Scholastic Achievements

- Secured **Department Rank 2** in M.Sc., Industrial Engineering and Operations Research (Batch of 2021-2023)
- Secured **AIR-38** in IIT-JAM (Joint Admission for Masters) Mathematics with **99.71** Percentile
- Unified Cyber Olympiad (Level 2)-2015 **Gold Medalist**, secured Rank 202 at National Level and Rank 2 in Zone 9

Professional Experience

Axtria | Data Analyst Intern   **| May - July, 2022**

Objective : To **analyze** last six months time-sheet entry of employees across all offices for better allocation & utilization
- Performed **Exploratory data analysis** to identify trends and patterns and proposed insights useful for the firm
- Researched and read about the key performance indicator(KPI) of Health-care information technology industry

Academic Projects

Deep Learning Project [Ongoing] | July - Present, 2022

Research Project [IE685] | Guide: Prof. P. Balamurugan
- Understood state-of-the-art literature about Weakly Supervised **Object Detection** and implemented using **CNNs**

Machine Learning Project | Jan - May, 2022

Course Project: Intro to Machine Learning [EE769] | Guide: Prof. A. Sethi
- Performed **EDA** and **eliminated correlated** and **imputed missing** vars. Trained & validated hyper parameters of elastic net **logistic regression,NN,SVM,RF** for classification problem & eliminated features with low importance.
- Modified a pre-existing **CNN** training code to classify bees vs ants to test learning rate and momentum and added **weight decay** for regularization. **Preprocessed** data for clustering using various transforms, trained & visualized the effect of k in **k-means**. Trained **PCA** & **k - PCA** and selected number of dimensions based on variance explained.

Hand Written Digit Classifier using Neural Network | July, 2022

Self Project | Data-set used : **MNIST** handwritten image data
- From scratch, build an **MLP classifier**, implementing **stochastic gradient descent** and **backpropogation**
- Implemented **Cross-Entropy** loss, **L2 regularization**, better **weight initialization** to avoid **learning slowdown**
- Achieved accuracy of more than **99%** on training data and **98%** on test data using just 2 hidden layers

Social Spam Classification and Hybrid Classifier | Jan - May, 2022

Seminar Projects [IES601] | Guide: Prof. V. Kavitha
- Reviewed & presented paper which used social honeypots+Machine learning for social **spam classification**
- Reviewed & presented a paper which used **k-NN** classifier with **Classification tree** to make hybrid classifier

Constrained & Unconstrained Optimization Modelling | Aug - Dec, 2021

IE507 and IE684 labs | Guide: Prof. P. Balamurugan | Jan - May, 2022
- Build & implemented **constrained** optimization models using **pyomo** & solved them using solvers like **cbc, glpk**
- Implemented **gradient descent, line search, Newton's** and **BFGS algorithms** from scratch for solving **unconstrained** nonlinear optimization problems, used them to solve practical problems like loss minimization

Key Courses/Skills

Technical Skills • Python • AnyLogic • LaTeX • MS-Excel • Wolfram Mathematica • cbc solver • glpk solver • ipopt solver • NumPy • Pandas • scikit-learn • SciPy • Seaborn • Matplotlib • pyomo • PyTorch

Major Courses[Ongoing] • **Deep Learning**-Theory and Practice • **Optimization** Techniques • Economics
[Completed] • Intro to **Machine Learning** • Optimization Models • Engineering **Statistics** • Linear Systems

Positions of Responsibility

Logistic Manager | IEOR Day, 2022 | IIT Bombay
- **Managed** the logistic division of IEOR department fest with team of 5 for successful completion of the event

Extracurricular Activities

- Won **Bronze medal** at 9th **National Grappling Championship** conducted by Grappling Federation of India **|**2016