Pulkit Verma Email : pverma13@asu.edu
https://pulkitverma25.github.io/

Education

- **Arizona State University** Tempe, USA
  Ph.D. in Computer Science; GPA: 4.00/4.00 *Aug. 2018 – Present*
- **Indian Institute of Technology Guwahati** Guwahati, India
  Master of Technology in Computer Science and Engineering; GPA: 9.07/10.00 *Aug. 2013 – May 2015*
- **Shri Vaishnav Institute of Technology and Science** Indore, India
  Bachelor of Engineering in Information Technology; Percentage 69.88 *Sep. 2007 – June 2011*

Experience

- **Arizona State University** Tempe, USA
  Graduate Research Assistant *Aug 2018 - Present*
  - **AAIR Lab**: Working as research assistant in Autonomous Agents and Intelligent Robotics lab at School of Computing, Informatics, and Decision Systems Engineering, ASU.
- **NetApp India Pvt. Ltd.** Bengaluru, India
  Storage Efficiency Developer *July 2015 - July 2018*
  - **Workload Prediction**: Predicting workload on a storage volume, based on I/O patterns for All Flash systems.
  - **File and Volume Clones**: Developed features and managed issues related to file and volume clones on UNIX-based NetApp proprietary WAFL file system so as to improve the storage efficiency of data.
- **Indian Institute of Technology Guwahati** Guwahati, India
  Teaching Assistant *Aug 2013 - May 2015*
  - Teaching and assessment tasks including tutorials and seminars so as to help in delivery of subjects at undergraduate level.
  - Courses: Speech Processing; Labs: Software Engineering Lab, Data Structures Lab, and Computer Graphics Lab.
- **Tata Consultancy Services Ltd.** Pune, India
  iOS Applications Developer *Mar 2012 - July 2013*
  - **Portfolio Management Applications**: Built applications for iPhone and iPad and developed tools so as to analyze the user portfolio in an interactive way.
  - **Cross-platform Applications**: Cross-platform mobile application development of mobile applications supported on both Android and iOS.

Publications

- Pulkit Verma, and Pradip K. Das. *A Comparative Study of Resource Usage for Speaker Recognition Techniques.* 2016 International Conference on Signal Processing and Communication. December 26-28, 2016, Noida, India.
- Alok Shankar Mysore et al. *Investigating the Wisdom of Crowds at Scale.* 28th ACM User Interface Software and Technology Symposium, November 08-11, 2015, Charlotte, USA. [Poster]
- Pulkit Verma, and Pradip K. Das. *i-Vectors in Speech Processing Applications: A Survey.* International Journal of Speech Technology. Springer US. 2015.
- Mayank Gupta, Pulkit Verma, Tuhin Bhattacharya, and Pradip K. Das. *A Mobile Agents based Distributed Speech Recognition Engine for Controlling Multiple Robots.* 2015 Conference on Advances In Robotics, 2nd International Conference of Robotics Society of India. July 02-04, 2015, Goa, India.
- Pulkit Verma, Mayank Gupta, Tuhin Bhattacharya, and Pradip K. Das. *Improving Services using Mobile Agents-based IoT in a Smart City.* 2014 International Conference on Contemporary Computing and Informatics. November 27-29, 2014, Mysore, India.

Academic Projects

- **Automatic Image Captioning** Aug 2018 - Dec 2018
  Dr. Hemanth Venkateswara, ASU
  - Generating captions using correspondance Latent Dirichlet Allocation with SIFT features.
  - Used Gibbs sampling to calculate posteriors instead of variational inference.
  - Tested the performace on Corel-5K dataset.
- **Improving Value Iteration Networks** Aug 2018 - Dec 2018
  Dr. Stephanie Gil, ASU
  - Replacing non gated RNN update in Value Iteration Networks with gated updates.
  - Using long short term memory (LSTM), gated recurrent units, and peephole-LSTM as gated update techniques.
- **Exploring the Wisdom of Crowds** Feb 2015 - Jun 2015
  Dr. Sharad Goel, Stanford University
  - The wisdom of crowd to systematically investigate the wisdom of crowds is leveraged in this project.
  - A large online experiment is developed, in which each team created a module to study the wisdom of the crowd in a specific domain.
  - The results are analyzed to get a common statistical measure which can be used to predict the results correctly.
- **Resource Usage Analysis for Speech Recognition Techniques** Jun 2014 - May 2015
  Dr. Pradip K. Das, IIT Guwahati
  - i-vector, the projection of speech feature into total variability space, reduces the dimensionality of data.
  - Its impact on real time speaker recognition on devices having low resources like memory, storage space and power is analyzed in this project.
  - These results are compared with that of GMM-UBM approach and Joint Factor Analysis.
- **Artificial Immune System Based Robot** Feb 2014 - Apr 2014
  Dr. Shivashankar B. Nair, IIT Guwahati
  - a robot is designed which learns to avoid the "dynamic obstacles" using the principles of "Clonal Selection" technique used in Artificial Immune System.
  - The robot uses the concept of Reinforcement Learning to improve its accuracy in avoiding the obstacles over time.
- **Robot Cooperation through Stigmergic Communication** Jan 2014 - Feb 2014
  Dr. Shivashankar B. Nair, IIT Guwahati
  - The robots are modeled to perform sequential tasks by cooperating with each other via stigmergic communication
  - Mobile Agents were used for implementing stigmergy and for making the system decentralized.
- **HMM based Word Recognition System** Sep 2013 - Nov 2013
  Dr. Pradip K. Das, IIT Guwahati
  - Basic building blocks of a simple speech recognition system are developed in C/C++ to understand the intrinsic details of a typical recognizer.
  - The recognition system takes a spoken word as input at runtime and shows the recognized word on screen as output in real time.
- **Smart Analyzer** Sep 2010 - May 2011
  Mr. Anand Rajawat, SVITS, Indore
  - The system analyses the patterns of access of websites through a proxy server providing internet access to various other systems in an organization.
  - Given the fact that a website X is accessed from a system, the application can find the probability that a website Y will be accessed next using Apriori algorithm.

Programming Skills

- **Languages**: Python, C , C++

Courses Taken

- **ASU**: Planning and learning methods in AI; Fundamentals of Statistical Learning.
- **IIT Guwahati**: Mobile Robotics; Speech Processing; Learning with Kernels; Parallel Algorithms.
- **SVITS, Indore**: Artificial Intelligence; Soft Computing

Honors and Awards

- Fulton Schools Experiential Learning Grant, Arizona State University — Oct 2018
- Post Graduation Fellowship, Ministry of Human Resource Development, Government of India — Aug 2013 - May 2015

Extracurricular

- *Volunteer*, Child Rights and You — Sep 2016 - July 2018
- *Online Contributor*, Stanford Scholar Initiative — Jul 2016 - Dec 2016
- *Volunteer*, National Workshop on GPU Programming and Applications, IIT Guwahati — Sep 2014