AISHWARYA S. BUDHKAR

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EDUCATION

New York University (Courant Institute of Mathematical Sciences), New York, NY, USA — May 2020
Master of Science | *Computer Science* — GPA 3.72
Courses: Algorithms, Operating Systems, Computer Vision, Vision Meets ML, Deep learning, Big Data

Pune Institute of Computer Technology (Savitribai Phule Pune University), Pune, India — June 2018
Bachelor of Engineering | *Computer Engineering* — GPA 3.83
Courses: DS, OS, DBMS, OOP concepts, Computer Networks, Software Engineering, Data mining, Theory of Computation

TECHNICAL SKILLS

Languages: C, C++, Python, Java, Scala | **Data Science**: PyTorch, Tensorflow, Keras, sklearn | **Big Data:** Spark, Hadoop, Pig, Hive, Impala

Tools: Eclipse, Microsoft Visual Studio, QT Creator, OpenCV, MATLAB, IntelliJ, VS Code, PyCharm, Tableau | **Database**: MySQL, DB2

EXPERIENCE

Capstone Project - Machine Learning, Citi Bank, New York, NY, USA — Oct 2019 – Feb 2020

- Designed and developed **Algorithmic trading platform** to generate trading strategies using real orders and synthetic orders
- Used novel architecture with Generative agents for generating synthetic orders to develop efficient trading strategies with bots
- Used **Transformers, LSTMs** for Generative agents, **Reinforcement Learning** techniques for bots to hedge transactions efficiently
- Built a successful prototype by designing a **scalable architecture** using **RabbitMQ** with **Protobuf** for communication which can handle 2000 bots with latency of 3.7 ms

Computer Vision Independent Study, New York, NY, USA — Sep 2019 – Jan 2020

- Worked to improve **object recognition** in human hand in videos using **Faster RCNN** and **Pose Estimation**
- Applied ingenious pipeline with **pose estimation** to detect hand keypoints in videos and used **VGG model** for object classification
- Trained a **Neural Network** to predict bounding boxes around objects by using hand keypoints and used the model to predict object bounding box achieving classification loss 0.0402, regressor loss 0.0239, a significant improvement over Faster RCNN
- A combination of both techniques helped to improve detection significantly for obstructed and hidden objects

Morgan Stanley, New York, NY, USA | *Technology Summer Analyst, Client Intelligence* — Jun 2019 – Aug 2019

- Deployed a production feature for **hybrid mobile application** to enable users to capture information about clients
- Engaged with clients to apply to build **machine learning models** to identify keywords to be flagged based on the content of the email to increase efficiency for analysts
- Worked in an **Agile team** working on development, testing and deployment of application

NVIDIA, Pune, India | *Software Development Intern, GeForce Experience Client* — Jul 2017 – May 2018

- Developed a **one-stop platform** for all gamers' needs by adding features to **GeForce Experience** platform
- Performed **web scraping** to collect game data using APIs to perform data analysis using **python** for predictive analytics
- Refactored existing NVCPL application using **QT Creator** to compare performance and development speed for hybrid application

PROJECTS

Split-Brain Auto-Encoder — Mar 2019 – May 2019

- Successfully applied **self-supervised learning** technique - **Split-Brain AutoEncoder** model for classification problem in Vision which splits the input channels into two, feeds them into disjoint sub-networks trained to reconstruct each other's data channels in order to perform well on finetuning task.
- The model successfully found global features for classification by learning useful representation of input data

Inclusive Images – Kaggle Challenge — September 2018 – December 2018

- Developed **image recognition system** that can perform well on test images drawn from different geographic distributions than the ones they were trained with **ResNet, DenseNet** baseline models. Used tensorflow to create model, OpenCV for visualization
- Achieved **98 % accuracy** on stage 1 test images with a variant of **weighted sampling** to account for class imbalance issue

Acceleration of Swarm Intelligence based Metaheuristic on CUDA GPU for Real World Applications — August 2017-March 2018

- Used novel idea to speed up existing real-world applications for solving combinatorial optimization problems
- Tested efficiency of **Neural Networks** with **Particle Swarm Optimization** used instead of backpropagation using tensorflow
- Achieved **10x speedup** on 5 input XOR network and **2x speedup** for Iris image classification.

PUBLICATION

Aishwarya Budhkar, Nikita Patil. **Video-Based Human Action Recognition: Comparative Analysis of Feature Descriptors and Classifiers**. International Journal of Innovative Research in Computer and Communication Engineering, (ISSN:2320-9801) Volume 5, Issue 6, June 2017

ACHIEVEMENTS

- NYU Computer Science Department's **Most Innovative project** prize 2020, NYU GSAS department representative at GHC
- Third prize in category AI/ML, **EQ Technologic- Most innovative project** award at Impetus and Concepts '18, India