LAKSHAY SHARMA
Computer Science, Undergraduate

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EDUCATION

Aug 2018 – present Pilani, India	**B.E. (Hons) Computer Science and M.Sc. (Hons) Economics,** *Birla Institute of Technology and Science, Pilani Campus* CGPA: 8.8
May 2017 – Jun 2018 New Delhi, India	**Higher Secondary School (XII standard),** *Mount Abu Public School* Percentage- 92.3%
Apr 2015 – Mar 2016 New Delhi, India	**Secondary School (X Standard),** *Mount Abu Public School* CGPA: 10

RELEVANT COURSES

Machine Learning | Data Structures and Algorithms | Linear Algebra | Discrete Mathematics in CS

Probability and Statistics | Object Oriented Programming | Database Systems

Computer Programming in C | Econometrics | Deep Learning Specialization (online certification)

RESEARCH INTEREST

I am a passionate Machine Learning enthusiast having primary research interests in the field of Computer Vision and Natural Language Processing. My research experience and projects have inculcated a strong passion for Artificial Intelligence, especially some real life applications of Deep Learning. I am inclined to pursue higher studies and research in Deep Learning and further contribute with this expertise in diverse domains.

WORK EXPERIENCE

Jul 2021 – present Rajasthan, India	**Advanced Data Analytics and Parallel Technologies (ADAPT) Lab,** *Research Assistant* *Advisor - Dr. Pooam Goyal* • Conducting a **multivariate time series analysis** on the multi-spectral Landsat data to **predict the crop yield in different areas**. • Experimenting with different deep learning architectures (including **CNN** and **LSTM**s), trained on dimensionally reduced data (treating images as histogram of pixel count). • Incorporating a **Gaussian Process** to model the spatio-temporal structure of the given data.
Jan 2021 – May 2021 Rajasthan, India	**Economics Department, BITS Pilani,** *Independent researcher* *Advisor - Prof. NVM Rao* • Designed and implemented an efficient framework for **sentiment analysis of consumer's behavior** using twitter data. • Used NLP methods and concepts such as **stemming**, **tf-idf** scores, **lemmatization** and **nltk** for text processing. • Experimented with different Machine Learning models (ex- **Naive Bayes**, **XG Boost**) and neural networks (**CNN**s) to obtain highest accuracy.
May 2020 – Jul 2020 Bangalore, India	**Wipro India Ltd.,** *Data Analyst Intern* *Mentor - Prof. Venkiteswaran Gopalakrishnan* • Designed and developed an independent project which aims to assist in decision making process involving analysis of employee data on different dimensions using **machine learning** algorithms. • The **supervised classifier** machine learning model used algorithms like **SVM**, and **Decision Trees** to analyze and filter the employee data based on given criteria. • Applied **principal component analysis** on the data and integrated the results with a **Tableau** dashboard.

SKILLS

Programming Languages	*Proficient:* Python, Java, Octave, C	*Familiar:* C++, MySQL, HTML
Frameworks	*Proficient:* TensorFLow	*Familiar:* PyTorch
Libraries	*Proficient:* Keras, NumPy, Pandas, SciPy, Matplotlib, SciKit-learn	*Familiar:* OpenCV

PROJECTS

Jul 2021

Trigger Word Detection, *Independent project*
- Constructed a synthesized speech dataset and implemented an **Attention based Sequence Network** to build a trigger word / keyword detection model
- Further improved the accuracy to **92.39%** using **GRU (Gated Recurrent Units) Network**.

Jun 2021

Car Detection using YOLO, *Independent project*
- Convolutional implementation of object detection on a car dataset using **YOLO model**, further modified using a **U-net architecture**.
- Used the pretrained YOLO model for image classification and stacked **Non-max suppression** using **IOU grid** analysis to obtain most accurate boundary box.

Jan 2021

Art Generation using Neural Style Transfer, *Independent project*
- Using transfer learning to generate novel artistic images by building **deep ConvNets** implementing **Neural Style Transfer**.
- Used pretrained **VGG-19** model for image feature extraction and optimized the content image using cost analysis to obtain desired style.

Sep 2020 – Oct 2020

Stonkmaster - Stock price simulator, *NIT Durgapur*
- Developed a real time stock price prediction tool implementing machine learning algorithms like **Linear regressor, KNN, CART** and **Support Vector Regressors.**
- Implemented **REST API** to extract real time stock price data and analyzed the interdependency of different stock prices using **LSTM networks**.

POSITION OF RESPONSIBILITY

Aug 2020 – May 2021
BITS Pilani

Design Head, *Department of Publications and Correspondence*
- Managing the design team and the logistics of off-campus outreach events for BITS Pilani's student-run festivals BITS Open Sports Meet (BOSM) and cultural festival Oasis.
- Handling participant registration, the design and distribution of student body departmental snaps for BITS Open Sports Meet and Oasis.

Aug 2020 – Dec 2020
BITS Pilani

Student Representative, *Student-Faculty Council*
- Part of a 5 student body, responsible for all forms of communication between the Professors of the Computer Science Department and the third year BE. Computer Science students and to provide proper feedback for different courses.
- Given presentations and proposals to improve the teaching quality and communication between faculty and students.

2018 – 2019
New Delhi, India

Volunteer, *Mount Abu Heritage Society*
- Volunteered in adopting the heritage cultural monument *Sheesh Mahal*.
- Conducted various cleanliness and awareness drives towards preserving the heritage site, extending the life span of the structure.

ACHIEVEMENTS

Amazon ML Challenge 2021, *top 50*
Ranked in top 50 among 3500 participating teams developing Machine Learning models to accurately categorize different amazon products based on their description.

University MCN Scholarship
Awarded 80% Scholarship offered by BITS Pilani to Top 3% Students of Campus in all semesters

Pendyala Vamsikrishna Memorial Scholarship
Awarded 60% Scholarship offered by Mr. Vamsi Krishna, Alumni of BITS Pilani, in past 2 semesters.