Masavir Khliq

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EDUCATION

Indian Institute Of Science(IISc) — Bangalore, India
Masters of Technology - Computer Science and Automation; — *Aug 2021 - ongoing*
Courses: *Machine Learning for signal Processing, Computing fot AI and ML, Analysis Of Algorithms, Deep Learning for NLP, Game Theory, Computer architecture ,Graphics and Visualization, Cryptography , Distributed Computing Systems, Computational Topology*

Punjab Technical University — Bathinda Punjab, India
Bachelor of Technology - Computer Science and Engineering; GPA: 8.48 — *Aug 2016 - July 2020*
Courses: *Operating Systems, Data Structures, Analysis Of Algorithms, Artificial Intelligence, Compiler Design,Automata theory,Discerete Mathematics, Computer Networks, Databases*

SKILLS SUMMARY

- **Languages**: Python, C/C++,JAVA
- **Packages**: NumPy,Matplotlib,Seaborn,Pandas,Scikit, NLTK, SpaCy,Pytorch, TensorFlow, Keras
- **Databases**: MySQL
- **Visualization**: Tableu[Filters, Data Visualization, Dashboards and Story Telling],Exploratory Data Analysis
- **Machine Learning**: PCA, t-SNE, Linear/Logistic Regression, Decision Trees, Random Forest, KNN, SVM, NaiveBayes.
- **Deep Learning**: MLP, CNN,LSTM,GANs,Encoder-Decoder Models,Attention Models,Transformers and BERT,Object detection
- **Soft Skills**: Leadership, Event Management, Writing, Public Speaking

EXPERIENCE

Mindtree
AI Research Scientist (Intern) Received Pre-Placement Offer — *May 2022 - Aug 2022*
- **Adversarial Generation of Synthetic Tabular data**:
  -Found gaps in current research and proposed new techniques.
  -Implemented SOTA methods for Tabular data generation using GANs
  -Presented my work to MindTree's Research team

Educasheer Ed-Tech Non-Profit Organisation
Founder
- **About EduCasheer**: EduCasheer is a non-profit ED-Tech Startup. I handled technical as well as managerial side at EduCasheer.
- **Purpose of EduCasheer**: The purpose of educasheer is to compensate education loss due to ongoing chaos in Kashmir Valley.EduCasheer
- **Impact**: Courses we created include machine learning, computer programming. We have impacted a lot of students.

PROJECTS

- **Privacy Preserving Recommendation Systems using Matrix Factorization**
  Prof. Arpita Patra: — Jan 2023- June 2023
  - Dataset name : Movielens, Netflix
  - User-rating matrix was factorized by using ALS algorithm
  - ASTRA protocol was used to do the private computation

- **Human Activity prediction**
  Applied Roots: — Sep. 2022
  - Human activity dataset from kaggle was used.
  - Different Models were trained and activity was predicted.

- **Generating Synthetic Tabular Data using GANs**
  Amit Modak, MindTree: — May 2022- July 2022
  - Tabular data was given with discrete and continuous columns
  - Each row is treated as a joint distribution.
  - Data was cleaned and CTGANs were used to adversarially train the model.
  - Model output was synthetic data, which mimicked the actual distribution

- **Classification of audio files using GMM**
  Prof. Sriram Ganapathy, Machine Learning for signal Processing: — Mar. 2022
  - Data-set contained Audio files which were either music or speech files.
  - Spectrogram features were generated using log magnitude with a 64 component magnitude FFT.
  - Two GMM models were trained with k-means initialization (for each class) separately each with
  (i) 2 mixtures with diagonal covariance,
  (ii) 2 mixtures with full covariance and
  (iii) 5-mixture components with diagonal/full covariance respectively on given data.
  -Using this built classifier, classification of files was done.

- **Unsupervised Sentiment Analysis**
  Prof. Sriram Ganapathy, Machine Learning for signal Processing: Mar. 2022
  - Dataset name : movie review data (each line is an individual review).
  - Average TF-IDF featureas a document embedding vector was used.
  - PCA was used on embedding vector to reduce dimensionality to 10 dimensions.
  - Used 2GMM with diagonal covariance to identify label of the review.

- **Facial Emotion Recognition in a live video**
  Prof. Sriram Ganapathy, Machine Learning for signal Processing: Apr. 2022
  - using CNN's in a live video face expression was detected
  - Intensity of facial emotional was also computed

- **Optimizing performance of Checkered Matrix Multiplication**
  Prof. Arka Prava Basu, Computer architecture: Sep. 2021
  - Perf analysis was done to find performance bottlenecks.
  - CMM was optimized by using cache locality.
  - parallelism was achieved on GPU using CUDA

ACHIEVEMENTSS AND AWARDS

- **Reliance Foundation Scholarship for Academic Excellence for the year 2021-22**
  The Reliance Foundation Scholarships is a merit-based scholarship enabling India's brightest youth to become the leaders of tomorrow for social good. 40 postgraduate students nationwide are awarded this scholarship.

- **Amazon Summer School - July, 2022**
  Bunch of students are selected by amazon for the ML program. The program gives engineering students in India an opportunity to learn machine learning techniques from tenured scientists at Amazon.

- **Student ambassador in EECS-Division for GATE-JAM -SEP, 2022**
  The EECS divison of IISc chose six students to address the nation's prospective research applicants. We visit universities of our nation to interact with students.

- **Founded Databased @ IISc - Nov 2022**
  It is a community of students passionate about diving deep into the world of computer science, ML and DL. Along with leading the club I also teach Applied Machine Learning and Deep Learning to the community.

VOLUNTEER EXPERIENCE

- **CSA OpenDay Core team member**   IISc Bangalore, India
  Organized the whole OpenDay Event for CSA   *Mar 2023*

- **Student Representative of CSA**   IISc Bangalore, India
  Dealt with student onboarding and taught some courses along with other people.   *July 2022 - Present*

- **Student Lead of Builders Club**   IISc Bangalore, India
  Here we conduct coding contests every saturday. Discuss ideas interact with industry leaders.   *Aug 2022 - Present*

- **Placement Coordinator of CSA**   IISc Bangalore, India
  Get in touch with companies   *Aug 2022 - Present*