KARTIK SRIVASTAVA

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EDUCATION

Birla Institute of Technology and Science, Pilani - Hyderabad Campus 2014 - 2019
Bachelor of Engineering (Hons.) in Computer Science
Master of Science (Hons.) in Mathematics
CGPA: 8.08/10.00
(*First Division*)

City Montessori School - Gomti Nagar, Lucknow 2014
Indian School Certificate (ISC) Examination
Percentage: 93.67%

St. Francis' College, Lucknow 2012
Indian Certificate of Secondary Education (ICSE)
Percentage 90.14%

PUBLICATIONS

Multi Modal Semantic Segmentation using Synthetic Data *2019*
***Kartik Srivastava**, Akash Kumar Singh, Guruprasad M. Hegde*

Accepted in workshop on *Deep learning for Automated Driving: Beyond Perception (DLAD-BP 2019)*, IEEE International Conference on Intelligent Transportation Systems 2019 (ITSC '19). [**pdf**, **link**]

INDUSTRY EXPERIENCE

Amazon Web Services, Bangalore
Software Development Engineer *December 2019 - Present*

Currently working in the Control Plane team of AWS Elasticsearch service, where my work is focused on providing Elasticsearch as a fully managed and scalable service.

Amazon Development Center, Bangalore
Software Development Engineer *July 2019 - December 2019*

Worked with the Worldwide Deals team of Amazon and was responsible for maintaining various tier-2 services that facilitate creation and management of deals on Amazon retail website.

Software Development Engineering Intern *May 2018 - July 2018*
Data Warehouse Migration
Worked with the Deals & Events team of Amazon and migrated their noSQL databases to SQL based Oracle Data Warehouse to enable backwards compatibility of data for business and analytics teams of Amazon. The project involved conversion of unstructured data from noSQL databases to structured data (tab separated values) using functional programming and loading it into relational data warehouses through ETL jobs.

Essar Power Gujarat Ltd.(EPGL) - Jamnagar, Gujarat *May 2016 - July 2016*
Summer Intern

Analysis of the Conveyor Belt System of Coal Handling Plant-EPGL
Analyzed the breakdown and working pattern of the conveyor belt system of Coal Handling Plant(CHP) of EPGL. Calculated the current reliability and approximated the reliability function of the system.

RESEARCH EXPERIENCE

Robert Bosch Engineering and Business Solutions, Bangalore *January 2019 - July 2019*
Research Intern - Computer Vision Group, Research & Technology Center

Multi Modal Semantic Segmentation using Synthetic Data
Worked on developing methods for generating artificial data using CARLA for semantic segmentation of LIDAR point clouds used in autonomous driving vehicles. The work majorly focused on the feasibility of using artificial data from driving simulators for training machine learning models for 3D semantic segmentation.

Nanyang Technological University, Singapore *August 2018 - December 2018*
Research Intern (Supervisor: Assoc. Prof. Chng Eng Siong)

Text Imputation using Recurrent Neural Networks
Developed a computational model for text imputation using recurrent neural networks. The proposed model uses a bidirectional LSTM and attention mechanism to predict the missing word in the sentence.

MEnutritious, New Delhi *May 2017 - July 2017*
Research Intern

Recipe Parser for feature extraction
Developed a rule-based recipe parser using python and NLTK that detects and extracts various features from food recipes. The parser interprets natural language and extracts various entities like ingredients, quantity, unit, tools used, and various other attributes of the recipe like temperature and actions.

RESEARCH PROJECTS

Automatic Summarization of Tweets *August 2017 - November 2017*
Supervisor: Mr. Surender Singh Samant (BITS Pilani, Hyderabad Campus)
The project involved generating summaries of tweets using graph-based statistical summarization technique - Phrase Reinforcement Algorithm. The system generated summaries were compared with the human generated summaries using the ROUGE-1 evaluation metric. These results were used to tune the hyper-parameters of the algorithm.

Information Retrieval System for Music Lyrics *August 2017 - November 2017*
Supervisor: Assoc. Prof. Aruna Malapati (BITS Pilani, Hyderabad Campus)
Constructed a vector-space information retrieval system that retrieved the details of the song on consuming the lyrics of the song as input. Also created a python based GUI for the project.

Point distribution generation for meshless solvers *January 2017 - May 2017*
Supervisor: Dr. N. Anil (BITS Pilani, Hyderabad Campus)
The project involved generating dense point distributions for two-dimensional geometries using quadtrees by taking the boundary points of the geometry as input. The generated distribution serves as an input to a numerical solver which can calculate flow of a fluid over the body of the geometry.

Face Recognition Using Artificial Neural Networks *January 2017 - May 2017*
Supervisor: Assoc. Prof. N.L. Bhanumurthy (BITS Pilani, Hyderabad Campus)
Developed a shallow artificial neural network to recognize face, pose and presence of sunglasses. The neural network was able to correctly recognize from 20 faces and 4 different poses(left, right, center and down) and gave a peak accuracy of 92%-100%.

TECHNICAL PROFICIENCY

Languages(Proficient)	C, Python, Java, Scheme & Bash
Languages(Familiar)	C++, Assembly(x86), MIPS, MySQL, Prolog, MATLAB & LaTeX
Programming Frameworks:	PyTorch & Tensorflow

RELEVANT COURSEWORK

Computer Science
Data Structures and Algorithms, Design and Analysis of Algorithms, Machine Leaning, Information retrieval, Database Systems, Object Oriented Programming, Discrete Mathematics, Logic in Computer Science, Operating Systems, Computer Networks, Computer Architecture, Theory of Computation, Principles of Programming Languages, Compiler Construction, Microprocessors and Interfacing & Digital Design.

Mathematics
Mathematics (Multi-variable Calculus, Linear Algebra, Probability and Statistics),Linear Optimization, Nonlinear Optimization, Graphs and Networks, Operations Research, Numerical Analysis, Fuzzy Logic and Applications, Number Theory and Game Theory.

TEACHING EXPERIENCE

Teaching assistant for Database Systems *January 2018 - May 2018*
Responsibilities included assisting with lab sessions and invigilating lab examinations and quizzes.

Teaching assistant for Mathematics I (Multi - Variable Calculus) *August 2017 - December 2017*
Responsibilities included invigilating quizzes and helping the instructors with grading papers.

AWARDS AND RECOGNITION

Merit-cum-need scholarship *Birla Institute of Technology and Science, Pilani*
Recipient of merit-cum-need scholarship for all semesters of education at Birla Institute of Technology and Science, Pilani - Hyderabad Campus. The scholarship is awarded to the top 24% students and covers upto 80% of tuition fee.

Research Travel Grant *Birla Institute of Technology and Science, Pilani*
Recipient of travel grant for pursuing thesis in Computer Science at Nanyang Technological University, Singapore.

VOLUNTEERING

Make a Difference (MAD)
Academic Support Volunteer *July 2019 - January 2020*
Actively volunteering to teach underprivileged high school students in shelter homes and helping MAD to achieve it's goal to ensure that all children in need of care and protection are able to realize long-term outcomes equitable with the middle-class.