Sakshamdeep Singh

+1 (716) 303-9262 | ssingh86@buffalo.edu | linkedin.com/in/sakshamsds | github.com/sakshamsds

Education

University at Buffalo - SUNY Aug 2022 – Jan 2024
Master of Science (M.S.) in Artificial Intelligence, ***GPA: 3.93/4.00*** *Buffalo, NY*

- **Coursework**: Machine Learning, Pattern Recognition, Deep Learning, Computer Vision, Data Intensive Computing, Big Data Analytics, Biometrics Image Analysis, Reinforcement Learning, Robotics Algorithms

Birla Institute of Technology & Science, Pilani Aug 2015 – May 2019
Bachelor of Engineering (B.E.) in Electronics and Instrumentation *Pilani, India*

Skills

Languages: Python, Java, SQL, R, HTML, CSS, JavaScript, MATLAB
Database Systems: PostgreSQL, MongoDB, Elasticsearch, Apache Kafka, RabbitMQ
Developer Tools: Git, Linux, BitBucket, Jenkins, SonarQube, Spring, Jira, Google Cloud Platform, VS Code, Eclipse
Framework & Libraries: PyTorch, Keras, TensorFlow, OpenCV, Hadoop, Spark, ROS, NumPy, Scikit-Learn, Pandas, Scipy, NLTK, Matplotlib

Experience

Software Engineer II July 2019 – Aug 2022
Wipro *Bengaluru, India*

- Contributed to development of backend in the **Cisco Kinetic for Cities project**, a smart city IoT solution
- Applied modern application development practices, such as designing **microservices architecture**, implementing **distributed computing**, and creating **low latency messaging** applications
- Developed more than **50** REST API endpoints across **5** microservices handling a throughput of **1k req/sec**
- Employed **Mockito** and **PowerMock** frameworks to write thorough unit and integration tests, resulting in a test coverage exceeding **90%**
- Collaborated seamlessly with **cross-functional teams** and cross-trained new team members to promote versatility and flexibility within the team

Software Intern July 2018 – Dec 2018
UST Global *Trivandrum, India*

- Developed REST APIs leveraging SpringBoot and microservices
- Assisted in data extraction from Facebook and Twitter as part of Sentiment Analysis Team, and gained experience in **analyzing sentiments** using **Bag-of-words** and **Tweepy**

Academic Projects

Efficacy of Ear Images for Biometrics Identification | *PyTorch, OpenCV* [code][report][ppt]

- Implemented the **YOLOv8** model for ear detection, utilizing a custom annotated dataset to train it
- Evaluated recognition performance of various deep learning models including **VGG16** and **ResNeXt50** on the **EarVN1.0** dataset (164 classes), attaining an impressive recognition accuracy of **83%**

Optical Music Recognition | *PyTorch, OpenCV* [code][report][ppt]

- Employed the YOLOv8 model and OpenCV **morphological operations** to facilitate optical music recognition and playback

Laser-Based Perception and Navigation with Obstacle Avoidance | *Python, ROS, Gazebo* [code]

- Applied **RANSAC** algorithm in a simulated environment to facilitate robot localization alongside employing **BUG2** algorithm to navigate while effectively avoiding obstacles

Neural Networks and SVM Comparison on MNIST and CelebA | *PyTorch, Sklearn* [code][report]

- Built a neural network from scratch and trained it on MNIST dataset. Using **hyperparameter tuning**, test accuracy of **95.09%** was achieved. It was utilized on CelebA dataset to achieve test set accuracy of **83.57%**
- A deep neural network and a convolutional neural network was built using multiple hyperparameters and trained on MNIST dataset to compare performance between the two. The CNN model with test accuracy of **99.1%** outperformed the DNN model with a test accuracy of **92.8%**
- Employed **SVM** with RBF kernel and **C=10** on the MNIST dataset to achieve a test accuracy of **98.34%**