Akansh Maurya

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Objective

I am enthusiastic about Machine Learning and Robotics and eager to find out its new applications to contribute to an interdisciplinary stream with my skills. Motivated to learn and grow.

Education

Institute Of Engineering And Technology, Lucknow
Bachelors of Technology, Electrical Engineering CGPA: 8.56 Expected: June 2021
Subject of Interest: Signal & System, Control System, Optimization.
Minor projects: Comparison of neural network vs traditional based PID tuning techniques, Nature inspired optimization algorithm.(ProjectLink)

Delhi Public School, Vidyut Nagar
Intermediate: 91.6 % and High school: 10 CGPA Completed: May 2017
Gold Medalist and Scholar Badge Holder

Previous Internship

Deep Learning Intern: ERTS Lab, IIT Bombay May-July, 20

- ERTS lab spends a significant amount of time validating ID cards uploaded by eYRC, eYIC and MOOCs participants, We developed a deep learning based web app that can automate the process of verifying and validating ID cards. Implemented a ResNet-50 architecture based classification algorithm, for verifying college ID cards.
- Developed a RotateNet model that can automatically rotate Images to correct orientation for improving OCR results on rotated images. Implemented real time Text Detection with Differentiable Binarization (DBNet) with 27 fps and Convolutional Recurrent Neural Network (CRNN), a combination of CNN, RNN and CTC loss for image-based sequence (text) recognition. Coded custom fuzzy string matching algorithm for validation of Text present in the ID card.

Machine Learning Intern: Astute Resolutions, Lucknow May-July, 19

- Making Lucknow a Smart City, collecting custom data from surveillance cameras, to identify non-helmet motorcycle riders and subsequently detecting number plates to penalize.
- Learned and got introduced to industrial use of computer vision, Machine Learning algorithm.

Projects [Project Links and other projects]

Verification and Validation of ID cards, as Intern at IITB May-July-20
The aim of this project was to verify and validate college ID cards uploaded by students for participating in various competition and online courses. In this project we used CNN based classification model to validate ID cards from a pool of images, then we used RotateNet to correct the orientation of Image for performing OCR. We developed a custom string matching algorithm for verifying details. This project can be accessed both via web api and Restful Api.
Survey and Rescue Drone, Funded by MHRD and e-yantra lab Oct,19-Feb,20
Aimed to mimic the situation of flood, and using drones to provide essentials like Food, medicine and Rescue operations.through this project I learned about implementation of PID Algorithm, Robot Operating System (ROS), and Image processing for detecting beacons (Edge, contour, whycon Marker detector), path planning Algorithm and drone working.
Genetic-Algorithm for Power System Optimization, Guided by Dr. Nitin A Shrivastava Oct-Nov, 19
In this project I coded GA, using MATLAB. I have solved the question from a famous Optimization book, Deb Kalyanmoy - Optimization for Engineering Design.

Publications and Accomplishments

Paper Title: "*An efficient way to verify and validate College ID cards using Deep Learning" (Under Review)*
Finalist in eYRC 2019-20, national level robotics competition, we secured 5th position in 30k participants.
Amir Fatima Undergraduate Scholarship Award 2018, A scholarship awarded by alumnus of IET Lucknow for student welfare and Technical advancement.

Certification

Deep Learning Specialization by Deeplearning.ai
Machine Learning by Stanford University, taught by Andrew NG
Control Engineering by NPTEL, IIT Madras
Image Processing Using OpenCV
Introduction to Internet of things and Embedded System

TECHNICAL SKILLS AND EXPERTISE

Programming Language: C, Python, MATLAB.
Python Libraries: Pytorch, TensorFlow, OpenCV, Robot operating System, Numpy, Matplotlib, Pandas.
Skills: Computer vision, Deep Learning, Control System, Signal and Systems.