

Rohun Tripathi

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EDUCATION **Indian Institute of Technology**, Kanpur, India
Department of Computer Science and Engineering
Bachelor of Technology, 2011 - 2015
Cumulative GPA 8.3/10.0
Major GPA 9.0/10.0

Sanskriti School, New Delhi, India
Central Board of Secondary Education
Higher Secondary, 2011, Percent: 95%

RESEARCH **B.Tech Thesis - Motion Planning** August 2014 - April 2015
PROJECTS Advisor: Prof Bhaskar Dasgupta
Implemented the Silhouette method for Motion Planning in arbitrary dimensions.
The approach was to create a road map of semi-free paths in any N dimensional configuration space containing obstacles, by recursive application of Silhouette method for each lower dimension. Dijkstra's algorithm is used to calculate the shortest path to the goal configuration. The method we implemented is complete, i.e, path will be found if any exists.

Robot Learning February 2014 - June 2014
Advisors: Profs Eric Nyiri and Olivier Gibraru
Implemented Programming by Demonstration methods on a Universal Robot UR10. We used non-linear time-invariant Dynamical Systems that can imitate unconventional forms of motion. Gaussian Mixture Models were used to model input data and parameters of DS were optimized based on MSE and Log-likelihood cost functions. We incorporated a Kinect to detect users and ensure safety. Our system learns any non-circular path within three manual demonstrations and was spatially asymptotically stable.

Indic Word Wise Script Recognition June 2014 - July 2015
Advisor: Prof Partha Pratim Roy
Developed a novel method for online and offline script recognition using Recurrent Neural Networks based on BLSTM architecture. First we trained RNNs using online character level data for 2-5 scripts, and then tested for word level classification. These networks performed on par with word level classifiers, with one-tenth the training time and requiring much less data.
We extended this approach for offline recognition by developing our method of stroke recovery to retrieve temporal information. Classification using above networks achieved competitive results.

Action Recognition December 2014 - April 2015
Advisors: Profs Partha Pratim Roy; Vinay Namboodiri
Proposed a Video classification method by training RNNs on dense trajectory data points. Video Data was extracted by sampling dense points from each frame and tracking them using the optical flow. We tested on the UCF11 dataset.
Used multi-resolution to overcome non availability of GPU training time. We trimmed the data by reducing each video to two smaller videos; one cropped to central region and other is original video at a lower resolution. The multi resolution model trained much faster and performance was at par.

AWARDS AND SCHOLASTIC ACHIEVEMENTS	Academic Excellence Award at IIT Kanpur, 2013-14.	
	Selected from IIT Kanpur for 5th South Asia Workshop on Research Frontiers in Computing 2015 at School of Computing, National University of Singapore.	
	Charpak Scholar, French Govt. Scholarship for semester abroad in France, February - June 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.	
	Excellence in Academics (2008, 2009, 2011) at Sanskriti School.	
	Placed 2nd, State Chess Tournament 2006, New Delhi.	
PROFESSIONAL EXPERIENCE	Product Engineer - Sprinklr	August 2015 - Present
	I work on integration of Social Media Advertising and Tracking channels (LinkedInAds) into the core Sprinklr platform. Additionally I use Data Mining and Semantic Analysis for probabilistic predictions of tasks such as budget optimization and Trend discovery.	
	Research Internship - Samsung Research Institute	Summer 2014
	I implemented a word prediction application for Bangla-language using Neural Networks and improved on HMM models. Used the transcription configuration, enabling the system to predict unseen words (not in the training set) and tested the app on Samsung GT-N7100.	
	Development Internship - Tata Consultancy Services	August 2014 - December 2014
	We developed a transparent system for the Public Distribution System, Civil Supplies Department of India. We designed and created a Biometric Verification application on a portable Hand Held Device deployed across the State Ration shops.	
PAPERS IN PREPARATION	R. Tripathi, P.P.Roy; Recurrent Neural Networks based Indic word-wise script identification using character-wise training	
TEACHING EXPERIENCE	Teaching Assistant, English Proficiency Program at IIT Kanpur	January 2015 - April 2015
TECHNICAL SKILLS	Languages: C, C#, C++, Python, Java, MATLAB, L ^A T _E X, SQL, Verilog, shell script. Other : Linux, Mac OS, Windows OS.	
SELECT MINOR PROJECTS	Speech Based Robot Control	January 2015 - April 2015
	Created Speech based end-to-end module for control of articulated robots. Employed Google ASR, Semantic Role Labeling and executed on a Nao Robot	
	Generating Image Descriptions	September 2013 - November 2013
	Implemented a classifier to map computer vision to natural language generation modeled via a latent Meaning space.	
	Application development, Microsoft Code.Fun.Do	Summer 2013
	Created Windows 8 Phone application, a Runner Game named Sheep On Croc 3D using XNA 4.0 Windows Game Engine and Blender3D for character modeling.	
	Hexapod, Robotics Club at IIT Kanpur	Summer 2012
	Developed a Hexapod, a six-Legged all-terrain Robot with 18 degrees of freedom.	

COURSEWORK	Artificial Intelligence	
	Natural Language Processing	
	Machine Learning for Computer Vision	
	Robotics	
	Robot Manipulator: Dynamics and Control	
	Probability and Statistics	
	Linear Algebra	
	Abstract Algebra	
LEADERSHIP EXPERIENCE	Logic Theory	
	Student Guide, IIT Kanpur	July 2012 - April 2013
	Assisted a group of 7 first year students with their transition to life at IIT Kanpur.	
	Instructor, Nation Social Service	July 2011 - April 2015
	Taught basic sciences at the school for the underprivileged at IIT Kanpur.	
	Leadership Program, Sanskriti School	July 2006 - April 2009
	Participated in community service by teaching at Umang, a school for the underprivileged.	