

# Rohit Krishnan Somasundaram

[in LinkedIn](#) | [604-726-7967](tel:604-726-7967) | [Vancouver, BC, Canada](#) | [krishr.somu@gmail.com](mailto:krishr.somu@gmail.com) | [GitHub](#)

## WORK EXPERIENCE

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### VisionBox Inc.

Mar 2022 - Oct 2023

#### Machine Learning Engineer

Burnaby, BC, Canada

- Created and deployed an AI chatbot for detailed analysis of user's AWS and Kubernetes accounts. Amplified response accuracy by 40% through integration of a fine-tuned GPT model, enabling precise GraphQL query generation and advanced question understanding capabilities.
- Led the development of posture insights for the Big Data & AI conference. Utilized YOLO v8 pose models and incorporated AI heuristics for live exercise tracking and immediate posture correction. Achieved 32 FPS outputs and cut model usage by a third with heuristic-based inference optimization, ensuring efficient resource utilization.
- Developed a legal counterargument generation system with document question answering and summarization capabilities using RAG with LangChain and Pinecone. Enhanced document comprehension and response efficiency by optimizing document chunking and prompt engineering, reducing response time from hours to under 30 minutes.
- Achieved a 50% processing time reduction through ML pipeline optimization and facilitated a smooth transition to AWS cloud infrastructure for finding the Cyber Risk Associated with a company. Leveraged AWS SageMaker, Cloud9, Document DB, API Gateway, and Lambda to bolster scalability, fostering stronger client relationships and securing additional projects.
- Led data analysis and implemented AI solutions for a trucking client, resulting in 20 times decrease in order rejections and a 10-fold improvement in operational efficiency.
- Orchestrated drone data acquisition strategy, enabling advanced deep learning models for pinpoint detection of plant issues for similar groups of plants. This approach minimized crop failures and forecasted a 15% yield boost.
- Crafted a transformative data segmentation and clustering strategy revolutionizing sleep minutes prediction. Achieved 100x reduction in model count, streamlining from 6000 to just 60 models. Leveraged these insights to amplify predictive accuracy and deliver actionable insights.

### Medical Image Analysis Lab

May 2020 - Aug. 2020

#### Research Intern

Burnaby, BC, Canada

- Explored diverse deep learning models on a COVID-19 chest X-ray dataset. ResNet-152 emerged as the top performer with 93.2% accuracy. Analyzed the trained ResNet model using Grad-CAM, including fine-tuning, predicting variability, and assessing saliency variability due to training data.

### Prodapt Solutions

May 2018 - Jul. 2019

#### Associate Software Engineer

Chennai, India

- Developed tools and automated business use-cases for the Swiss functionality testing team using Selenium.

## PROJECTS

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- **HubermanGPT:** A GPT-2-style character language model emulating Andrew Huberman's talking style.
- **Super Resolution of Faces:** Real-time facial image upscaling using face detection models and FSRCNN on Atlas 200 DK.

## EDUCATION

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### Simon Fraser University

Sep 2019 - Apr 2021

M. Sc in Computer Science (Visual Computing Specialization)

Burnaby, BC, Canada

### Anna University

Aug 2014 - May 2018

Bachelor of Engineering in Computer Science

Chennai, India

## SKILLS

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- **Languages:** Python, C++, C#, GraphQL
- **Frameworks & Libraries:** PyTorch, Keras, TensorFlow, OpenCV, LangChain, Scikit-learn, Unity, Streamlit.
- **Data Visualization:** Matplotlib, Tableau, Seaborn
- **Database:** MongoDB, Pinecone, SQL
- **AWS:** Lambda, SageMaker, S3, EC2, DocumentDB, API Gateway