Akshay L Chandra

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Education

- **Indira Gandhi National Open University** — Hyderabad, India
  Post-Graduate Diploma in Applied Statistics; 85%; — *July 2017 – June 2018*
  - **Core Courses**: Descriptive Statistics, Probability Theory, Statistical Inference, and Statistical Techniques.
  - **Specialization**: Industrial Statistics (Topics - Optimization Techniques, Game Theory, Statistical Modelling).
- **Jawaharlal Nehru Technological University** — Hyderabad, India
  Bachelor of Technology in Computer Science & Engineering, 76% (Top 15/300); — *Aug. 2013 – May 2017*
  - **College**: Keshav Memorial Institute of Technology
  - **Major Project**: Built an intelligent web application using ASP.NET for efficient placements administration, with a prediction module that predicts students' placements with 90% accuracy.
  - **Excelled In Courses**: Mathematics, Predictive Analytics, Big Data Analytics, Java Programming, Design And Analysis Of Algorithms, Operating Systems, Computer Networks.
  - **Extracurricular**: Content Developer at kMitra, college's e-Magazine. Captain of college's soccer team.

Publications

1. **Akshay L Chandra**, S.V. Desai, Vineeth N Balasubramanian, S. Ninomiya, Wei Guo. Active Learning with Weak Supervision for Cost-Effective Panicle Detection in Cereal Crops. Preprint. Under Review.
2. **Akshay L Chandra**, S.V. Desai, Wei Guo, S. Ninomiya, Vineeth N Balasubramanian. An Adaptive Supervision Framework for Active Learning in Object Detection. British Machine Vision Conference (**BMVC**) 2019.

Research/Work Experience

- **Indian Institute Of Technology Hyderabad** — Hyderabad, India
  Research Assistant, Visual Learning And Intelligence Lab — *Dec. 2018 - Present*
  - Working under the guidance of **Prof. Vineeth N Balasubramanian** on Deep Active Learning and Plant Phenotyping in collaboration with **Prof. Wei Guo** (UTokyo).
  - Teaching Assistant to Dr. Vineeth at Summer School of AI, 2019 conducted at IIT Hyderabad.
  - Subreviewer at SIAM Conference on Data Mining 2020.
- **GGK Technologies** — Hyderabad, India
  Associate Software Engineer, AI/ML (R&D) Team — *June 2017 - Sept. 2018*
  - Optimized business processes for clients across multiple sectors like health care, retail, e-commerce by building useful prediction models, capturing customer/patient behavior patterns, identifying correlation and causation, maintaining data quality for smooth visualization and modeling. Exclusively worked on building an accelerated computer vision application that detects product pickups in a retail store from the CCTV footage.
  - Won **Trainee-Of-The-Month** award among 28 other trainees and **Star-Of-The-Month** award for successfully incorporating an accelerating action & object detection modeling in a computer vision application.
- **Polycom Technology R&D Centre** — Hyderabad, India
  Software Engineer Intern — *Aug. 2016 - Oct. 2016*
  - Implemented speech recognition feature in the 'Jaguar' update of their operating system.

Mentoring/Tutoring Experience

- **Udacity** — Hyderabad, India
  Project Reviewer & Mentor, Computer Vision Nanodegree — *Nov. 2018 - Present*
  - Currently, I review and assess code files, reports of projects submitted by students of Computer Vision Nanodegree program and assist them in graduating the course.
  - Fortunate to have received **Intel® Edge AI Scholarship** and **PyTorch Scholarship** (Facebook) at Udacity.
- **EduRidge India** — Hyderabad, India
  Machine Learning Instructor — *May 2018 - Dec. 2018*
  - Volunteered to take 6 sessions on 'Intro to Machine Learning' and 'Exploratory Data Analysis in Python' topics, organized by EduRidge, at various engineering institutions across Hyderabad.

Projects

- **Image & Bounding Box Annotation Slicer**
  An Object Detection Data Transformer *Apr. 2018*
  - This easy-to-use library is a data transformer mainly useful in Object Detection tasks.
  - It slices images and their bounding box annotations into smaller tiles, both into specific sizes and into any arbitrary number of equal parts. It can also resize them, both by specific sizes and by a resizing/scaling factor.
  - Readily available on PyPI for installation.
  - **URL**: https://github.com/acl21/image_bbox_slicer
  - **DOCS**: https://image-bbox-slicer.readthedocs.io
- **Mouse Cursor Control With Facial Movements**
  An HCI Application *Oct. 2018*
  - Controls mouse cursor with facial movements, uses Deep Learning, works with a regular webcam. It is hands-free, no wearable hardware or sensors needed. With the help of facial landmarks, this system registers facial actions like squinting eyes, winking and head movements and moves the cursor accordingly.
  - Demonstration video of the project received over 250,000 views and 7500 likes on LinkedIn.
  - **URL**: https://github.com/acl21/Mouse_Cursor_Control_Handsfree
- **Automatic Image Captioning With Visual Attention**
  A Deep Learning Application *Aug. 2018*
  - This application reads an image and outputs a caption describing objects in the image. To achieve this, I have trained a deep Encoder-Decoder model with Visual Attention on the famous COCO dataset using PyTorch.
  - **URL**: https://github.com/acl21/Image_Captioning_Attention
- **Robust Morse Code Converter**
  A Deep Learning Application *Aug. 2018*
  - This application converts Morse code signalled through eye-blinks, flashlight-flicks, mouse-clicks & hand gestures.
  - I built an Object Detection model that detects hands, trained on Indian University's EgoHands Dataset.
  - **URL**: https://github.com/acl21/MorseCode_Converter_DeepLearning
- **Selfie Filters Using Facial Landmarks**
  Creating Snapchat Like Filters Using Deep Learning *June 2018*
  - This application puts Snapchat like filters on faces by detecting 15 facial landmarks.
  - I trained the landmarks detection model on Dr.Yoshua Bengio's Facial Landmarks Dataset on Kaggle.
  - **URL**: https://github.com/acl21/Selfie_Filters_OpenCV
- **Alphabet Recognition Through Gestures**
  A Gesture Recognition Application *May 2018*
  - This application recognizes alphabet in gestures, detected either in a video or in a real-time (webcam) input.
  - I trained a Convolutional Neural Network model on the famous EMNIST Dataset available on Kaggle and integrating the gestures mechanism with the model
  - **URL**: https://github.com/acl21/Alphabet_Recognition_Gestures

Computer Skills

- **Languages**: Python, R, Java, C, C++, C#, SQL, PHP, JavaScript.
- **Libraries & Packages**: PyTorch, TensorFlow, Keras, OpenCV, Sklearn, Matplotlib, MATLAB, Latex, ASP.NET.

Certifications

- **Deep Learning**: NPTEL's 12-week, AICTE-FDP approved certification taught by Prof. Mitesh M. Khapra of IIT-Madras. Finished in the **top 5%** of the online class with over 1000 students across India.
- **Computer Vision Nanodegree**: Udacity's 12-week course with 3 CV based advanced deep learning projects.
- **Deep Learning Specialization**: Coursera's 5-course specialization taught by Andrew Ng and deeplearning.ai team.
- **Oracle Certification - Java SE 6 Programmer (1Z0-851)**: Passed the exam with 100% score.