Sarthak Ahuja

CONTACT INFORMATION	Carnegie Mellon University 5000 Forbes Ave, Pittsburgh, PA 15213	sarthakahuja.org sarthaka@andrew.cmu.edu

EDUCATION

Carnegie Mellon University, Pittsburgh

Master of Science, Robotics, August 2020*

Indraprastha Institute of Information Technology, Delhi

Bachelor of Technology (Honors), Computer Science, August 2016 — CGPA: 9.1

Apeejay School, Pitampura, New Delhi

Senior School, Science, CBSE, May 2012 — 93.2%

High School CBSE, May 2010 — 95.0%

EXPERIENCE

Software Engineer (Research), IBM Research — July 2016 to July 2018
Member of the Collaborative Cognition group (earlier known as Analytics and Optimization), working on the machine learning and collaborative decision making component of IBM Watson Recruitment.

Research Associate, PreCog Research Group, IIIT-Delhi — 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.

Research Intern, Infosys Center for AI, IIIT-Delhi — 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 - Swarath. Led the development of the perception module and the test suite.

Head, Product(Web), Meri Awaaz — 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

International Institute of Information Technology, Hyderabad — July 2016
Summer School, Deep Learning in Computer Vision

SELECTED PROJECTS

IBM Watson Recruitment — July 2016 to July 2018
Developed the cognitive component of IBM's recruitment offering; Increased hiring efficiency by predicting the probability of success of a prospective candidates using features mined from requisitions and resumes; Developed a collaborative decision making pipeline to resolve candidate preference among various stake holders/cognitive agents through sequential game play.

#VisualHashtags — 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.

Visual Odometry based Driver Assistance System — 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.

Distress Detection — 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.

Multi-Sensor Data Fusion for Human Activity Recognition — 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.

Multi-Agent Path Planning(MAPP) for Warehouse Butlers — 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.

Kinect Driven 2D Mesh Animation with OpenGL — 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	• Vallam, R.*, **Ahuja, S.***, Chaudhuri, R., Pimplikar, R., Parija, G.; Interactive POMDPs for Social Decision Making with Dynamic Focus on Agents, *Submitted*

- Mondal, J., **Ahuja, S.**, Singh, S., Mukherjee, K., Parija, G.; Benchmarking of a Novel POS Tagging Based Semantic Similarity Approach for Job Description Similarity Computation, *ESWC 2018*
- **Ahuja, S.**, Mondal, J., Singh, S., George, D.; Similarity Computation Exploiting the Semantic and Syntactic Inherent Structure among Job Titles, *ICSOC 2017*
- Goel, S., **Ahuja, S.**, Subramanyam, A., Kumaraguru, P.; #VisualHashtags: Visual Summarization of Social Media Events Using Mid-Level Visual Elements, *MM 2017*
- Singh, S., Chaudhuri, R., Kuchhal, M., **Ahuja, S.**, Parija, G.; Multi level clustering technique leveraging expert insight, *JSM 2017*

PATENTS

- Singh, S., Parija, G., Chaudhuri, R., Kuchhal, M., Kataria, M., **Ahuja, S.**; SIdeal: System and Method for Attribute Weight Induction in a Multiple Recruiter Setting Exploiting Public Goods Games Framework, *patent pending*
- Singh, S., Mondal, J., **Ahuja, S.**, 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, *patent pending*
- **Ahuja, S.**, Mukherjee, K., Mondal, J., Singh, S.; App-lause - Automatic Audience Generation and Simulation for Immersive Rehearsals, *patent pending*

SELECTED HONORS AND AWARDS

- Winning Team, Consensys Award at HackInOut 2017, for the hack *"VoteChain - Blockchains for Decentralized Elections"*.
- Awarded the IBM Manager's Choice Award 2016 in recognized for the practice - *Restlessly Reinvent IBM and Ourselves.*
- Awarded the *All Round Performance Medal* for the overall performance in curricular and extra-curricular activities in the B.Tech. (CSE) program 2016.
- First Prize in the Technical Paper Presentation event at Cogenesis 2016, Delhi Technological University for *"Multi-Sensor Data Fusion for Human Activity Recognition"*.
- Best Demo Award in the Elevator Pitch Event at IIIT-Delhi Research Showcase 2015 for *"Distress Detection"*.

TEACHING EXPERIENCE

Teaching Assistant

CSE101 - Introduction to Programming, IIIT-Delhi	Monsoon 2014
CSE102 - Data Structures and Algorithms, IIIT-Delhi	Winter 2015
CSE201 - Advanced Programming, IIIT-Delhi	Monsoon 2015
CSE344/544 - Computer Vision, IIIT-Delhi	Winter 2016

SKILLS

Concepts and Technologies
- Deep Learning, Computer Vision, Natural Language Processing, Game Theory, Cognitive Architectures, Statistical Data Science, Reinforcement Learning, Probabilistic Graphical Models

Programming Languages
- Matlab, C++, Python, Java, PHP, Javascript, R, SQL

Tools and Libraries
- ROS, SPSS, AnyLogic, SOAR, ILOG, Android SDK, Apache Storm, Apache Spark, Pandas, OpenCV, OpenGL, Unity 3D, Keras, Theano, Apache Kafka, Cloudant

VOLUNTEER EXPERIENCE

Communication and Information Management, AIESEC DU   August 2013 to April 2014
Worked as a Team Leader at a youth organization aimed at providing young people with leadership development through cross-cultural internships.

ORGANIZATIONS AND ACTIVITIES

• Elected Member of the Student Council.	April 2015 to April 2016
• Founder and Admin Ink. (Design Club)	August 2014 to May 2016
• Admin Foobar (Programming Club)	January 2015 to January 2016
• Organizing Team IIIT-Delhi Research Showcase 14 and 15	February 2014 and February 2015
• Core Organizing Committee Esya 14 (Annual Technical Festival)	May 2014 to September 2014