

# Rahul Garg

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## Experience

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### 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 executed 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

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**Languages:** Rust, Python, Erlang, Elixir

**Web:** Axum, Flask, Phoenix

**Infrastructure:** Ansible, Heroku, AWS

**Databases:** Postgres, SQLite

**Virtualization:** Docker, Hypervisor

## Education

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### Rensselaer Polytechnic Institute

Troy, NY

MASTER OF SCIENCE IN INFORMATION TECHNOLOGY

2012-08-01 – 2013-12-01

GPA: 3.9

### Indian Institute of Technology (ISM)

Dhanbad, India

BACHELOR OF TECHNOLOGY IN ELECTRONICS AND COMMUNICATION ENGINEERING

2007-05-01 – 2011-06-01

GPA: 7.14

# Projects

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## **gogo**

TERMINAL BOOKMARK MANAGER

*rust*

*crates.io/crates/gogo*

## **erlang-hbbft**

HONEYBADGER BFT CONSENSUS ALGORITHM

*erlang*

*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*