GUNSHI GUPTA

New Delhi, India | (+91)-8800701748
gunshigupta9@gmail.com | https://github.com/gunshi | https://gunshi.github.io/

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, using Husky UGV Robot Platform (C++, ROS, libviso2, GTSAM, g2o)
- Viewpoint Invariant Junction Recognition using Deep Network Ensembles (Submitted for WACV 2018)

MICROSOFT CORPORATION **Hyderabad, India**
Software Developer *June 2016 – January 2017*

- Full Stack Development on Rewards/Feedback Management Applications (SQL, Javascript, C#)
- Teaching (Section: MATH behind ML) in ML workshops held for HRCELA division(~150 members), along with course material and assignment preparation
- POC using NLP techniques to predict employee performance, summarize feedback, recommend and extract salient keyphrases at time of writing feedback (R, Python, Azure ML Studio)
- POC for Feedback Application Reinvent with Accessibility Compliant Design
- Hackathon: Envision: TextToGraphics generator (BoW vectors, Microsoft Computer Vision API, MS-COCO,)

NAYI DISHA STUDIOS **New Delhi, India**
Computer Vision Intern *December 2015 – January 2016*

- Gesture/Activity recognition modules integrated with Unity3d games (Caffe, C#)
- 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*

- Windows application & WebAPI to monitor & configure usage metrics of Azure resources
- Hackathon: IR sensor based smart parking application for Microsoft campus

FRESHMONK- 91 DESIGN LAB **New Delhi, India**
Machine Learning and Image Processing Intern *December 2014 – January 2014*

- 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
- Mathematical Expression Evaluator using Tesseract-OCR <link>
- 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 Modelling, Unsupervised Approaches for Learning

EDUCATION

DELHI TECHNOLOGICAL UNIVERSITY **New Delhi, India**
Bachelor of Technology, Mathematics and Computing, 2012-2016

- Aggregate CGPA: 8.05 (First Class Division)

COURSES

- B.Tech : Data Structures, Object Oriented Programming, 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

TOOLS

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