ASHLESHA CHAUDHARI

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EDUCATION

MS in Artificial Intelligence, Boston University, Boston MA *Sep 2021 – Jan 2023*
Relevant courses: Machine Learning, Natural Language Processing, Computer Vision, Deep Learning, Cloud Computing

B.Eng. in Computer Science, Cummins College of Engineering for Women, Pune, India *Jul 2013 – May 2017*
Relevant courses: Programming and Data Structures, Algorithms, Object-Oriented Programming, Software Engineering, Operating Systems, Probability and Statistics, Multivariate Calculus, Linear Algebra

TECHNICAL SKILLS

Programming Languages- Python, C++, C, Java, R, Shell scripting, C#, Matlab | **Computer Vision-** Image Processing, 3D Object detection and tracking, Trajectory estimation, Lane detection, Instance Segmentation, Visual Odometry, 3D Perception, 3D Point Clouds, 3D Pose estimation, Graph Convolutional networks, GANs, ROS | **Software Engineering-** Object-oriented design, Design Patterns, Service oriented architecture, CI/CD | **Natural Language Processing-** Language Modelling, Transformers, LSTMs, GPT-2, BERT, Spacy, NLTK | **Machine Learning-** Supervised and Unsupervised learning, Mathematics, Predictive and Statistical Modeling, Reinforcement learning, Time series analysis, Causal analysis **| ML Tools-** PyTorch, TensorFlow, Keras, Scikit Learn, OpenCV, OpenCL, OpenGL, QT, Cuda, Numpy, Pandas | **Data Visualization Tools-** Tableau, MS Power BI, Matplotlib, Seaborn | **Database Tools and Technologies-** MySQL, NoSQL, MongoDB, Data Mining | **Distributed Systems and Cloud-** AWS EC2, Map Reduce, Kubernetes, Linux | **Management Tools-** Jenkins, Maven, JIRA, GitHub, git

WORK EXPERIENCE

BOSTON UNIVERSITY- Research Assistant, Computer Vision *Jun 2022 – Present*
- Conducting research on Set-to-Set metric learning methods and devising new approaches to enhance the performance of Set based tasks using Set Transformers as the baseline
- Evaluating the newly developed approaches on Outfit recommendation, 3-D shape recognition, Point Cloud classification, Multiple instance learning, Person Re-Identification tasks
- Parallelly working on enhancing the results of Voxel Set Transformer for 3D object detection from Point clouds

BOSTON UNIVERSITY- NLP Intern, BU Spark *Sep 2022 – Nov 2022*
- Classifying syllabi into Public Interest Technology (PIT) and non-PIT by fine-tuning NLP models like LongFormer, BERT

SAP LABS, India - Developer Associate *Aug 2017 – Oct 2018*
- Developed Java applications for SAP ASE's JDBC Driver (jConnect)
- Optimized the codebase by 56% by performing thorough complexity analysis, implementing design patterns
- Developed crucial features such as Connection Pooling within jConnect as per customer requirements ensuring 100% timely delivery by communicating with the customers, the technical team and management whenever necessary
- Maintained all internal efficiency and quality indicators of the product, including reliability, scalability, coding standards, code coverage by writing 100+ jUnit test cases, running the regression tests
- Enhanced the existing build and test infrastructure by automating 65% of the build, test and scan jobs using shell scripts and Jenkins

ACADEMIC PROJECTS

Tracking Camera path using Monocular Visual Odometry *Feb 2022 – May 2022*
- Extracted features from the video using ORB feature detector and computed the Fundamental matrix using 8 points algorithm with RANSAC; computed Essential matrix from Fundamental matrix and given Camera calibration matrix K
- Estimated the camera centre using the Rotation and translation (R and T) matrices computed using the Essential matrix

Manipulating SGD (Stochastic Gradient Descent) with Data ordering attacks *Feb 2022 – May 2022*
- Demonstrated an attack on a Deep Learning model without modifying the underlying data; by reshuffling, reordering, and replacing batches and individual data points in the training data on CIFAR-10, CIFAR-100 datasets
- Demonstrated the attack on MobileNet and LeNet5 and Vision Transformer (ViT) models

Multilingual Emoji prediction *Feb 2022 – May 2022*
- Constructed multilingual models to predict emojis for 500K tweets in English and 100K tweets in Spanish using pretrained multilingual language models (XLM-Roberta, mulitBERT) and text generation models (GPT-2)

COVID-19 Instagram posts emotion detection *Sep 2021 – Dec 2021*
- Built an emotion detector for Instagram posts made during COVID using Naïve Bayes, Logistic Regression and BERT models trained on unstructured Twitter data (10K tweets)
- Corelated anger and fear to the presence of an east Asian person in the Instagram image
- Predicted the presence of an East Asian person by training the model on VMER and UTKFace datasets using CNN and Keras