Sanat B Singh

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Career Objective

I am passionate and motivated about the use of deep learning in various fields related to Computer Vision which benefit and improve our society.

Education

Computer Vision Nanodegree
May 2020 - Present

Udacity

Improving on my knowledge in Computer Vision. (Currently Ongoing)

Bachelor of Technology (Computer Science & Engineering)
2017 - 2021

Kalinga Institute of Industrial Technology

8.77 - (Overall till end of 5th Semester)

Class XII - SSSC (Senior Secondary School Certificate)
2016 - 2017

CBSE

83.6% in Class XII - CBSE Board - The Khaitan School, Noida

Class X - SSC (Secondary School Certificate)
2014 - 2015

CBSE

9.8 CGPA - CBSE Board - Khaitan Public School, Noida

Experience

Co-Founder
2019 - Present

Zyik.ML

Founded Zyik.Ml along with my friend & colleague Aayush kumar with an aim to provide AI based healthcare services all over the world. It started as a college project but now is a registered startup under Ministry of Micro, Small and Medium Enterprises - Government of India.
Responsible for Deep Learning Model Development & Research, DevOps Pipeline.

Machine Learning Instructor (Core Team)
November 2018 - Present

Konnexions

Part of core team. Working as an instructor teaching Machine Learning. Konnexions is the official Web Development IT society of KIIT working under KSAC (KIIT Student Activity Centre) with aim to provide and foster professional advancement opportunities among individuals and provide a way to keep up with current technologies and trends.

Core Team Member
March 2019 - Jan 2020

DSC KIIT

Member of DSC KIIT with Machine Learning as domain.

DSC is a flagship programme by Google for aspiring student developers.

Projects

Medico - A Dashboard System

Johns Hopkins Center for Bioengineering Innovation & Design (CBID) - Covid19 Virtual Design Challenge

A dashboard system for doctors working in remote/assembled clinics where they can access status & detailed health related information of different patients instantly and follow up with them (especially remote patients who are under quarantine at home) & a Covid19 X-Ray Screening application which will can assist doctors in diagnosis. Also a dedicated self-diagnosing section where people can know if there's a need to go to the hospital or not. Meant to act as a bridge between the patients quarantined at home and the doctors in hospitals.

Responsible for AI Engine development.

Designed as an entry to Johns Hopkins Center for Bioengineering Innovation & Design (CBID) - Covid19 Virtual Design Challenge.

(Detailed proposal available on request)

(Currently only a Prototype / Proof of Concept)

Computer Aided Diagnostic System for COVID19 Detection using X-ray Images

Zyik.ML

Currently ongoing research project with an aim to diagnose X-ray Images and provide result whether the patient is COVID19 positive or has Pneumonia or is healthy. (Handling Class imbalances appropriately)

(Computation Resource funding provided by Paperspace)

Currently in DL model development stage.

Computer Aided Diagnostic System for ACL Tear Detection

Zyik.ML

A Computer Aided Diagnostic System to detect ACL (Anti cruciate ligament) tear in MRI scans. A CNN classifier is built using Alexnet on MRNet dataset released by Stanford ML group. Data augmentation was applied while training to deal with less number of data samples. The AUC achieved was 0.858 on train set and 0.876 on validation set.

Website : https://zyik.ml

(Project live on request as works on paid EC2 instance)

Computer Aided Diagnostic System for Malaria Detection

Zyik.ML

A lightweight Computer Aided Diagnostic System with an aim of easing the weary task of detection of Malaria infected cells by examination of blood smears under microscope using deep learning. A custom lightweight ConvNet is implemented with less than 8 million parameters which comes close to Densenet121 in terms of parameters but shows 10x faster inference time with farless resources on CPU deployment thus eligible for deployment on edge devices. Validation accuracy achieved was 95.6% (Updated Mish Version attained 97.8%).

GitHub Repository

Website: https://malaria.zyik.ml

Style Transfer in PyTorch

An academic project in which style of an image is extracted and applied to the content of another image. Like applying a painting style to a portrait or image.
A VGG-19 layer pre-trained model is used to extract the features and content from the images and create a new image.

Github Repository

Technical Skills

- **Languages :** Python, C, C++, Java
- **Machine Learning Frameworks :** PyTorch, Tensorflow, Scikit-Learn
- **Web Dev Tools :** Flask, Nginx, HTML, CSS
- **IDEs :** Visual Studio Code, Jupyter Lab, Spyder
- **Cloud & DNS Services :** AWS, Azure, GCP, Cloudflare, Freenom
- **Operating Systems :** Windows, Linux (Ubuntu, CentOS, Manjaro)

Courses Undertaken

Deep Learning Specialization (Coursera),

Intro to Deep Learning with PyTorch (Udacity),

Machine Learning (Coursera)

Achievements

- Selected as one of few teams from India for participating in Johns Hopkins Center for Bioengineering Innovation & Design (CBID) - Covid19 Virtual Design Challenge.
- Intel Edge AI Scholarship (Udacity)
- Secure & Private AI Scholarship from Facebook (Udacity)
- PyTorch Scholarship Challenge from Facebook (Udacity)

Strengths and Interests

Strengths : Self Motivated, Flexible, Can adapt to crucial situation, Determined, Teamwork Skills, Good Communication Skills, Always Learning

Interests : Reading Novels, Keeping up with Technologies in General - Mobiles, PCs etc.