INDERJOT SAGGU

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EDUCATION

University of California, San Diego 2018 - 2020
Master of Science, Electrical and Computer Engineering GPA: 3.8/4.0
Machine Learning and Data Science

Indian Institute of Technology (IIT), Delhi 2014 - 2018
Bachelor of Technology, Electrical Engineering GPA: 8.5/10.0

WORK EXPERIENCE

Machine Learning Intern, Mitek Systems, Inc. Jun 2019 - Present
Document Tooling Team

- Designed ID matching tool that reduced FPs by 92% over the legacy matcher while retaining over 80% of TPs
- Tool uses computer vision algorithms like FLANN matching, histogram equalization and SSIM based image difference
- Developed novel ID segmentation algorithm based on a U-Net architecture that achieved IoU of 0.98

Graduate Research Assistant, University of California, San Diego Prof. Dinesh Bharadia, ECE, UCSD
Relative Camera Pose Estimation for Large Viewpoint Changes *Nov 2018 - Present*

- Developed end-to-end 6-DoF relative camera pose estimation technique that exploits visual cues and co-visible objects
- Proposed semantic augmented input representation and novel loss functions that imposed geometrical constraints
- Improved over the baseline for end-to-end relative pose estimation by 85% in translation and 90% in orientation error

PROJECTS

Simultaneous Localization and Mapping (SLAM) Prof. Nikolay Atanasov, ECE, UCSD
Sensing and Estimation in Robotics *Jan 2019 - March 2019*

- Implemented particle filter based SLAM using odometry, IMU and LIDAR measurements from a differential-drive robot
- Constructed a texture map by projecting colored points from RGB-D sensor onto 2D occupancy grid
- Implemented visual-inertial SLAM using Extended Kalman Filter (EKF) given data from an IMU and stereo camera

PetFinder.my : Improving Pet Adoption Rates Prof. José Unpingco, ECE, UCSD
Programming for Data Analysis *Jan 2019 - March 2019*

- Performed EDA and feature engineering on pet profiles to explore relationship between pet features and adoptability rate
- Used sentiment score as a feature for pet-description and reduced dimensionality of entire feature space using PCA
- Trained a decision tree for predicting pet-adoptability (discrete values from 0 to 4) and achieved 83% accuracy

Deep Siamese CNN for Learning Visual Similarity Dr. Raghavendra Singh, IBM Research
Fundamentals of Deep Learning *Sep 2017 - Dec 2017*

- Developed a multi-task Siamese CNN for transforming images of apparels to a latent space where images of visually similar items and same item in different poses were close together
- Created a visual search algorithm that used nearest neighbor matching on the pose-invariant embedding space for finding stylistically similar products

TECHNICAL SKILLS

Programming Languages Python, C/C++, MATLAB, OpenMP
Tools Pytorch, Tensorflow, Git, Linux, Docker, Kubernetes

CO-CURRICULAR ACTIVITIES

- *Teaching Assistant*: **Graduate course on Machine Learning for Image Processing** (Spring 2019) : Designed final quiz and a project on Neural Style Transfer using Cycle-GAN
- Designated **Nikola Tesla Electrical Engineering Scholar** and offered $2500 scholarship by Columbia University
- *Technical Secretary*: Electrical Engineering Society (EES), IIT Delhi 2016-17