**GAURAV GUPTA**
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## Education

**Rice University, Houston TX, United Sates**                                                    **(Aug 2018 - expected 2023)**
Ph.D. in Electrical and Computer Engineering

**Indian Institute of Technology, Hyderabad, India**                                                **(Aug 2010 - May 2014)**
B.Tech in Electrical Engineering, GPA :  8.23/10

## Publications/Patents

- **Siamese Networks for chromosomes classification**,  BIC, ICCV, 2017
  *Swati, G. Gupta, M. Yadav, M. Sharma, L. Vig*

- **Information Extraction from Hand-marked Industrial Inspection Sheets,** CBDAR**,** IAPR ICDAR, 2017
  *G. Gupta, Swati, M. Sharma, L. Vig*

- **Indoor Localisation and Navigation on Augmented Reality Devices,** IEEE ISMAR, 2016
  *G. Gupta, N. Kejriwal, P. Pallav, E. Hassan, S. Kumar, R. Hebbalaguppe*

- **An AR Inspection Framework: Feasibility Study with Multiple AR Devices,** IEEE ISMAR, 2016
  *R. Perla, R. Hebbalaguppe, G. Gupta, G. Sharma, E. Hassan, M. Sharma, L. Vig, G. Shroff*

- **Systems and Methods for Detecting and Tracking a Marker.** US Patent Application 20170278266, filed March 2017. Patent Pending.

- **Robust Hand Gestural Interaction for Smartphone based AR/VR Application,** IEEE WACV, 2017
  *S. Mohatta, R. Perla, G. Gupta, E. Hassan, R. Hebbalaguppe*

## Professional Experience

**TCS Innovation Labs, Delhi, India**                                                           **(July 2014 - Aug 2018)**
*Full time Researcher R&D*
*Guided by Dr. Gautam Shroff, Dr. Lovekesh Vig, Dr. Ehtesham Hassan*

- Worked on client specific projects on information extraction from scanned documents, chromosome classification and segmentation, object recognition for retail businesses, marker Based head motion tracker. Other independent projects on indoor localization system for Google Glass and augmented reality based reconfigurable Inspection Framework for head mounted devices.

- While working here I learnt key technologies of image processing (motion tracking, text detection and object detection), convolutional neural networks, machine learning, reinforcement learning, algorithms and android app development.

**Uurmi Systems, Hyderabad (acquired by Mathworks)**                                             **(May 2013-July2013)**
*Summer Internship*
*Guided by Dr. Shanti Swarup (CTO), Dr. Sumohana Channappayya*

    **"Object Tracking Algorithms" –**Implemented Kalman filter, particle filter and mean shift for target tracking in military applications. Used multi- hypothesis model for tracking multiple targets, varying in number with partial occlusion. Dataset used- aerial view of vehicles and pedestrians, IR videos.

## Technical Skills

| | |
|---|---|
| **Programming Languages, Libraries** | Python, C++, Java (basic), OpenCV, Keras |
| **Software and Tools** | Matlab, Octave, Android Studio, Visual Studio, Xcode, LaTEX |
| **OS** | Ubuntu |

## Acedemic Research

- **Rice University, Houston TX**
  Active learning for crowdsourcing.
  *Advisor- Prof. Reinhard Heckel* **(Starting Jan 2019)**

- **Indian Institute of Technology, Hyderabad**
  Low complexity N-Dimensional Matrix determinant calculator
  *Supervisor- Prof. Amit Acharyya* **(Jan 2013 - April 2013)**

  Full reference video quality assessment, using wavelets transform and sparse coded videos for matching.
  *Supervisor - Prof. Sumohana Channappayya* **(Jan 2014 - April 2014)**

  Robust speaker dependent Isolated Word Recognition system using MFCC and DTW
  *Supervisor - Prof. K. Sri Rama Murty* **(March 2013 - April 2013)**

## Relevant Coursework

**Rice University, Houston TX**

Semester 1: Random Processes, Machine Learning, Imaging though scattering medium

**Indian Institute of Technology, Hyderabad**

Calculus, Complex variables and Linear Algebra , C/C++ Programming Lab, Differential Equations, Linear Optimisation, Probability and Random Processes, Digital Signal Processing, Digital Communication, Speech Signal Processing, Digital System Design, Computer Organisation, Control Engineering, Image and Video Processing, Organisational Behaviour and Work Psychology, Economics

## Achievements

- Ranked first at Neilsen's Image Recognition Hackathon- 2017 for "Hole detection/ product out of stock" retail store challenge.
- Ranked among top 0.4 % in IIT-JEE 2010.

## Workshops/Conferences Attended

- IAPR International Conference on Document Analysis and Recognition (**ICDAR-2017**), Kyoto, Japan.

- Deep Learning and Reinforcement Learning Summer School (**DLSS, RLSS**) CIFAR CRM, organised by *Graham Taylor, Aaron Courville and Yoshua Bengio*, MILA Montreal, June 2017.

- IEEE International Symposium on Mixed and Augmented Reality (**ISMAR-2016**), Mexico.

- Summer School on Deep Learning for Computer Vision, organised by *C.V. Jawahar*, IIIT Hyderabad, July 2016.

- ACM IKDD Conference on Data Science, 2016.

- National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG), IIT Patna, 2015.

- MISP- Winter School on Machine Intelligence and signal processing, IIIT Delhi, 2014.

## Extra-Curricular Activities

- Student Coordinator at Training and Placement Cell IIT Hyderabad. *(2013-14)*
- Coordinator of **Electronics Club** IIT Hyderabad. *(2012-13)*
- Assistant coordinator of Infrastructure Management IIT Hyderabad at ELAN (Cultural Festival). *(2011-12)*
- Core member of **Astronomy Club** IIT Hyderabad. *(2011-12)*
- Participated at national level **ABU ROBOCON- 2013 Pune**. *(2013)*
- Active member of **National Service Scheme** Team-IIT Hyderabad (2011)