
AMITOJDEEP SINGH

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Computer Science and Economics Student

Education

- | | |
|-------------|--|
| 2014 - 2019 | B.E. (Hons.) Computer Science
<i>Birla Institute of Technology and Science, Pilani</i>
Bachelors degree as a part of dual degree programme |
| 2014 - 2019 | M.Sc. (Hons.) Economics
<i>Birla Institute of Technology and Science, Pilani</i>
Masters degree as a part of dual degree programme |

Technical Skills

Languages: Python, C, C++, JAVA, SQL, Scheme, Prolog, MASM

Major Courses Data Structures and Algorithms, Object Oriented Programming, Database Systems, Operating Systems, Machine Learning, Information Retrieval, Computer Architecture

Frameworks: TensorFlow, Theano, Keras, OpenCV, PIL, NumPy, SciPy, Graphlab Create, Verilog, Proteus

OS: Windows, Linux, Android

Experience

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| June 2017 - July 2017 | Summer Research Intern
<i>Central Scientific Instruments Organisation (CSIR-CSIO), Chandigarh</i> <ul style="list-style-type: none">Deep Convolutional Neural Networks for Traffic Sign Recognition and Detection on GTSRB benchmark, adapted for traffic signs of Chandigarh using transfer learning3D Convolutional Neural Networks for lung nodule detection on LUNA16 dataset |
| May 2016 - July 2017 | Software Development Intern
<i>Yrals Digital, Mumbai</i> <ul style="list-style-type: none">Content Aware Image Processing for live execution on themedia engine using PIL & OpenCVData Mining and Natural Language Processing for content generation & augmentation using BeautifulSoup, Named Entity Recognition (NER), NLTK and dbpedia |

Projects

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|-----------------------------|--|
| August 2017 - December 2017 | Neural Networks for Stock Price Prediction <ul style="list-style-type: none">Designed a Multimodal and Multitask Deep Learning Model to predict stock price movement and volatility using Price data and News HeadlinesAchieved a prediction accuracy of 74.93% for price movement direction and MSE of 0.0017 for volatility <i>[Report, Code]</i> |
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June 2017 - July 2017	<p>Deep Convolutional Neural Networks for Traffic Sign Recognition</p> <ul style="list-style-type: none"> Achieved 99.38% classification accuracy using ensemble of VGG inspired model instances with added batch normalization layers Ranked 7th internationally on the GTSRB benchmark, beating any human performance based approach <p>[Report, Code]</p>
January 2017 - December 2017	<p>ATU: Adaptive Template Update for Constructive Fingerprint Identification</p> <ul style="list-style-type: none"> Minutiae points were mosaicked using Thin Plate Spline transformation to mimic natural deformation during registration. High confidence test fingerprints were used to update the database to improve the accuracy. Achieved 100% CRR and 20% EER for fingerprints of 100 users of <i>FVC 2004 database</i> <p>[Paper, Code]</p>
October 2017 - November 2017	<p>Semantic Similarity Analyser and Predictive Typing System</p> <ul style="list-style-type: none"> Used Manhattan LSTM to predict semantic similarity of two query phrases Google word2vec was used to generate embeddings of query phrases Achieved an accuracy of 80.35% on <i>Quora Duplicate Questions Dataset</i> Semantic similarity between current sentence and sentences in corpus was used for predictive typing <p>[Report, Code]</p>
January 2018 - Present	<p>Multi-person Pose Estimation for Real Time Video</p> <ul style="list-style-type: none"> Using <i>VGG 19</i> outputs of video frame by frame to extract key points and match them using Part Affine Fields Implementing the system on Android based device for practical application

Achievements

June 2017 -	<p>German Traffic Sign Recognition Benchmark</p> <p>GTSRB</p> <p>Achieved 7th rank internationally on German Traffic Sign Recognition Benchmark beating all known human performance based techniques</p>
2013 -	<p>KVPY Mentorship Award</p> <p>Indian Institute of Science (IISc)</p> <p>Awarded the Kishore Vaigyanik Protsahan Yojana (KVPY) mentorship by the Indian Institute of Science(IISc), Bangalore for excellence in academics</p>

Volunteer Experience

May 2016 - April 2017	<p>Financial Head</p> <p><i>Economics and Finance Association, BITS Pilani</i></p> <ul style="list-style-type: none"> Raised, managed and allocated funds & resources for the semester events and year-round operating expenses Organised lecture series, seminars & events by managing 40+ members
2014 - Present	<p>Member</p> <p><i>Photography Club, BITS Pilani</i></p> <p>Participated in club activities including organising exhibitions, hands on sessions and event coverage</p>

Hobbies and Interests

My hobbies are photography, travelling, learning about technology & playing badminton