

Pratik Gujjar

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WORK EXPERIENCE

Stripe

Vancouver, May 2023 – Present

Software Engineer, Machine Learning

- Building Stripe's *Future of Training* workflows orchestrator using Flyte and Ray to seamlessly spin up ML training pipelines.

SceneBox Inc.

Vancouver, July 2021 – April 2023

Senior Machine Learning Engineer

- Startup acquired by [Applied Intuition](#).
- Designed, implemented and deployed *Campaigns*, a platform for building, running and tracking containerized and versioned machine learning *Apps* on data such as data annotations or model training.
- Deployed *StreamableSets* for multi-worker batched streaming of data for ML model training directly from cloud object storage. High-throughput that is 6-10x faster than multi-threaded data download.
- Deployed to production, an ultra-low latency model serving platform running at 35 fps vs 5 fps previously on AWS EC2 instances using KServe and Torchserve. Improved image ingestion rate 10x, from 400 images per minute to 4000 images per minute.
- Deployed to production, a Vision-Language space search for unlabeled natural images at scale. Also deployed a Keypoint Detection model for pose estimation. Worked with images, videos and lidar point clouds.

Huawei Technologies Canada Co. Ltd.

Vancouver, Dec 2018 – August 2021

Machine Learning Researcher

- Published research on semi-supervised learning problems in the case of unlabeled data also being scarce (CVPR 2022). Our algorithm showed an improvement of 5% over existing baselines on a CIFAR10 dataset with 4k labeled samples and all unlabeled data is from the Tiny-Imagenet dataset.
- Deployed a high-throughput, low-latency, low-memory OCR model in the field on an 8MB embedded camera. Latency was improved by 77% using techniques like Knowledge Distillation and Quantization.

Avaya India Pvt. Ltd.

Bangalore, July 2015 – Aug 2016

Senior Technical Associate

Designed a wearable devices' framework at the intersection of SIP and Google's WebRTC for enterprise communications. Patented a wearable-centered network authentication mechanism that enables unhindered access for a user across networked devices.

EDUCATION

Simon Fraser University, Canada

Sep 2016 – Nov 2018

Master of Science in Computing Science

Thesis defended on *Reasoning About Pedestrian Intent by Future Video Prediction*. Advisor: Prof. Richard Vaughan. Thesis committee: Prof. Yasutaka Furukawa and Prof. Anoop Sarkar. GPA: 4.00

National Institute of Technology Karnataka Surathkal (NIT-K)

July 2011 – May 2015

Bachelor of Technology in Electronics and Communication Engineering

Hardware Architectural Development of a High Radix Adaptive CORDIC Algorithm on a FPGA. Advisor: Prof. Sumam David. GPA: 9.19/10

SKILLS

Artificial Intelligence: Deep Learning, Computer Vision, Object Detection and Tracking, Reinforcement Learning, Machine Learning, PyTorch, TensorFlow, Keras, TFlite, TensorRT

Cloud AI: Flyte, Apache Spark, AWS, DVC, Kubernetes, KServe, Torchserve, CircleCI, REST, Flask

Programming Languages: Python, C++, Java, C, MATLAB

PUBLICATIONS

Banitalebi-Dehkordi, Amin. **Gujjar, Pratik.** Zhang, Yong. *AuxMix: Semi-Supervised Learning With Unconstrained Unlabeled Data*. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition **CVPR'22** Workshops, New Orleans, USA June 2022

Gujjar, Pratik. Vaughan, Richard. *Classifying Pedestrian Actions in Advance Using Predicted Video of Urban Driving Scenes*. In Proceedings of the IEEE International Conference on Robotics and Automation **ICRA'19**, Montreal, Canada. May 2019

Gujjar, Pratik. Vaughan, Richard. *DeepIntent: Learning to Model Pedestrian Intent in Autonomous Driving Scenarios*. Abstract in Proceedings of the IEEE International Conference on Intelligent Robots and Systems **IROS'17**, Vancouver, Canada. September 2017

PATENT

Gujjar, Pratik. Hegde, Vignaraj. *A method for multifactor authentication and accreditation by induction for wearable devices in a network*. U.S Patent November 2018.

AWARDS AND ACHIEVEMENTS

- Century 21 Charlwood Family Graduate Scholarship Spring 2018
- Computing Science Graduate Fellowship, Simon Fraser University Fall 2016
- Mitacs Globalink Graduate Fellowship Fall 2016 and Spring 2017
- IEEE Student Enterprise Award, project funding of \$1500 Fall 2014

REVIEWER SERVICES

International Conference on Robotics and Automation (ICRA 2019)

Unmanned Systems Journal.

IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2022)

Extra-Curricular

- Teaching Assistant, Simon Fraser University FALL 2016 & FALL 2017
- Convener, Electrical and Electronics Committee FALL 2014
- President, Amateur Astronomy Club JULY 2014 – MAY 2015