

# Sarthak Ahuja

CONTACT INFORMATION	TF09, IBM India Research Lab New Delhi 110070, India	sarthakahuja.org sarthakahuja@outlook.com
EDUCATION	<b>Indraprastha Institute of Information Technology</b> , Delhi	
	Bachelor of Technology (Honors), Computer Science, August 2016	CGPA: 9.1
	<b>Apeejay School</b> , Pitampura, New Delhi	
	Senior School, Science, CBSE, May 2012	93.2%
	High School CBSE, May 2010	95.0%
EXPERIENCE	<b>Software Engineer (Research), IBM Research</b> July 2016 onwards Member of the Collaborative Cognition group (earlier known as Analytics and Optimization), working on the machine learning and collaborative decision making component of <b>IBM Watson Recruitment</b> . <b>Research Associate, PreCog Research Group, IIIT-Delhi</b> May 2016 to July 2016 Led the work on patch based visual summarization of world events on social media - #VisualHashtags; Contributed as a Software Developer on Project-O, Precog's social media analytics platform. <b>Research Intern, Infosys Center for AI, IIIT-Delhi</b> December 2014 to May 2016 Explored modern SLAM algorithms and built systems for visual positioning and navigation in wearable cameras and vehicle dashboard cameras; Core member of IIIT-Delhi's Autonomous Car Team - <b>Swarath</b> . Led the development of the perception module and the test suite. <b>Head, Product(Web), Meri Awaaz</b> September 2014 to August 2016 Founding member at a start up aimed at bringing back focus on a politician/candidate's work by developing a constituency level complaint redressal and interaction platform.	
WORKSHOPS	<b>International Institute of Information Technology</b> , Hyderabad Summer School, Deep Learning in Computer Vision	July 2016
SELECTED PROJECTS	<b>Cogniculture</b> Jan 2017 onwards Exploring socio-cognitive systems capable of acquiring and demonstrating cultural awareness and adaptability skills necessary to self-sustain, survive and evolve alongside human counterparts. <b>IBM Watson Recruitment</b> July 2016 onwards Developing the cognitive component of IBM's recruitment offering; Increasing hiring efficiency by predicting the probability of success of a prospective candidates using features mined from requisitions and resumes; Developing a collaborative decision making pipeline to resolve candidate preference among various stake holders/cognitive agents through sequential game play. <b>#VisualHashtags</b> May 2016 to May 2017 Formulated a novel method for visual summarization of social media events in the form of images patches; Proposed system incorporates a multi-stage filtering process and social popularity based ranking to achieve improved coverage on politics and sports datasets. <b>Visual Odometry based Driver Assistance System</b> January 2015 to May 2016 Built a navigation system to carry out robust visual positioning for a car by using a generated odometry on encountering an erratic GPS signal; Built the apparatus for the dashcam using a point grey camera and an intel NUC running an implementation of the LSD-SLAM algorithm. <b>Distress Detection</b> August 2014 to July 2015 Created an android application that uses a two-stage supervised learning algorithm to robustly detect audio based distress activity in multiple urban contexts; Developed a web dashboard to monitor the generated alarms and employ online learning to reduce false alarms by mining occurrence patterns. <b>Multi-Sensor Data Fusion for Human Activity Recognition</b> August 2015 to November 2015 Created a system to perform data fusion between two approaches for human activity detection, accelerometers and egocentric cameras, to improve the overall performance of the system. <b>Multi-Agent Path Planning(MAPP) for Warehouse Butlers</b> August 2015 to November 2015 Implemented the MAPP Algorithm by Ko-Hsin Cindy Wang and Adi Botea in a warehouse simulation to identify potential points of failure in warehouse layouts, affecting the quality of the service. <b>Kinect Driven 2D Mesh Animation with OpenGL</b> August 2015 to November 2015 Created an application in QT to animate a 2D mesh character and drive its actions through a kinect; Explored automatic rigging and skin deformation algorithms.	

PUBLICATIONS	<ul style="list-style-type: none"> <li>• <b>Ahuja, S.</b>, Mondal, J., Singh, S., George, D.; Similarity Computation Exploiting the Semantic and Syntactic Inherent Structure among Job Titles, <i>Full Research Paper at ICSOC 2017</i></li> <li>• Goel, S., <b>Ahuja, S.</b>, Subramanyam, A., Kumaraguru, P.; #VisualHashtags: Visual Summarization of Social Media Events Using Mid-Level Visual Elements, <i>Full Research Paper at ACM MM 2017</i></li> <li>• Singh, S., Chaudhuri, R., Manu Kuchhal, M., <b>Ahuja, S.</b>, Parija, G.; Multi level clustering technique leveraging expert insight, <i>Full Research Paper at JSM 2017</i></li> <li>• Pimplikar, R., Mukherjee, K., Parija, G., Vishwakarma, H., Narayanam, R., Vallam, R., <b>Ahuja, S.</b>, Chaudhuri, R., Mondal, J., Kataria, M.; Cogniculture: Towards a Better Human-Machine Co-evolution, <i>Technical Article, arXiv:1712.03724</i></li> </ul>	
PATENTS	<ul style="list-style-type: none"> <li>• Singh, S., Parija, G., Chaudhuri, R., Kuchhal, M., Kataria, M., <b>Ahuja, S.</b>; SIdéal: System and Method for Attribute Weight Induction in a Multiple Recruiter Setting Exploiting Public Goods Games Framework, <i>patent pending</i></li> <li>• <b>Ahuja, S.</b>, Mukherjee, K., Mondal, J., Singh, S.; Cogniculture based Eco-System for Multi-Viewer Smart TVs, <i>awaiting file</i></li> <li>• Singh, S., Mondal, J., <b>Ahuja, S.</b>, George, D., Medicke, J., Klabzuba, A.; System and Method to Produce Generalized Representation of Job Description Documents and Calculate Similarity Using the Representation in Recruitment Domain, <i>awaiting file</i></li> </ul>	
SELECTED HONORS AND AWARDS	<ul style="list-style-type: none"> <li>• Winning Team, Consensys Award at HackInOut 2017, for the hack "<i>VoteChain - Blockchains for Decentralized Elections</i>".</li> <li>• Awarded the IBM Manager's Choice Award 2016 in recognized for the practice - <i>Restlessly Reinvent IBM and Ourselves</i>.</li> <li>• Awarded the <i>All Round Performance Medal</i> for the overall performance in curricular and extra-curricular activities in the B.Tech. (CSE) program 2016.</li> <li>• First Prize in the Technical Paper Presentation event at Cogenesis 2016, Delhi Technological University for "<i>Multi-Sensor Data Fusion for Human Activity Recognition</i>".</li> <li>• Best Demo Award in the Elevator Pitch Event at IIIT-Delhi Research Showcase 2015 for "<i>Distress Detection</i>".</li> </ul>	
TEACHING EXPERIENCE	<b>Teaching Assistant</b> CSE101 - Introduction to Programming, IIIT-Delhi CSE102 - Data Structures and Algorithms, IIIT-Delhi CSE201 - Advanced Programming, IIIT-Delhi CSE344/544 - Computer Vision, IIIT-Delhi	Monsoon 2014 Winter 2015 Monsoon 2015 Winter 2016
SKILLS	<b>Concepts and Technologies</b> <ul style="list-style-type: none"> <li>• Deep Learning, Computer Vision, Natural Language Processing, Game Theory, Cognitive Architectures, Statistical Data Science, Reinforcement Learning, Probabilistic Graphical Models</li> </ul> <b>Programming Languages</b> <ul style="list-style-type: none"> <li>• Matlab, C++, Python, Java, PHP, Javascript, R, SQL</li> </ul> <b>Tools and Libraries</b> <ul style="list-style-type: none"> <li>• ROS, SPSS, AnyLogic, SOAR, ILOG, Android SDK, Apache Storm, Apache Spark, Pandas, OpenCV, OpenGL, Unity 3D, Keras, Theano, Apache Kafka, Cloudbant</li> </ul>	
VOLUNTEER EXPERIENCE	<b>Communication and Information Management, AIESEC DU</b> Worked as a Team Leader at a youth organization aimed at providing young people with leadership development through cross-cultural internships.	August 2013 to April 2014
ORGANIZATIONS AND ACTIVITIES	<ul style="list-style-type: none"> <li>• Elected Member of the <b>Student Council</b>. April 2015 to April 2016</li> <li>• Founder and Admin <b>Ink.</b> (Design Club) August 2014 to May 2016</li> <li>• Admin <b>Foobar</b> (Programming Club) January 2015 to January 2016</li> <li>• Organizing Team IIIT-Delhi Research Showcase 14 and 15 February 2014 and February 2015</li> <li>• Core Organizing Committee <b>Esya 14</b> (Annual Technical Festival) May 2014 to September 2014</li> </ul>	