ROHAN KARNAWAT

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TECHNICAL SKILLS

Languages	C++, Python, C, SQL, Javascript, MATLAB, HTML, Bash, Java
Softwares & Tools	Pytorch, Tensorflow, NoSQL, Angular, LaTeX, OpenCV, Docker, Android, Apache
Certificates	Convolution Neural Networks by Deeplearning.ai, Deep Neural Networks with Pytorch by IBM

EXPERIENCE

Institute of Robotics and Intelligent Systems, USC April 2020 - Current
Graduate Research Assistant *Los Angeles, CA*

· Researching new techniques for robust representation of images to defend against adversarial attacks by using IBM's ART and TwoSixLab's Armory. (*Advised by Prof Ram Nevatia*)

Samsung, Advanced Technology Group July 2018 - August 2019 & Summer 2017
Software Development Engineer *Bangalore, India*

· Developed software and machine learning solutions for mobile devices for tasks like semantic role labeling, human-object interaction, and biometrics & authentication.

· Managed weekly releases for the AI Gallery module on flagship mobile devices. Responsible for image post-processing, model updates, and error reporting.

· Tested and reported on various deep learning libraries for porting the Advanced speech recognition from Kaldi.

Center for Visual Information Technology, IIIT July 2016 - May 2018
Undergraduate Research Assistant *Hyderabad, India*

· Designed a meeting summarizer using pose, facial expressions and speech expressiveness. Worked on developing a room description application for blind users. Performed duties as a teaching assistant for Digital Signals, Computer Vision and Statistical Methods in AI/ML. (*Advised by Prof Anoop Namboodiri*).

Digitant August 2015 - December 2015
Web Developer *Hyderabad, India*

· Designed a page rank algorithm for subscribers to have personalized recommendations on content publishing sites. Built a dashboard to facilitate tracking & traffic analysis.

EDUCATION

University of Southern California *Expected May 2021*
MS in Computer Science GPA: 3.8

International Institute of Information Technology, Hyderabad *August 2014 - April 2018*
B.Tech (Honors) in Computer Science & Engineering GPA: 8.9

PROJECTS

Comic Strip Generation Computer Vision, GANs, Segmentation, DL

· Designed an end-to-end model using Conditional GANs with fine-tuned LSTM to generate alternate endings to Garfield comic strips with dialogue. Experimented with VQA-based joint embedding and InfoGANs *(Pytorch)*

Multimedia Data Synopsis Tool Image Processing, Compression, Full Stack

· Created an interactive video synopsis player of a large media directory enabling synchronized browsing and viewing of raw videos and images using Python-QT. *(C++, Python)*

Music Genre Classification and Mood mapping ML, DL, Cognitive Neuroscience

· Built an unsupervised learner and a supervised classification ensemble to classify songs by genres with 87.8% accuracy. Extended scope to a mood-based music recommendation engine. *(Tensorflow)*

C Shell Operating Systems

· Developed a multi-threaded command-prompt shell and basic kernel in C from scratch, with piping and regex matching. *(C)*

Autonomous Go Player AI, Reinforcement Learning

· Developed competitive AI bots for weiqi (go) and ultimate tic-tac-toe using Q-learning and alpha-beta pruned mini-max search. *(Python)*