

Sumesh Thakur

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Profile

Master's student at Graphics & Spatial Computing Lab, Saint Mary's University, Halifax. Passionate about computer vision and deep learning. Highly capable leader, having led multiple group projects to completion. Proficient in a range of modern technologies including Python, C++, JAVA, and JavaScript. Expertise in modern deep learning libraries including PyTorch, Keras and TensorFlow.

Experience

INNOVATION ASSOCIATE | BARRIERBREAK SOLUTIONS | DEC 2017 – APRIL 2019

- Involved looking at how to make the organization better - either by improving existing tools, processes, and technologies. Involves delving into aspects of Mobile Applications, deep learning, augmented reality, NLP, and more.
- Lead the development of "6by6" Android Toolkit, first Indian currency detection application using deep learning.

Education

MASTER OF APPLIED SCIENCE IN MATHS & COMPUTER SCIENCE | APRIL '19 - PRESENT | SAINT MARY'S UNIVERSITY, HALIFAX, NOVA SCOTIA

- Working towards developing a robust and accurate pedestrian detection system for autonomous vehicles through LiDAR pointclouds as part of the master's thesis.
- Worked on various projects like **objects segmentation and clustering of point clouds, 3D fully convolution layers for pedestrian detection in road scene, sparse convolutions for feature learning from Point clouds.**
- Supervisor: Dr. Jiju Poovancheri

BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE ENGINEERING | JULY '14 - JULY '18 | CHANDIGARH ENGINEERING COLLEGE, I.K GUJRAL PUNJAB TECHNICAL UNIVERSITY, MOHALI, PUNJAB

- Lead Coordinator of Computer Science Engineering Gaming Club.
- Organized and lead the inter-university Video gaming competition for 2017 and 2018.
- GPA: 75% (with Distinction)

Courses

- **CSCI-6671:** Computer Graphics, **Saint Mary's University.**
- **CSCI-6691:** Special Topics in Real-Time 3D Vision (Directed Studies), **Saint Mary's University.**
- **BTCS-701:** Artificial Intelligence, **Punjab Technical University.**
- **BTCS-503:** Design & Analysis of Algorithms, **Punjab Technical University.**
- **CS224W:** Machine Learning on Graphs (Stanford University), **MOOCs.**
- **CS231N:** Convolutional Neural Networks (Stanford University), **MOOCs**

Scholarships & Rewards

- **FGSR Fellowship**, Saint Mary's University, 2019.
- **First Position, 3MT Thesis Competition** at Saint Mary's University, 2020.
- **Instructional Skills Workshop** Certified Instructor, 2019.
- **Bronze Medal**, GIAT, Third Party Co, Japan, 2017.
- **AMCAT Certification** (Software Engineer), Aspiring Minds, India, 2016.

Projects

- **Professional Projects**
 - **"6 by 6" Android Application**
 - Developed three In-App Modules namely Currency Detector, Light Detector and Magnifier for visually impaired.
 - Created "Indian Currency" dataset from scratch, consisting "10 currency classes" and 100000 images.
 - Employed Inception Net (MobileNet) architecture for currency classification, on Android platform.
- **Academic Projects**
 - **Bird Detection in Wild for Shape Matching**
 - Developed a bird detection tool in wild for analyze and study bird formations.
 - Created a "bird" dataset consisting of more than 1200 bird images with more than 4500 manually annotated objects (birds, airplanes, kites etc.)
 - Employed SSD architecture at backend for object detection.
- **Other Projects**
 - **Cornell Box using Raytracing.**
 - **Procedural Landscape creation using Perlin Noise.**
 - **Poisson Grid Sampling in 3D Pointclouds.**
 - **3D point segmentation and clustering using RANSAC and K-D Tree.**

Technical Skills

- Broad experience in **Modern Computer Vision, Deep Learning, Convolution Neural Networks Algorithms, Graph Representation Learning, Mobile app development, Machine Learning Algorithms and Web Technologies.**
- Programming Languages: Python3, C++, JAVA, JavaScript, HTML
- Software Libraries and Frameworks:
 - **Deep Learning and Machine Learning:** Pytorch, Keras, Tensorflow, Sklearn
 - **Point Cloud Processing:** PCL, Open3D
 - **Data Visualization:** Matplotlib
 - **Computer Graphics:** OpenGL
 - **Optimization and Calculations:** Numpy, Numba, Pandas
 - **Mobile and Web Development:** Android Studio, VueJs

References

- Dr. Jiju Poovancheri (supervisor)
Assistant Professor, Mathematics and Computing Science Department, Saint Mary's University
(902)420-5787
- Surbhi Chaudhary (Personal)
2309, Brunswick Street, Halifax
(902)402-7031

Personal Information

- Name: Sumesh Thakur
- Date of Birth: 10-Aug-1995
- Nationality: Indian (East Indian)
- Civil Status: Single

Declaration

I hereby declare that all the details mentioned above are in accordance with the truth and fact as per my knowledge and I hold the responsibility for the correctness of the above-mentioned.

Name: Sumesh Thakur

Place: Halifax, Nova Scotia