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| 2595 Washington Street  Boston MA – 02119  Phone No: [+1-857-260-9294](tel://+1-857-260-9294/) | **Sakshi Suman** | [sakshi.math.163@gmail.com](mailto:sakshi.math.163@gmail.com)  [GitHub](https://github.com/sakshisuman12) | [LinkedIn](https://www.linkedin.com/in/sakshisuman12/) | [Portfolio](https://sakshisuman12.github.io/) |

A computer scientist, mathematician and a Software Engineer solving complex challenging problems for 2+ years. Looking for a long-term career in research-oriented roles in the fields of Computer Vision with applications of Machine Learning/Deep Learning.

**Education**

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| * M.S. in Applied Mathematics (Machine Learning and Data Science), Northeastern University, Sep 2021 – Present; GPA: **3.95/4.0** * B.Tech. in Computer Science Engineering, REVA University, Jul 2015 – Jun 2019. GPA: 8.55/10. * **Coursework:** Data Structures & Algorithms, Calculus, Applied Linear Algebra, Probability, Mathematical Modeling, Machine Learning, Applied Statistics, Graph Theory, Databases, Operating Systems, Computer Architecture, Discrete Mathematics. |

**Technical Skills**

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| * Python, Java, R, C/C++, MATLAB, Mathematica, SQL, PHP, Perl, HTML, CSS, TypeScript, XML, JSON, Visual Basic. * PyTorch, TensorFlow, OpenCV, NumPy, pandas, Matplotlib, scikit-learn, SymPy, Spark, Git, Jupyter, Linux, Docker, PyCharm. * Regression, Classification, Ranking, Recommendation Systems, Clustering, Dimensionality Reduction, Bagging, Boosting, Feature Engineering, Neural Networks, Deep Learning, Computer Vision, Natural Language Processing, Optical Character Recognition. |

**Employment**

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| **AI/ML Engineer Intern** | **LinkedIn Corporation** | **May 2022 – Aug 2022** |
| * Worked with the Anti-Abuse AI team to develop an end-to-end Machine Learning model to detect fraud jobs using content-based features. Improved the Precision from 28% to 49% at 80% Recall compared to an existing behavioral model. * Reduced manual human intervention of downstream team by 43 %. * Worked in technical teams in development, deployment with product managers to formulate ML problems. | | |
| **Software Engineer – Machine Learning** | **Pelatro Solutions Pvt. Ltd.** | **Jun 2019 – Jun 2021** |
| * Predicted Next Best Action for an Offer Generator using K-Means Clustering with a 61 % average chance of achieving the intents. * Optimized the duplicate row detection algorithm using a probabilistic approach and reduced time complexity from O(*n*2) to O(*n*). * Adapted Tesseract OCR’s code, to increase accuracy in text-recognition for screen fonts from 50 % to 95 %. | | |
| **Machine Learning Intern** | **Walkter Beacon Lab Pvt. Ltd.** | **Jan 2019 – May 2019** |
| * Automated resume matching process using a word count model and decreased the time spent by recruiting by ~ 80 %. * Performed sentiment analysis on user ratings for organizations and developed a smart scoring algorithm for work happiness. * Designed an efficient data structure for user visit logging and calculation of user retention rate. Automated email system for ATS. | | |
| **Teaching Assistant/Mentor** | **Northeastern University** | **Sep 2021 – Present** |
| * Courses: Calculus I (including applications of mean value theorem, integration, finding area under curve), Probability & Statistics. * Mentor at **Girls’ Angle**, a math club supported by Google that provides comprehensive approach to math education for girls. | | |

**Projects**

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| * [Brain CT Hemorrhage Classification & Segmentation](https://github.com/saint1729/MATH7243_project) Performed binary classification using Xception Net and transfer learning to classify brain CT scan slices achieved an F-Score of 0.76. Used class weighting to account for imbalance and improve F-score to 0.82. Applied Bayesian Hyperparameter Optimization to reduce training time by 70 %. Performed semantic segmentation using U-Net and achieved an IoU of 0.66. Leveraged multiple shades of CT scans and 3D convolutions to improve IoU to 0.71. * [Movie rating prediction using Matrix Factorization](https://github.com/sakshisuman12/deeplearning/blob/main/Matrix%20Factorization/MatrixFactorization.ipynb) Derived [update rules](https://sakshisuman12.github.io/main.pdf#page=27) for Weighted Alternating Least Squares and predicted missing user ratings for MovieLens data to achieve a 62 % better MSE performance than baseline model. * [Data Modeling using Markov Chain](https://sakshisuman12.github.io/math7241_project_report.pdf) Performed Time Series Analysis of monthly Sunspots from 1749 – 1983 with a Markov Chain. Performed autocorrelation and GoF test at 5 % significance level to determine valid states of chain. * [Image classifier for the SVHN dataset](https://github.com/sakshisuman12/deeplearning/tree/main/Digit%20Classifier%20-%20SVHN) Built a CNN classifier model with 3 convolutional layers and 2 fully connected layers for digit recognition on street view images. Applied MaxPooling, BatchNormalization, Dropout and Early Stopping callback techniques to increase the validation accuracy on baseline from 55 % to 89.55 %. * [Transfer learning for pet classification](https://github.com/sakshisuman12/deeplearning/blob/main/Transfer%20Learning%20-%20Cats%20and%20Dogs%20Classifier/Transfer%20Learning%20-%20Cats%20and%20Dogs%20Classifier.ipynb) Used pretrained MobileNet V2 model (trained on ImageNet dataset) as a feature extractor and trained additional new layers to classify cats and dogs. Applied freezing on pretrained layers and replaced last layer to achieve a classification accuracy of 99 %. |

**Extra Academic Activities**

* Featured as a stellar grad student in the Applied Math program (out of 229 students) for academic and career excellence.
* Attendee of virtual Grace Hopper Conference (vGHC) – 2021, WomenHack – Boston and networked with several companies.
* Member of IEEE computer society, student branch and volunteered at the IEEE International Smart Technologies, Bangalore, 2017.