Sanchit Tanwar

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Thapar university, Patiala, India

Experience

Computer Vision Research Intern *Attentive.ai (Jan 2020 - Present)*

- Implementing Learning without forgetting and knowledge distillation for semantic segmentation applications.
- Implementing and improving the performance of various Semantic segmentation model for Satellite and street imaging applications.
- Change detection in buildings using aerial image dataset.

Freelancing *freelancer.com (June 2019 - Present)*

- Detecting activities like sleeping and talking of students in a classroom, using face recognition and tracking for monthly feedback system for students, for an education startup.
- Multi label human pose classification and joint angle prediction per frame trained on custom video dataset.
- Calculating total footfall from video using CSRNet based crowd counting algorithms.
- Custom License Plate recognition and vehicle tracking software, implemented on Jetson Nano

Education

Thapar Institute of Engineering and Technology Patiala, India
Bachelor of Engineering Electronics & Communication; CGPA: 8.24/10 *Expected May 2020*

- Machine learning
- Image processing and computer vision
- Data structures and algorithms
- Computer architecture
- Embedded systems
- Operating systems

DAV Public School Panipat, India
High School; Percentage: 90.2% *2015-2016*

Skills

- **Languages**: Python, C++, Matlab
- **Technologies**: Deep Learning, Deep Reinforcement Learning(DQN, DDQN, A3C), Arduino, Raspberry pi, Latex, ARM, AVR, QGIS, Gdal, Ogr
- **Libraries**: PyTorch, TensorFlow, Keras, Scikit-Learn, Numpy, Pandas, Jupyter, OpenCV, PIL, Librosa, NLTK

Projects

- **Engagement Detection**: Research project under Dr. Vinay Kumar(DSP-IP lab) to detect engagement level of students.
  - Developed a novel multi-modal attention guided CNN for user engagement recognition using Daisee dataset.
- **CrimeDetection**: Detecting crimes from CCTV footage using UCF crime dataset using MIL ranking algorithm and slow-fast networks for feature extraction. This project was done as a freelance work for a mexican company Redinmex (contact)
- **Artificial Eyes**: Device for blinds that uses CNN and LSTM to generate image captions(Show, attend and tell) and converts the captions to speech of desired language based on raspberry pi.
- **Self Driving Car**: Self driving car using simulation tools.
  - Lane finding in road images, traffic sign classifier.
  - Steering angle prediction from driving video dataset.
  - Vehicle detection and Segmentation using HRNet on Indian driving dataset. (Ongoing)
- **HealthCad**: Implemented some of the latest deep learning algorithms to help doctors diagnose various diseases.
  - Trained EfficientNet on malaria, chexpert, diabetic retinopathy dataset with class activation map generation to visualize results.
  - Conv-1d based neural network for atrial fibrillation classification using MIT-BIH dataset.
- **GAN**: Continuous project where I implement several applications of GAN's.
  - Dog like image generation using DCGAN
  - Semantic segmantation of city landscapes using pix2pix GAN.
- **PongAI**: Atari game (pong) playing AI based on DQN agent implemented using open ai gym and pytorch.

Achievements

- More than 80k total views on blogs and 10k monthly views for last 2 months.
- Placed top 10 % in 2 kaggle competetions of computer vision
- Received 5000$ research credits from google cloud.
- Writer for Towards Data Science, The startup and Towards AI.

Interests

- Blogging
- Music
- Badminton

Additional Information

- A team player as well as an adept independent worker.
- Enthusiastic about improving my skills
- Logical Approach