo*

erlang-hbbft — *erlang*
HONEYBADGER BFT CONSENSUS ALGORITHM — *github.com/helium/erlang-hbbft*

erlang-dkg
Distributed Key Generation algorithm

erlang
github.com/helium/erlang-dkg

blockchain-core
Helium core blockchain library

erlang
github.com/helium/blockchain-core

miner
Helium Miner

erlang
github.com/helium/miner

kdtree
Simple kdtree written in Erlang

erlang
hex.pm/packages/kdtree

vincenty
Erlang library to calculate distance between 2 points with Vincenty's formulae

erlang
hex.pm/packages/vincenty

erlang-oc
Online-code rateless erasure codes

erlang, rust
github.com/vihu/erlang-oc

erlang-fountain
Fountain code rateless erasure codes

erlang, rust
github.com/vihu/erlang-fountain

erldpc
LDPC bindings

erlang, rust
github.com/helium/erldpc

erlang-tc
Erlang bindings for threshold cryptography over BLS12-381 keys

erlang, rust
hex.pm/packages/erlang_tc

erlang-skiplist
Erlang bindings to Rust skiplist data structure

erlang, rust
hex.pm/packages/erlang_skiplist

erl-blake3
Erlang bindings to Rust BLAKE3 cryptographic hash function

erlang, rust
github.com/vihu/erl-blake3

code-rs
Implementation of multiple different coding schemes

rust
github.com/vihu/code-rs

erlang-vc
Erlang port of vectorclock-rs

erlang, rust
github.com/vihu/erlang-vc

iptvrs
Playlist parser and search support for m3u4u playlist locally!

Rust
https://crates.io/crates/iptvrs

Education

Rensselaer Polytechnic Institute
Master of Science in Information Technology
GPA: 3.9

Troy, NY
2012-08-01 – 2013-12-01

Indian Institute of Technology (ISM)
Bachelor of Technology in Electronics and Communication Engineering
GPA: 7.14

Dhanbad, India
2007-05-01 – 2011-06-01