Rohun Tripathi

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Interests Visual Perception, Machine Learning, 3D Vision

Education

Cornell Tech, Cornell University, New York
Master of Engineering in Computer Science, 2017 - 2018
GPA 4.05/4.00

Indian Institute of Technology, Kanpur, India
Bachelor of Technology in Computer Science and Engineering, 2011 - 2015

Professional Experience

Research Scientist - Amazon — Jul 2018 - Present
- Working on human object interaction in images and action detection in videos

Research Engineer - IBM Research — Feb 2017 - Aug 2017
- Prototyped IoT solutions for energy and space optimization in round-the-clock office spaces

Software Engineer - Sprinklr — Aug 2015 - Jan 2017
- Developed ad performance forecasting using MLPs for online budget allocation

Intern - Samsung Research — Jun 2014 - Jul 2014
- Implemented word prediction models for Bangla-language using RNN models

Intern - Tata Consultancy Services — Jun 2013 - Jul 2013
- Developed a bio-metric based secure and transparent resource distribution system

Publications

R. Tripathi, N. Snavely;
Single-View Height Map Prediction for Satellite Imagery, In submission, CVPR 2019

R. Tripathi*, M. Jain*, P. Kumar, S. Patel;
Automatic Generation of Secure and Usable Audio reCAPTCHA, In submission, DIS 2019

R. Tripathi*, I. Katsman*, A. Veit, S. Belongie;
Semantic Segmentation with Scarce Data, ICML Workshops, 2018

S. S. K. Sajja, A. P. K. S. Prakash, R. Tripathi, S. Dwivedi, A. Singhee, M. Vermeulen;
Enterprise scale privacy aware occupancy sensing, IEEE EDGE Workshops, 2018

R. Tripathi, A. Gill, R. Tripati;
RNN based Indic word-wise script identification using character-wise training, ICPRS 2017

Awards and Scholastic Achievements

M.K. Tata Scholar, Scholarship for Masters at Cornell, 2017-18

Scholarship for South Asia workshop on computing research, National University of Singapore 2015

Academic excellence, IIT Kanpur. Rank 1 in the academic year 2013-14

Charpak Scholar, Scholarship for semester in France from French government, Feb - Jun 2014

Winner, Microsoft Code.fun.do annual nation wide application competition, 2013

Runner-Up in International Robots Got Talent, annual tech festival 2013 at IIT Kanpur

A* in courses Computer Vision and Natural Language Processing at Cornell

Teaching Experience

Teaching Assistant, English Proficiency Program at IIT Kanpur — Jan 2015 - Apr 2015

Instructor, Nation Social Service, — Jul 2011 - Apr 2015
Taught basic sciences at the school for the underprivileged at IIT Kanpur

Research Projects

Single-View Height Map Prediction for Satellite Images Mar 2018 - Jul 2018
Research Assistant at Cornell Tech

- Proposed a new MAE loss designed for learning an end-to-end CNN for height prediction
- Fused predicted surface normals with height maps to improve prediction on sloped terrain
- Presented a new data set collected from 3 sites generated using classical stereo methods

Semantic Segmentation with Scarce Data Aug 2017 - Apr 2018

- Proposed a new architecture which learns the spatial mapping from coarse to fine annotation and regresses from the coarse/noisy annotation to the fine annotation space
- Method increases mIoU by an average of 15.52 units over the baseline in scarce data settings

Privacy Aware Occupancy Sensing in offices across Multiple Cities Feb 2017 - Aug 2017

- Implemented indoor location prediction models using a 3-layer dense network in Tensor Flow
- Wrote a real-time data analysis platform in C# using the Mongo Aggregation Pipeline
- Developed a Windows 7 python app for the edge device, leading to a successful pilot

Automatic Generation of Usable and Secure Audio reCAPTCHA Mar 2017 - Sep 2017

- Proposed a scalable reCAPTCHA generation system robust to SoTA ASR systems
- Presented 3 schemes, the best of which has SoTA user success rate and response time
- Demonstrated reCAPTCHA ability by crowd-sourcing audio transcription with 82% accuracy

Indic Word Level Script Recognition Dec 2014 - Jul 2015

- Developed a novel method for online script recognition by training RNNs on character level data for word level data classification
- Models performed on par with word level classifiers, with one-tenth the training time and data
- Extended to offline recognition by developing stroke recovery to retrieve temporal information

Select Minor Projects

Doctor Handwriting Recognition of Medical Charts Aug 2017 - Dec 2017

- Developed an end-to-end doctor handwriting recognition and indexing engine for Weill Medical College using a CRNN

Real-Time Hospital Resource Management Jan 2017 - Feb 2017

- Developed a real-time appointment overbooking application by using a binomial distribution to model patient no-show rates

Skills

Python, PyTorch, MXNet, MongoDB, Tensor Flow, Java, C#, Elastic

Course Work

Computer Vision, Machine Learning, Natural Language Processing, Robotics, Data Structures, Algorithms, Optimization Methods