Omkar Muglikar

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EDUCATION

Master of Science – Computer Science   **May 2021**
Arizona State University, Tempe, AZ   **GPA 3.78/4.00**

Bachelor of Engineering - Computer Engineering   May 2019
Pune Institute of Computer Technology, Pune, India   **CGPA 8.42/10**

TECHNICAL SKILLS & RELEVANT COURSES

Software: Jupyter notebook, Keras, PyCharm IDE, Eclipse IDE, Linux OS, GitHub, AWS EC2, Microsoft Excel, PowerPoint, Word
Languages: Python, C++, Java, HTML, JavaScript, CSS, SQL
Databases: MySQL, MongoDB, Firebase
Courses: Data Intensive Systems for Machine Learning, Perception in Robotics, Advances in Robot Learning, Data Mining, Statistical Machine Learning, Data Analytics.

PROFESSIONAL EXPERIENCE

Intern   **May 2018 – Sep 2018**
Center for Development of Advanced Computing (CDAC) Pune, India
- Designed and developed User Interface using HTML, CSS, JavaScript
- Understood requirement, technicalities and design of the software.
- Embedded interactive graph design in UI and integrated it with server using PHP and Python
- Created and managed database tables using MySQL

Intern   **June 2018 – Sep 2018**
Vasundhara Geo Technologies Pvt. Ltd.   Pune, India
- Developed code in Python for detecting a change in specific area of interest over a period of one year in the satellite image.
- Extracted location coordinates from KML file and mapped it onto geo-referenced image using GDAL library
- Detected change by image subtraction of two NDBI index images and displayed it using Matplotlib to study urbanization rate
- Collaborated with fellow interns to understand the workflow and requirements of project and develop code accordingly

PROJECTS

Capstone Project: 'Answering Open Ended Questions Based on Image Using Deep Learning Approach'   **Sep 2018 – Mar 2019**
Goal: To analyse baseline model (CNN+LSTM) for visual question answering task and try to improve on the same
- Modelled Convolutional neural networks for image feature extraction and Long Short-term memory (LSTM) networks for extracting features from question. Analysed a part of VQA dataset to train the neural networks and compared performances with different CNN models.
- Performed Exploratory data analysis on the VQA dataset followed by extracting relevant data.
- Executed the models on 60,000 training and 9783 testing samples to observe that Inception Resnet + LSTM gave highest top 5 accuracy of 77.02%

Personal Website from scratch (HTML/CSS, Bootstrap, JavaScript, AWS EC2, AWS Route53, Google Analytics) May 2020 – June 2020
Goal: To deploy a website in real time
- Designed a website from scratch for my personal portfolio.
- Deployed it on Amazon AWS EC2 instance using student account for AWS educate. Embedded google analytics for real time analysis of users on my website.

Music Genre Classification (Python, Keras, Jupyter Notebook, Neural Networks)   **Aug 2019 – Dec 2019**
Goal: To classify music based on genre and do a comparative analysis of various models
- GTZAN dataset was used. Implemented various classifiers like CNN, SVM, CNN+RNN including the latest **bottom up broadcast neural network (BBNN)** using Keras. Trained the BBNN for 100 epochs and tuned the hyperparameters to achieve maximum accuracy of 91%

Meal detection using the Continuous Glucose Monitoring Data (Python, NumPy, Pandas, Matplotlib)   **Aug 2019 – Dec 2019**
Goal: To detect if the person has taken a meal (yes/no)
- Extracted features from the CGM series data of 5 patients and applied PCA to get 5 components.
- Applied ensemble learning with hard voting to get an accuracy of 78% on validation data.

OTHER WORK EXPERIENCE

Graduate Teaching Assistant   **Aug 2019 – Dec 2019**
Arizona State University, Tempe, AZ
- TA for the course CSE 205 **Object Oriented Program and Data Structures** to assist professor. Conducted midterm review, graded assignments, co-ordinated with fellow graders and proctored examination of a class of 142 students.

Graduate Services Assistant   **Aug 2020 – Oct 2020**
Arizona State University, Tempe, AZ
- Assisted the professor with grading of assignments of a virtual class of 202 students for the course CSE 551 Foundations of Algorithms.