VIVEK BHAVE

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EDUCATION

University of Massachusetts, Amherst M.S. Computer Science (4.0/4.0) Sep 2019 - Present
Coursework: Machine Learning, Neural Networks (Deep Learning in Computer Vision), Natural Language Processing

College of Engineering, Pune B. Tech., Information Technology (8.65/10) Jul 2015 - May 2019
Coursework: Data Structures and Algorithms, Databases, Computer Networks, Operating Systems

SKILLS

Languages: Python, Java, C#, C++, C, SQL, Bash Scripting
Artificial Intelligence / Machine Learning Tools: Numpy, Pandas, PyTorch, TensorFlow, R
Web & Mobile App Development: HTML, CSS, JavaScript, Xamarin, MySQL, Flask, Couchbase, RocksDB

INDUSTRY EXPERIENCE

Interim Engineering Intern — Qualcomm San Diego, California
Multimedia Research and Development - Visual Technology Team May 2020 - Aug 2020

- Developed Deep Learning models using Tensorflow to perform low power Image Stabilisation
- Modelled power requirement for the Camera Signal Interface Decoder in next generation Qualcomm processors

Software Engineering Intern — Schlumberger Pune, India
Mobility Solutions - Cross Platform Application Development May 2018 - Jul 2018

- Developed an Android application that enables employees to anonymously provide feedback of team meetings
- Implemented backend server logic in C# and deployed it on Azure Cloud
- Used a NoSQL based Couchbase database for time series analysis and generating aggregated reports

RESEARCH EXPERIENCE

Machine Learning Applied to Child Rescue (Prof. Brian Levine) Jan 2020 - May 2020

- Implemented a ResNet-18 model in PyTorch to identify Scene & Attributes of images determining possible child exploitation
- Delivered the project to Law Enforcement Agencies in the US to facilitate their investigation processes
- Developed model can accurately detect appropriate scenes on 80.5% of the images of Places365 Test Dataset

COEP Satellite Initiative, Onboard Computer Team (Prof. Manisha Khaladkar) Oct 2015 - May 2019

- Designed and implemented tracking software for satellite Ground Station in Python
- Researched and developed an onboard file system and interfaced various IC's by programming micro controllers with C

PROJECTS

Neural Text Simplification Mar 2020 - May 2020

- Explored a novel technique to finetune pretrained models like BART, T5 and Attention based Transformers on text simplification datasets
- Developed a loss function in Tensorflow to combine results from neural and statistical models
- Achieved a SARI score of 0.325 against the current state-of-the-art SARI score of 0.356

Image Classification using Convolutional Neural Networks and NLP Sep 2019 - Dec 2019

- Performed object detection with the current state-of-the-art unified parsing model in PyTorch
- Experimented with different neural network models to perform scene classification
- Achieved an accuracy of 81.2% tested over 5000 images of 10 classes

PUBLICATIONS

- "Design and Development of a Real-time On Board Computer System for an Actively Stabilized Nano Satellite, "**International Astronautical Congress 2016, Mexico, IAC-16,E2,4,8,x33928**