



## RAVI NARAYAN MAHAWAR

### Software Engineer/ ML Researcher

+15488816499 • mahawarravi4@gmail.com • <https://www.linkedin.com/in/ravi-narayan-mahawar-3674a3138/>

Location – Toronto, ON

## Summary

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Accomplished Software Engineer and ML Researcher with 5+ years of experience architecting scalable systems using Python, Golang, and Ruby on Rails. Specialized in machine learning, reinforcement learning, and microservices, with proven expertise in gRPC, GraphQL, and AWS MSK. Drove successful migration to service-oriented architecture and played a pivotal role in scaling Multiplier from pre-seed to Series B (\$400M valuation). Demonstrates advanced proficiency in Docker, CI/CD, Kafka, RabbitMQ, and RESTful APIs. Worked with Multiplier, MakeMyTrip, Amazon. References available on request.

## Experience

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### Wilfrid Laurier University

Waterloo, ON

Quantum Computing & ML Researcher(Supervisors: Dr. Sohini Ghose & Dr Ilias Kotsireas)

09/2022 - Present

- Developed several optimized solutions for D-optimal, Legendre Pair, and Hadamard Matrix problems using serial and MPI, testing performance prior to Quantum resource implementation.
- Designed RL algorithms to solve combinatorial problems for  $N=[XX]$  and scaled solutions to  $N=[XXX]$  using learned policies.
- Built a solution based on RL algorithms to solve the same problems for smaller  $N$  and using the learned policies to solve larger  $N$  values
- Engineered three quantum algorithms with D-Wave for mathematical problems, focusing on performance optimization and resource efficiency.
- **Explainable Reinforcement Learning Research Project**
- Built an explainable MARL framework on top of VIPER, evaluating performance across 3 games and 40+ parameter combinations on AWS servers.

### PloughShares, Civic Tech KW

Kitchener, ON

ML Engineer (Volunteer)

06/2025

- Developing an open-source intelligence (OSINT) monitoring system for Project Ploughshares to aid in identifying potential arms embargo violations and enhance global disarmament efforts
- Implementing a global web scraper using Crawl4AI that performs shallow digs for relevant data, escalates to deeper exploration on human approval, and uses LLMs to summarize findings and surface geolocated resources worldwide, streamlining research workflows
- Impact: Make new resources discoverable for the team, utilizing Human Intelligence to select reliable information and eliminate all manual, repetitive work, such as data entry automation

### Multiplier

Remote

Senior Software Engineer

05/2021 - 08/2022

- Improved customer onboarding efficiency by 60% by developing a dynamic salary breakdown service for 40+ countries and currencies at Multiplier.
- Increased platform communication capacity by handling 100+ email notifications daily by designing a scalable cross-service email solution at Multiplier.
- Reduced processing latency by 40% by integrating Amazon MSK and establishing 10+ asynchronous channels between micro-services at Multiplier.
- Accelerated contract workflows by 75% by automating document generation across five micro-services through PandaDoc integration.
- Mentored junior engineers and led the extraction of micro-services from the existing monolith and building it up from scratch

## Experience

### MakeMyTrip

#### Senior Software Engineer

Bangalore, India

06/2019 - 05/2021

- Day Wise Promotion - Lead the project to calculate and apply the combination of offers day-wise, which would result in the cheapest booking for the end users across platforms
- Implemented dynamic programming algorithms for promotion calculations, enhancing offer application logic on multiple booking platforms.
- Drove a 20% increase in bookings, adding 500 room nights daily by leading the Day Wise Promotion project to optimize offers across several platforms.
- Spearheaded the adoption of closed user group discounts, achieving CUG application in 50% of all bookings by developing models, API integration, and business logic.
- Migrated three TIER-1 services from ECS to EKS, collaborating with the DevOps team and managing transition for the users.

### PIGGY

#### Software Engineer

Bangalore, India

08/2018 - 06/2019

- Increased API performance by 40% for 10+ user-facing endpoints, resulting in enhanced user experience at PIGGY.
- Developed and deployed a Celery system with auto-scaling capacity, handling 150+ parallel tasks per day at PIGGY.
- Achieved 99.99% uptime for payment services by integrating with Razorpay and automating all refund processes at PIGGY.
- Mentored 3 SDE interns and led the development of 3 key features including Simply Save, Digital KYC, and One-Link Invest at PIGGY.

### Amazon

#### SDE Intern

Bangalore, India

01/2018 - 06/2018

- Independently developed a caching mechanism that periodically refreshes the latest version of all resources, performs schema validation, and maintains an in-memory cache, eliminating the need to hit the DB for each request
- Independently developed an S3-based data source that periodically refreshes the data from the service
- Re-architected our service client library to fetch from the S3 source in case of service unavailability

## Education

### Wilfrid Laurier University

#### Master of Applied Computing

Waterloo, Canada

09/2022 - 08/2025

### College of Engineering and Technology

#### Bachelor of Technology in Computer Science

Bhubaneswar, India

08/2014 - 05/2018

## Skills

AWS · AWS Lambda · AWS S3 · AWS Services · C/C++ · Caching · Celery · CloudWatch · Docker · DynamoDB · EC2 · Git · GitHub · Golang · GraphQL · Java · JavaScript · Kafka · Keras · Kubernetes · KYC · MongoDB · MPI · OpenMP · OSINT · PostgreSQL · Python · PyTorch · Quantum · RabbitMQ · Rails · RDS · React · Redis · Redux · REST · Ruby · S3 · Scikit-Learn · SNS · Node/Express

## Find me online

#### 7 LinkedIn

<https://www.linkedin.com/in/ravi-narayan-mahawar-3674a3138/>

#### 7 Github

<https://github.com/raviwaar?tab=repositories>

#### 7 Fractal Julia MPI-OPENMP

<https://github.com/raviwaar/APP-FractalProject>

#### 7 PloughShares Non-Profit

<https://ploughshares.ca/about/>