Prakruti Catherine Gogia
Computer Vision & Deep Learning Engineer

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SUMMARY

I am interested in senior software engineer and tech lead roles. I bring to the table product thinking, technical domain expertise, rapid prototyping and people management skills. I have experience building SLAM in C++ for AR. Additionally, I have led a team of hackers to ship a deep learning model using a cloud service.

WORK EXPERIENCE

Software Engineer | Microsoft HoloLens   2018–present
Core SLAM Technology
- Designed and implemented headtracking and bundle adjustment algorithms to ship HoloLens 2.
- Worked on calibration, visual-inertial odometry, tracking LED constellations for new devices.
- Pioneered a 6DoF ground truth collection system using OptiTrack that provided the only source of high-fidelity and large scale data across teams. Trained vendors in calibration, data collection for new locations.
Deep Learning
- Prototyped an MC-CNN and semi-global matching-based hybrid solution for dense depth from stereo.
- Created an internal benchmark and prototyped image retrieval methods for relocalization.

Tech Lead and Co-founder | OrcaHello project [talk] [code] [project-page]   2019 - 2022
Led a team of 20 hackers and 2 non-profit partners to build "OrcaHello": a 24x7 whale call detection system helping killer whale conservation in the Puget Sound. Open-sourced model, data and code.
Built the data annotation pipeline (~ 15 hrs of spectrograms tagged using active learning), trained the model, and built the live inference pipeline on Microsoft Azure (Container Instances, AKS, CosmosDB, App Service).
Won 3rd / 123 at the 2022 MSFT Hack (Hack4Good) and raised $30K in Azure credits, $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: Created assignments, lectures, graded papers and held office hours.

EDUCATION

MS Computer Vision | Robotics Institute, Carnegie Mellon University   2016-2017
Computer Graphics, Computer Vision, Visual Recognition and Learning, Math for Robotics

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

SKILLS

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