Garima Nishad

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Education

International Institute of Information Technology(IIIT) Hyderabad, India
MS by Research, CGPA: 9 *Jan. 2020 – May 2021*

Courses: Digital Image Processing, Topics in Machine Learning, Probabilistic Graphical Models, Statistical Methods in AI, Machine Learning for Natural Sciences, Intro to Cognitive Science.

SRM College Of Engineering & Management Lucknow, India
Bachelor of Technology (Computer Science) *Aug. 2014 – May 2018*

St. Mary's Convent Inter College Lucknow, India
High School *July 2002 – May 2014*

Experience

Research Assistant(MS by Research) Jan. 2020 – Present
International Institute of Information Technology(IIIT) *Hyderabad, India*

- Developed a medical image classification model and a web API with 98.2 % accuracy which includes the dataset from two distinct devices (Leica Envisu & Copernicus). Research paper published.
- Implemented and developed a novel segmentation model for accurate detection of ten layers of the retinal scans for both Bioptigen & Copernicus machines. Research paper in progress.
- Built a gaze tracking model for detection of saccadic movements of the eye. Research paper in progress.

Research Intern Mar. 2019 – Dec. 2019
International Institute of Information Technology(IIIT) *Hyderabad, India*

- Developed an Inference engine for inference time prediction of a network without any deployment. ADB shell automation for TF-lite conversion and inference time calculation on an android emulator via terminal.
- Achieved state-of-the-art 97.4 % accuracy in image automation of pediatric Retinal OCT scans tests in collaboration with the University of Leicester, UK on the dataset provided by Dr Mervyn Thomas(NIHR Academic Clinical Lecturer). Research paper published.

Intel AI Ambassador Jan. 2019 – Present
Intel Corporation *Hyderabad, India*

- Won Intel AI International Summer Challenge Levels 1-5, 2019.
- Organized event meetups & invariably contribute to Intel dev-mesh open-source projects and blog posts.

Tech Blogger Jan. 2019 – Present
Medium Blog(Towards Data Science & Analytics Vidhya) *Hyderabad, India*

- Published writer in the top featured Machine Learning publications with 100K reads/post.
- Created own blog for core Deep Learning techniques known as "CodeComputerVision".

Computer Vision, Data Structure & Algorithms Nanodegrees' Mentor Apr. 2019 – July 2020
Udacity *Hyderabad, India*

- Increased graduation success rate by 70% by being Technical mentor.
- Conducted six webinars for Deep Learning core concepts & 1:1 guidance for projects.
- Conducted final round technical interviews for eligible computer vision mentors.

Computer Vision, NLP, DS & Algorithms Nanodegrees' Project Reviewer Nov. 2019 – July 2020
Udacity *Hyderabad, India*

- Gave precise code correction remarks for over 700 students for projects.
- Project included Facial key-point detection, Automatic image caption generator and Simultaneous localization and mapping(SLAM).

Publications

"Using artificial intelligence to distinguish between normal and abnormal development of the fovea". BIPOSA Conference-Edinburgh, 2019.

- This work has received numerous national and international prizes and was funded by the Medical Research Council (MRC), UK - Confidence in Concept award.
- Won annual award for the best paper and the best abstract presentation.
- Presented the research paper at the Academy of Medical Sciences(AMS), 2019.

"Using Artificial Intelligence (AI) to Classify Retinal Developmental Disorders". ARVO Journals, 2020.

- This paper was invited to be presented in The Parliamentary & Scientific Committee's STEM for BRITAIN.
- Invited to talk in "Women in Vision UK, 2020" in The UK's largest optical event "100% Optical" at "Future Practice Hub".

"Development and Validation of a Deep Learning Algorithm to Differentiate between Normal and Abnormal Retinal Development". British Congress of Optometry and Vision Science(BCOVS) conference, 2020.

- Won award for annual best oral presentation.

Projects

ADB shell automated inference engine for embedded devices | *Python, Keras, Tensorflow-lite, Android Studio*

- Developed an automated inference engine for real time inference time prediction of any neural network network. No model deployment is required to calculate inference time.
- ADB shell automation for TF-lite conversion and inference time calculation on an android emulator via terminal.

Gaze Tracker | *PyTorch, GPU Clusters, Git*

- This project aims to replace heavy expensive ophthalmology machinery with a small inexpensive embedded device.
- This work has also attracted grant funding from a leading UK sight charity, Fight for Sight.
- Research paper is in progress.

OCT Scan Segmentation | *PyTorch, GPU Clusters,ImageJ, Git*

- This project automates deciphering the exact grade of the disease with just one OCT Scan.
- Research paper is in progress.

Image Classifier for pediatric OCT scans | *PyTorch, GPU Clusters, Git*

- Developed pediatric medical image classification model with a state of the art 98.2% accuracy. This work included the dataset from two distinct devices (Leica Envisu & Copernicus).
- Research paper is published in BIPOSA Conference-Edinburgh(2019), ARVO Journals(2020), BCOVS(2020) .

Technical Skills

Languages: Python, C, HTML/CSS, Java/J2EE.
Libraries:PyTorch, TensorFlow, Keras, Fast.ai, OpenCV, Pandas, NumPy, Matplotlib.
Developer Tools: Git, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse.

Certifications

- Computer Vision & Machine Learning IIIT Hyderabad Summer School 2019.
- Computer Vision nanodegree by Udacity.
- Deep Learning Machine learning Specialization (IBM & Coursera).