

# ATHUL SREEMATHY RAJ

SOFTWARE ENGINEER | RESEARCHER

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## EXPERIENCE

### Research Assistant

HESL, Polytechnique Montréal (Expected graduation: Feb 2023)

- Introduced a novel federated learning technique(FedSHIBU) for training on highly heterogenous data distributions (NeurIPS FL Workshop 2022 - [Paper](#))
- Courses completed - Machine Learning, Neural Scaling Laws, Software design, Data visualization, Project Management

**Technologies and Tools:** Python, PyTorch, NumPy, Google Colab, WandB, Slurm, LaTeX

### Full-Stack Developer

RUSE AI, Montréal, QC (Jan 2022 - Present)

- Enabled themes, audio support, and a fully-managed subscription feature for the app using Stripe
- Integrated Sentry for app monitoring; created Judy, a Slack bot that sends Sentry alerts to developers
- Load-tested the backend APIs and prepared BOM to handle upcoming traffic on going public in Jan
- Created a comprehensive tech-spec for the app to help on-boarding future employees

**Technologies and Tools:** Flutter, NodeJS, MySQL, Typescript, VS Code, AWS, Github, Atlassian, JMeter

### Senior Software Engineer

Keyvalue Software Systems, India (Aug 2020 - Aug 2021)

- Developed MVP of an e-commerce platform in < 2 months, and then productized it (> 1M users)
- Designed the DB for the product from scratch, considering database concepts and extensibility
- Led a team of 3, to create an independent module for logistics, and completed the integration of 7 different logistics partners within 2 months

**Technologies and Tools:** NodeJS, Typescript, NestJS, Jest, PostgreSQL, GraphQL, Sentry, GCP, Linux

### Technical Staff

Shopalyst Technologies, India (Jan 2020 - Aug 2020)

- Cleaned up 5 years of messy code by enforcing project structuring, removed redundant and unused code, and mandated code formatting (Black for Python)
- Improved unit test coverage from 30% to ~70% for a codebase of more than 100 independent scripts

**Technologies and Tools:** Python, Elasticsearch, Cassandra, Redis, Kibana, VS Code, Github

### Software Engineer

Flytxt Mobile Solutions, India (July 2015 - Dec 2019)

- Improved the speed of estimated audience calculation for an Ad targeting solution by more than 100 times by porting ~250 million records from MySQL to Elasticsearch
- Developed POC for an experience-centric cloud solution for targeted marketing which included voice-based control, dynamic themes, salesforce integration and a chatbot
- Interviewed, trained and onboarded more than 25 fresh engineers across multiple teams

**Technologies and Tools:** Java, Spring, Maven, JSON, MySQL, Elasticsearch, Kafka, Hadoop, JAX-RS, REST, Atlassian, Github, Linux

## EDUCATION

**Polytechnique, Montréal**

M.A.Sc in Computer Science

*Present*

**University of Kerala, India**

B.Tech in Computer Science

*Apr 2015*