# Prakruti Catherine Gogia

Computer Vision & Deep Learning Engineer

Bellevue, WA
prakruti.gogia@gmail.com | +14124525041
Twitter | Github | LinkedIn | https://prakruti.github.io

## SUMMARY

I am interested in senior software engineer and tech lead roles. I have advanced knowledge of C++, SLAM. I have experience managing a team of hackers to ship a deep learning model using a cloud service. I excel at roles requiring product thinking, technical domain expertise, rapid prototyping and people management skills.

## EDUCATION

**MS Computer Vision** | Robotics Institute, Carnegie Mellon University 2016-2017
Computer Graphics, Computer Vision, Visual Recognition and Learning, Math for Robotics
Research Assistant to Prof. Michael Kaess in the Robot Perception Lab

**B.Tech & M.Tech in Electrical Engineering** | IIT Madras 2011-2016
Computational Photography, Linear Algebra

## WORK EXPERIENCE

**Software Engineer** | Microsoft HoloLens 2018–present
Worked on headtracking, 3D reconstruction and bundle adjustment to ship HoloLens 2.
Worked on calibration, visual-inertial odometry, tracking LED constellations for new devices.
Prototyped an MC-CNN (ONNX) and semi-global matching-based hybrid solution for dense depth from stereo.
Created an internal benchmark and prototyped image retrieval methods for relocalization.
Pioneered a 6DoF ground truth collection system using OptiTrack cameras for teams across HoloLens and trained vendors in calibration and data collection for unseen locations.

**Tech Lead and Co-founder** | OrcaHello project [talk] [code] [project-page] 2019 - 2022
I led a team of 20 hackers and 2 non-profit partners to build "OrcaHello": a whale call detection system that won 3rd place at the 2022 Microsoft Global Hackathon (Hack4Good track).
I built our data annotation pipeline (~ 15 hrs of spectrograms tagged using active learning), trained the model, and built our live inference pipeline on Microsoft Azure (Container Instances, AKS, CosmosDB, App Service).
OrcaHello runs 24x7 detecting whale calls in the Puget Sound with open-sourced model, data and code.
Our project has been the recipient of over $30K in Azure credit grants and over $15K in non-profit grants.

**Software Engineering Intern** | Magic Leap Summer 2017
Prototyped double-window bundle adjustment in the production pipeline and received a full-time offer.

**Research Assistant and Teaching Assistant** | CMU 2016-2017
Published the ICRA 2019 paper "Dense Surface Reconstruction from Monocular Vision and LiDAR"
TA for Undergraduate Computer Vision: I created assignments, lessons, graded exams and held office hours.

## SKILLS

Programming Languages (most to least experience): C++17, Python, C#, Javascript
Frameworks & Tools: PyTorch, CMake, GTest, Microsoft Azure, OpenCV, Ceres, Unity, Three.js
Beginner in 3D modeling in Blender, Fusion 360 and 3D printing for prototyping.