# Milind **Paliath-Pathiyal**

[Milind's GitHub](#)   [Milind's Website](#)   **Note: U.S. Permanent Resident (No VISA Needed)**

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## Technical Summary

**Programming Languages**

Proficient ◉ *Python, C++, Java, Javascript, HTML*
Familiar ◉ *Swift, C, SQL, SPARQL*

**Tools**

Dev. ◉ *PySpark, TensorFlow, Keras, Hadoop, Grafana, Jupyter Notebook, MATLAB, Scikit-Learn, InfluxDB, Plotly*

## Education

| | | |
|---|---|---|
| University of Waterloo ◉ | B.A.Sc. Candidate in Systems Engineering (Co-op Program) | Sep. 2017 - June 2022 |

## Work Experience

**Computer Vision Research Intern** ◉ **Cisco Systems,** San Jose            4 mos • Jan. 2020 – Present
- Learning indoor *localization* using Wi-Fi signals produced from wireless access points
  - Understanding mathematics behind triangulation, trilateration, RSSI, ToF, AoA
- Creating **CNN models** on **TensorFlow** to analyze density heatmaps produced from data points
- Creating software to simulate **3D motion** in space for RF signal detection
- Familiarizing with **channel state information** and **fine-grained image recognition**

**Machine Learning Intern** ◉ **Cisco Systems,** San Jose            4 mos • May. 2019 – Aug.2019
- Worked in *rapid prototyping* phases solving SD-WAN failures in the ML engineering networking team
- Analyzed large **time-series** SD-WAN data with **PySpark** to individualize causes to Cisco's router failures
- Analyzed over 700 million rows of SD-WAN failure statistical metrics with **Scikit-Learn**
- Automated estimation of statistical metrics to identify origins of SD-WAN failure features via **Plotly**
- Pushed **ML statistical visualization dashboards** for SDWAN failure prediction to employee production

**Automation Software Developer Intern** ◉ **ThoughtWire,** Toronto            4 mos • Sep. 2018 – Dec 2018
- Extended automated tests and familiarized with containerization using **Docker** and **JUnit**
- Assisted on deployment of the ThoughtWire Ambient platform

**Embedded Software Developer Intern** ◉ **Kidney Clinical Research,** London            4 mos • Jan. 2018 – April 2018
- Developed a medical data exporter for Philips Bedside Patient Monitors
- Developed serial communication with **MIB/RS-232** protocols adhering to the IntelliVue Patient Monitor

## Project Highlights            *more projects here @* [Milind's GitHub](#)

**Robotics** ◉ **Team Size:** 👥👥👥👥
- Founded and captained robotics team of novice members for 4+ yrs.; attended 5+ regional competitions
- Self-taught applications of autonomous self-drive mode, embedded systems, motors and sensors
- Lead as software (2 yrs.) and hardware (2 yrs.) leads over the course of 4+ years since inception of team

**iOS AR Smart Camera** ◉ **Team Size:** 👤
- Used CoreML to classify objects and label objects with 3D floating text through ARKit camera
- Increased frame rate by reducing polygons & converting text package from SceneKit to SpriteKit

**Kaggle Research Notebooks** ◉ **Team Size:** 👤   View my competition notebooks @ [Milind's GitHub](#)
- **Realtime Vehicle Classification** - CNN model that classifies a vehicle image by returning the model
  - (In progress) Analyze each frame of dashboard video and classify nearby vehicles
- **Breast Cancer Tumor Classification** – CNN model that classifies biopsy images of breast cancer tumors
  - Highly condensed features will train the model to give accurate predictions of abnormal images
- **Apple iOS App Rating Prediction** – Predict whether an app will receive a rating over 4.
  - Learned how to effectively clean input data and predict app rating using KNN

**Bicycle-Camera Safety Device Patent** ◉ **Team Size:** 👤
- Inspired to innovate smart device to prevent the increasing count of vehicle-bike collisions in hometown
- Device connects to bicycle seat; prevents hit-n-runs and provides visual aid for vehicle drivers

## Extras

- IBM Watson Award @ Menlo Hacks 2018, (2x) 1st Place Award @ Saratoga Hacks
- Completion of ML courses on Kaggle & enrolled in MIT Course 6.S191 (Introduction to Deep Learning)
- 3 years of Swift experience, 5 personal iOS apps (2 of which available on Apple App Store)
- Enjoy playing basketball and participated in competitive water polo and swimming