Sanchit Arora

CONTACT INFORMATION

801 2nd Ave N
Unit 103
Seattle, WA 98109 USA

Mobile: +1-215-350-8913
E-mail: sanchitarora13@gmail.com
sanchitarora.github.io

PROFESSIONAL EXPERIENCE

Axon — **Seattle, WA**
Lead Researcher, Axon AI — *Februrary, 2017 - present*

- Aligned company to lay the groundwork for AI integration into various products
- Axon selected as official AI partner by LAPD based on demonstration of technology and roadmap
- Shipped AI features in multiple product lines across Axon

Dextro — **New York City, NY**
Co-Founder, CTO — *September, 2012 - January, 2017*

- Video content understanding using Sight, Sound and Motion
- Real time video analysis on Periscope live streaming content
- Leading a team of 7 researchers and engineers
- Acquired by Axon as a strategic technology investment

Microsoft India Development Center — **Hyderabad, India**
Software Development Engineer — July, 2009 - December, 2010

- Shipped **Microsoft Office Mobile 2010** on **Windows Phone 7**

Yahoo! Software Development Pvt. Ltd. — **Bangalore, India**
Software Development Intern — May, 2008 - July, 2008

- Surveyed, analyzed and assessed different **Online Learning techniques** for data analysis
- Prototyped a technique incorporating key features of good algorithms with promising initial results

EDUCATION

The University of Pennsylvania, — **Philadelphia**
M.S.E., Robotics and Artificial Intelligence — Jan 2011 - May 2013

Indian Institute of Technology, — **Delhi**
B.Tech., Computer Science and Engineering — Aug 2005 - May 2009

AWARDS

Founder's Fund Fellow, **State of Connecticut**, 2013
Summer Fellow, **Yale Entrepreneurial Institute**, 2013
Undergraduate Research Award by Industrial R&D unit, IIT Delhi, 2007
One of ten to receive full **Aditya Birla Merit Scholarship**, 2005
Placed 20th across the country, IIT-Joint Entrance Exam, *(#1, Delhi Region)*, 2005
3rd Position, CRO game design competition, IIT Bombay, Techfest, 2007
Gold Medalist at the National Level, Physics Olympiad (INPhO, 2005)
Ranked in **Top 30**, Delhi Region, **Regional Mathematical Olympiad**, 2005
1st Position, Digital Image Processing Competition, IIT Delhi, Tryst, 2008

PROJECTS

School of Engineering & Applied Sciences — **UPenn, Philadelphia**
Upenn Space Mobile and Autonomous Robotics Team — January 2012 - July 2012

- Student led initiative to build autonomous robots for search and retrieval tasks
- Led the design and development of the autonomous vision system
- One of only two robots with vision and navigation capabilities at the WPI Robot Sample Return Challenge
- Only team at NASA RASC-AL Robo-ops challenge with automated vision fallback systems

ABU Robocon — Sept 2006 - March 2009

- Navigation specialist, Team **India**, Asia-Pacific Robotics Challenge, Vietnam
- Winner at the DD-MIT Robocon 2007 among 25 teams from all over India
- Designed and implemented navigation algorithms for autonomous robots

Augmenting Stereo SLAM with Line features — *May, 2011 - December, 2011*

- Incorporated fast line features to enhance SLAM structure

- Used FAST features and Brief Descriptors for feature points
- Interpolated edges by iterative edge point determination

Select Computer Vision Projects *2008 - Present*

- Augmenting Stereo SLAM with line features
- Automatic Image Mosaicing
- Non-Photorealistic image rendering
- Computing Image Analogies using multi level image features
- Edge detection techniques using Non-Maximal Suppression and hysteresis

Select Machine Learning Projects *2008 - Present*

- Gesture Recognition using IMU data
  - Trained Left-Right HMM's for a set of gestures using EM to optimize each model
  - Filtered IMU data with a UKF before training
- Amazon review sentiment analysis
  - Reduced dimensionality by stemming followed by PCA
  - Tried techniques like regression, multiple SVM's, multi-level SVM's
- Character Prediction using Hidden Markov Models
- Document classification using SVM's
- Digit recognition using Adaboost on decision stumps
- Digit recognition using Decision trees
- Inverted Pendulum Stabilization

Machine Perception Projects *January, 2011 - May, 2011*

- 3D reconstruction using stereo image pairs under epipolar constraints
- Image rectification tools in MATLAB using manual datapoints
- Camera Stabilization using weighted image flows

Dept. of Computer Science and Engineering **IIT, Delhi**

Digital Image Analysis Projects *August, 2008 - December, 2008*

- Non-Photorealistic image rendering using pointillist and brushed styles
- Computing Image analogies using multi level image features

Multi Robot System Applications *Aug, 2008 - May, 2009*

- System of robots cooperating to allocate and accomplish different tasks
- OS abstraction to manage resources and tasks to achieve an end goal

Inverted Pendulum Stabilization *Feb, 2008 - Apr, 2008*

- Explored machine learning techniques for control of a pendulum and cart system
- Utilized Neural Networks and SVMs as building blocks
- Successfully simulated results applicable to robotic control applications

Reverse Tracko Plugin *May, 2007 - Apr, 2008*

- Designed a novel system for car-reversing and parking using camera and mirror combination
- Developed a low cost prototype on ARM9 using the OpenCV library
- Received the prestigious Summer Undergraduate Research Award for the same

Adaptive Corridor Energy Saving System (ACESS) *(Aug, 2007 - Dec, 2007)*

- Developed an embedded solution for saving energy in power hungry building corridors
- Built a prototype using ARM7, RF nodes and motion detectors
- Prototype demonstrated 80% reduction in power consumption during non-rush hours

Virtual Orchestra *(Aug, 2006 - Dec, 2006)*

- Designed an audio cum visual software for real-time simulation of various musical instruments
- System useful for teaching children to play music

Technical Skills	Python, C++, Tensorflow, Keras, PyTorch, Caffe, CUDA, OpenCV, bash scripting, MATLAB, C, Ruby, SML, GNU make, VCS (Git, SVN), LaTeX and others
Others	Invited Speaker, NVidia GTC DC, 2017 Online Invited Speaker, AI With the Best, 2017, ML Track Co-organizer, NYC Computer Vision Meetup Volunteer, NYC FIRST Robotics Guest contributor, Opinion Circuit