

# Harshdeep Sokhey

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## SUMMARY

Computer Engineer with 3+ years of industry experience, working towards a Master's Degree in Computer Science with specialization in Scalable Machine Learning and Deep Learning. Working as a Graduate Student Researcher at the Center for Unified Biometrics and Sensors (CUBS) under the supervision of Dr. Venu Govindaraju.

## EDUCATION

**University at Buffalo, The State University of New York** (Expected August 2017 – February 2019)

*Master of Science, Computer Science*

*Relevant Courses:* Machine Learning, Applied Deep Learning, Probabilistic Graphical Models Algorithms, Parallel and Distributed Systems, Operating Systems, Computer Vision and Pattern Recognition,

**Birla Institute of Technology, Ranchi, India** (July 2009 - June 2013)

*Bachelor of Engineering, Computer Science and Engineering*

## TECHNOLOGY & SKILLS

C++, Python, C, Java, MATLAB, Linux, Shell-Scripting, Docker, Pytorch, Tensorflow, Apache Spark, , CUDA, CMake, Git, SVN

## CERTIFICATIONS

**Deep Learning Specialization** (5 courses on Deep Learning by Coursera) ([B7H9E5QW4QSH](#), June 2018)

## RESEARCH EXPERIENCE

**Graduate Student Researcher** (*CUBS, University at Buffalo*) (June 2018 – Present)

Working on Face Detection algorithms for detecting tiny faces using WIDER dataset [**Pytorch, Caffe, CUDA C++**]

**Graduate Student Researcher** ([DRoNES Lab](#), *University at Buffalo*) (December 2017 – May 2018)

Worked on compiling a dataset with RGBD-Wifi information for benchmarking Wi-Fi augmented visual sensing algorithms.

Developed a dataset toolkit for processing the RGBW-W dataset without a ROS platform. [**ROS, Python, C++**]

## PROFESSIONAL EXPERIENCE

**Senior Software Engineer** (*Aricent Technologies, Gurgaon, India*) (January 2014 - November 2016)

Designed and Implemented the Pre-Silicon Verification Framework for PHY Controller for Intel LTE Modem [**C++**]

Designed and Implemented the Uplink Receiver Chain processing modules for LTE eNodeB. [**C, DSP, ASM, Shell Scripting, MATLAB**]

## PROJECTS IN SOFTWARE DEVELOPMENT

**Online Doodle Classification using Sequence Models:** Developed a Variational Autoencoder framework with Recurrent Neural Network cells, generating feature representations for doodle images, for performing online classification of doodles. The model was tested on Google's Quick draw dataset. [**Pytorch, CUDA C++**]

**Crowd-Counting using Density estimation:** Implemented the state-of-the-art Switch-CNN model to perform crowd-counting. The model was trained on ShanghaiTech, UCF\_CC\_50 and UCSD Pedestrian dataset. [**Pytorch, CUDA C++**]

**Multivariate Gaussian Kernel Density Estimation using CUDA:** Utilized Kernel Density Estimation on NHANE's dataset on Serum Level for Adult females to predicate medical conditions based on varying Serum Levels in females. [**CUDA C++**]

**Unsupervised Spectral Classification for APOGEE dataset (NIPS 2017 Implementation Challenge):** Designed an unsupervised algorithm for classifying spectral data from APOGEE dataset (DR12), verifying the results published in the paper. [**Python, Nvidia TITAN Xp GPU**]

**Convolutional Neural Network for image classification:** Implemented a Convolutional Network to classify images into "wearing eye-glasses" and "not wearing eye-glasses" on the 'CelebFaces Dataset (CelebA)' with an accuracy of 93.3% on the 87K image dataset. [**Keras**]

**Connected Components using Map-Reduce:** Verified the results of a research paper on *Connected Components* using *Map-Reduce*. Tested the implementation against *40M node Twitter Followers graph* and *4B node Document Similarity* [**Python, Spark**]