Deepti Saravanan

https://www.linkedin.com/in/deepti-saravanan-103965140/
http://deeptisaravanan.github.io/

Email : ds6812@nyu.edu
Mobile : +1 (332) 207-7837

EDUCATION

- **New York University's Courant Institute - MS in Computer Science** — **2021-2023**
  GPA: 3.833 Coursework: *Deep Learning, Computer Vision, NLP, Advanced DB, Predictive Analytics*

- **Recipient of the Suzanne McIntosh Master's Research Fellowship** — **2023**
  NYU Courant

- **National Institute of Technology Trichy, India - B.Tech CSE, Mgmt Studies (Minor)** — **2016-2020**
  GPA: 8.3 CS Courses: *Machine Learning, Natural Language Processing, Image Processing*
  Management Courses: Marketing, Finance and Supply Chain Management

RESEARCH EXPERIENCE

- **Research Affiliate, NYU Courant AI Lab** — **Jan 2023 - May 2023**
  Advisor: Prof. Anasse Bari, Dept. of Computer Science, NYU Courant
  - Designing AI framework that combines active and passive surveillance
  - Application of Swarm Intelligence for effective Pandemic prediction
  - **Technologies used:** Social Media Analysis, NLP, Causal Reasoning, Nature-Inspired Optimization
  - **Publication:** International Conference on Swarm Intelligence (ICSI'2023)

- **Applying Analytics to Climate Change** — **Sept 2022 - Dec 2022**
  Advisor: Prof. Anasse Bari, Dept. of Computer Science, NYU Courant
  - Leveraged human behavior alternative data to analyze climate change pattern
  - Applied predictive modeling on human data to predict the rise in average surface temperature
  - **Technologies used:** Python, Scikit-Learn, Scipy, Predictive Modeling, Causal Inference
  - **Publication:** 10th IEEE Swiss Conference on Data Science

- **Data Scientist Intern - Yahoo!** — **May 2022 - Aug 2022**
  Business Insights and Analytics (BIA) — Manager: Marcel Hass, VP of BIA
  - Worked and presented my research on Smart Exchange of ad request data at Supply Side Platform from scratch
  - Investigated and presented competitor insights that would help improve Supply Side Revenue
  - Assigned future tasks for multiple teams to pursue based on my findings
  - Worked on Demand Side Supply Path Optimization
  - Raised tickets suggesting better methodology of data logging that would have a high impact on the Demand Side Supply Path Optimization
  - **Technologies used:** Advanced SQL, Hive, Python, Other internal tech tools

- **JPM Chase Project: Regulatory Compliance in Investment Banking** — **Jun 2020 - Mar 2021**
  Advisor:Prof. Dr. Kamalakar Karlapalem, Dept. of Computer Science, IIIT-Hyderabad
  - Built 3 sub-systems towards building a QA system for regulatory policies.
  - Deep attention-based network for answer ranking in the retrieval module of the automated QA Model.
  - Created a generic template for policy parsing and a multi-layered semantic net for concepts and linkages across documents.
  - **Technologies used:** CoreNLP, BERT, Attention Networks, Siamese Model, Topic Modeling, Hierarchical Clustering, SpaCy Custom Model, Word2vec Embedding, Scikit-learn
  - **Publication:** WWW '22: The ACM Web Conference 2022   FinWeb-2022 Short Paper
  - **ACM Kudos Showcase:** SEBI Regulation Biography

- **Single-Cell RNA-Protein Sequencing - Pseudotime Trajectory inference** — **Jun 2020 - Jun 2021**
  Advisor:Prof. Dr. Hamim Zafar, Dept. of Biological Sciences and Bioengineering, IIT-Kanpur
  - Implemented a generative model followed by inter-cluster analysis and linkage in the latent space, delivering data visualization results for feasibility assessment of building an intelligent solution for pseudotime trajectory creation in cell development.

- ○ **Technologies used:** Biopython, SciPy, Variational Inference, Post-Predictive Analysis, PAGA, Seurat
- **Adaptive Learning Management Expert System**   **Jan 2020 - Jul 2020**
  Advisor:Prof. Dr. M. Brindha, Dept. of Computer Science, NIT-Trichy
  - ○ Created a statistical cognitive mathematical model that relates learning speed of students with the difficulty level of the course and time taken to complete a single learning unit.
  - ○ Novel dynamic estimation of course difficulty indices to ensure optimal cognitive load during learning.
  - ○ Implemented a system with dynamic knowledge base and interactive UI for students of management courses at NIT.
  - ○ **Technologies used:** MEAN Stack, Threshold-based Classification, LDA, Heroku, Django
  - ○ **Publication:** Education and Information Technologies Journal 26, 5895–5916 (2021)
- **Autonomous Vehicles: Neural Network Hidden Layers Estimation**   **Dec 2017 - Feb 2018**
  Advisor:Prof. Dr. C. Mala, Dept. of Computer Science, NIT-Trichy
  - ○ Compared and analyzed the performance of neural networks with analytical tools and techniques based on the number of hidden layers with a given constant weightage and vice-versa for datasets related to autonomous vehicle systems.
  - ○ **Technologies used:** MATLAB,Neural Nets and Graph Plot Libraries
  - ○ **Publication:** Proceedings of ICECEIC Jan 30-Jan 31, 2019
- **Big-Graph Analytics: Explainable Graph Classification**   **May 2019 - Jul 2019**
  Advisor:Prof. Dr.Arijit Khan, School of Computer Science and Engineering, NTU Singapore
  - ○ Developed a feature extraction technique to analyze embeddings of subgraphs extracted from a given PBMC dataset for more accurate classification by a CNN. Utilized a deepLift model to establish importance of subgraphs available for carcinogenic chemicals. Achieved 80 percent accuracy.
  - ○ **Technologies used:** CNN, Numpy, Subgraph Algorithms, Vectorization Algorithms, Tensorflow and Keras Architecture

SKILLS

- **Proficient**: Python - multi-year experience using Open Source ML packages, R, Tensorflow, Keras, MySQL, MATLAB, Mathematics, Research Writing

- **Intermediate**: Android Studio, Django, Javascript, HTML, CSS, Git

- **Others**: Linux, Windows, Git, Latex

MINI-PROJECTS

- Multimodal problem - **Image Processing** using Deep Learning, August 2019 - Dec 2019

- Development of a **Job Application Tracking System** - Resume Classifier, May 2018 - July 2018

- Twitter **Data Mining**, Oct 2017

- **Sentiment Analysis** of Sexual Assault Data, Oct 2017

- Online **Intern Search Portal**, Oct 2018-Nov 2018

LEADERSHIP EXPERIENCE

- **Research Head, DataByte, NIT-Trichy:** Led a team of undergraduates to work on AI research projects and conducted an introductory workshop on the basics of Machine Learning concepts and programming in Python for sophomores.
  Soft Skills: Communication skills, Effective collaboration, Team Leadership, Analytical skills and Interpersonal skills.
- **Webmaster, IEEE Student Branch of NIT-Trichy:** Maintained the IEEE Student Branch of NITT's webpage.
  Soft Skills: Time Management.
- **Head, Workshops Team, Vortex 2020:** National Level Symposium of the Department of CSE. Led a team of 20 students. Invited renowned researchers to conduct workshops at NIT Trichy and outreach workshops at other universities.
  Soft Skills: Decision Making Skills.

EXTRA-CURRICULARS

- **Coordinator, Events Team, Festember '18 and '19:** National Level Cultural Festival of NIT Trichy with footfall of more than 5000. Responsible for creating new event ideas and coordinating more than 50 events conducted by the various literary and arts clubs of NIT Trichy.