GUNSHI GUPTA

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EDUCATION

DELHI TECHNOLOGICAL UNIVERSITY **New Delhi, India**
Bachelor of Technology, Mathematics and Computing *2012-2016*
- Aggregate CGPA: 8.04 (First Class Division)

PROFESSIONAL EXPERIENCE

ROBOTICS RESEARCH CENTER, IIIT HYDERABAD **Hyderabad,India**
Graduate Research Assistant *February 2017 – Present*
- CAIR Project, DRDO (Defense Research and Development Orgn.) : Development of Multi Robot-SLAM framework facilitating: Incremental/Batch Optimisation, Centralised/Distributed map merging, Robot Encounter Scenarios, Visual Odometry Front-End, Dense Reconstruction. Tested on Husky UGV Robot Platform (C++, ROS, libviso2, GTSAM, g2o)
- Viewpoint Invariant Junction Recognition using Deep Network Ensembles (Submitted for WACV 2018). Currently working on an extension using generative models for localisation.

MICROSOFT CORPORATION **Hyderabad, India**
Software Developer *June 2016 – January 2017*
- Full Stack Development on Rewards/Feedback Management Applications (SQL, Javascript, C#)
- Conducted session on 'MATH behind ML' in Machine Learning workshops held for HRCELA division(~100 members). Prepared course material and assignments
- Used NLP to build modules to predict employee performance scores, summarize feedback, and recommend and extract salient keyphrases at the time of writing feedback (R, Python, Azure ML Studio)
- Developed Proof Of Concept for Feedback Application-Reinvent with Accessibility Compliant Design
- Hackathon: built a TextToGraphics generator using BoW semantic concepts and object relationships trained over MS-COCO, Component image retrieval through Microsoft's Computer Vision APIs

NAYI DISHA STUDIOS **New Delhi, India**
Computer Vision Intern *December 2015 – January 2016*
- Trained gesture/activity recognition models in Caffe, integrated with Unity3d games for Android and iOS
- Optical-Flow based motion segmentation, Player detection and tracking (OpenCV)

GRAPHICS RESEARCH GROUP , IIIT DELHI **New Delhi, India**
Research Intern *September 2015 – October 2015*
- Optimised C++ Implementation of MATLAB pipeline from 3D surface reconstruction of objects from planar cross sections (OpenGL, Blender, CGAL), based on extra constraints satisfied by object geometry

MICROSOFT CORPORATION **Hyderabad, India**
Software Development Intern *June 2015 – July 2015*
- Created windows application & hosted WebAPIs to monitor & configure usage metrics of Azure resources
- Hackathon: IR sensor based smart parking application for Microsoft campus

FRESHMONK- 91 DESIGN LABS **New Delhi, India**
Machine Learning and Image Processing Intern *December 2014 – January 2014*
- Kernel method based clustering in LAB color spaces to convert graphics to stencil screens for screen printing
- Automatic Vectorisation & gap sealing between layers using Bezier Spline processing in SVG (OpenCV, Numpy, Scipy)

PERSONAL PROJECTS

- Maximal Clique Finding, Incidence and Co-Coloring on graphs, Graph Theoretic Formulations
- Multi-View Geometry: Implementing Iterative Reconstruction from multiple sequential views

RESEARCH INTERESTS

- Computational Geometry, Multi-View Geometry, 3D reconstruction
- Multi Robot SLAM, Viewpoint Invariant Place Recognition
- Generative Adversarial Networks, Unsupervised Approaches for Learning, Deep Reinforcement Learning

COURSES

- B.Tech : Data Structures, DBMS, Probability and Statistics, Theory of computation, Operating Systems, Algorithm Design and Analysis, Computer Graphics, Software Engineering, Discrete Mathematics, Linear Algebra, Scientific Computing, Matrix Computations, Computer Architecture, Stochastic Processes, Optimization Techniques
- MOOCS : Natural Language Processing, Computer Vision, Deep Learning, Digital Signal Processing, Computational Photography, Mathematical Modeling, Artificial Intelligence for Robotics, Convex Optimization

PLATFORMS AND LANGUAGES

- C, C++, Python(+computing packages), MATLAB, C#, Javascript, SQL, HTML
- OpenCV, R, Tensorflow, GTSAM, Unity3d, ROS, PCL, OpenGL, Caffe, Cmake, Git, Micrsosoft Azure