



Education

Program	Institution	Year
M.Tech.(Computer Science & Engg.)	Indian Institute of Technology Madras	2020
B.Tech.(Computer Science & Engg.)	UIET CSJM University, Kanpur	2017
XIIth Std. - CBSE	Jawahar Navodaya Vidyalaya Etawah	2012
Xth Std. - CBSE	Jawahar Navodaya Vidyalaya Etawah	2010

Visa Inc.

- Senior Software Engineer** **Mar'23 – Current**
, Visa Direct – Backend Engineering
 - Spearheading the transformation of ISO 8583 financial messages (various MTIs) into JSON to enable easy integration for fintech partners without legacy ISO infrastructure.
 - Developing and enhancing APIs for transaction operations including pull, push, and reversal, supporting high-volume, real-time payment flows.
 - Utilizing Apache Kafka for streaming transaction data and Elasticsearch for fast, scalable querying and analysis.
- Software Engineer** **OCT'20 – Feb'23**
, Visa Direct – Backend Engineering
 - Built and maintained backend services powering Visa Direct's global push payment capabilities using Java, Spring, Maven, and Oracle.
 - Designed RESTful APIs for transaction initiation, reporting, and integration with internal and external systems.
 - Ensured high system reliability and compliance in collaboration with global partners and Visa's security and infrastructure teams.

Key Projects

- Study of Compare Less Defer More [1]** **Feb'19 – Dec'19**
Guide: Prof. V. Krishna Nandivada (IIT Madras) *M.Tech. Project*
 - Scaling value-contexts based whole-program Heap analyses.
 - Explore DATALOG language in DOOP framework.
- Parallel Programming using GPU** **Aug'16 – Apr'17**
Guide: Assistant Prof. Mohd. Shah Alam *B.Tech. Project*
 - Implementation of Matrix Multiplication with and without using Tiling on GPU.
 - Variation in Row & Column Major order and got speed up 4.6.
 - Observed the effect of variation in the Tile Sizes, Block Dimensions and Thread Dimensions on the run-time of Kernel.

Course Projects

- Search Engine For Information Retrieval** **Jan'20 - May'20**
Mentor: Associate Prof. Sutanu Chakraborti, IIT Madras *Natural Language Processing*
 - Implementation of Vector Space Model on Cranfield dataset
 - Implementation of Latent Semantic Analysis on unigrams and bigrams and analyze the synonymy and polysemy effect.
 - Implementation of Explicit Semantic Analysis[2] based on data from Wikipedia[3].
- Image Classification using Convolution Neural Networks(CNN)** **Jan'20 - May'20**
Mentor: Prof. C. Chandra Sekhar, IIT Madras *Deep Learning*
 - Trained CNN model to learn image features and classify them.
 - Abstract Feature visualization and Guided Backpropagation was carried out.

- **Random Forest implementation [4]**

Mentor: Assistant Prof. Pratyush Kumar

Apr'19
GPU(CUDA & C)

- Iterative Dichotomizer3(ID3) Algorithm was used to create the Decision Trees.
- Shared Memory, Atomic Operation, Parallel Reduce Operations (Max,Sum) & Task Level Parallelism were implemented.
- Speedup of 3.3 with 78% accuracy on Data [5] was achieved.
- Bit-bucket Repository [6]

- **Code Instrumentation**

Mentor: Assistant Prof. Rupesh Nasre

Feb'19 - Apr'19
Program Analysis(LLVM & C++)

- Built a LLVM pass to perform Code Instrumentation to remove Unsafe Pointer Dereferences such as Null Pointers and Dangling Pointers and return a valid Executable Code.

- **Handwritten Character Recognition and Spoken Digit Recognition**

Mentor: Prof. C. Chandra Sekhar

Nov'18 - Dec'18
Machine Learning

- Time based features such as curvature and slope combined with spatial features were used to extract features for training HMMs for online handwritten Telgu characters.
- Trained HMMs on MFCCs (Mel-frequency Cepstral Coefficients) extracted from the training data for Isolated and Connected Spoken digit Recognition.

- **Comparison of Classification models on Synthetic and Real Data**

Mentor: Prof. C. Chandra Sekhar

Oct'18 - Dec '18
Machine Learning

- Comparison of models such as GMM, Logistic Regression, SVM, perceptron, MLFFNN on the basis of accuracy for real and Synthetic datasets.

- **2-Class Classification using Bayes Classifier**

Mentor: Prof. Sukhendu Das

Sep'18 - Oct'18
Linear Algebra and Random Processes

- Given number of data points and number of dimensions of the data classified the data into two class, and reported the training and testing accuracy's.
- No inbuilt functions were used to classify the data, where the data had 70,000 values each having 100 features.

- **Dimensionality Reduction using PCA**

Mentor: Prof. Sukhendu Das

Oct'18 - Nov'18
Linear Algebra and Random Processes

- Reduced the dimensions of the given data set having over 70k values approximately using PCA.
- Further the reduced dimensional data was classified using Bayes Classification, without using any inbuilt function.

Course Work

- **Machine Learning:** Pattern Recognition & Machine Learning, Deep Learning, Linear Algebra & Random Processes, Natural Language Processing, Data Mining.
- **Algorithms:** Advanced Data Structures & Algorithms.
- **Systems:** GPU(Parallel Programming), Program Analysis.
- **Computer Science:** Digital System Testing & Testable Design, Theories & Applications of Ontology.
- **Lab:** Advanced Programming Lab.

Technical Skills

- **Programming Languages:** Python, C, C++(STL), JAVA, DATALOG, MATLAB[®], Assembly Programming(8085).
- **Tools and Technologies:** CUDA, LLVM, Eclipse, NetBeans, L^AT_EX, DOOP, TensorFlow.
- **Others:** MySQL, XML, XQuery, XPath, OWL.

Position of Responsibility

- **Teaching Assistant, IIT Madras**

- Departmental Computing Facility Lab
- Introduction to Programming
- Theories and Applications of Ontology

(Aug'18-Dec'18 & Jan'19-May'19)
(Jul'19-Dec'19)
(Jan'20-May'20)