VINITH BUDDE

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EDUCATION

Purdue University, West Lafayette, IN

Master of Science in Computer Science Expected - May 2020

Coursework: Data Mining, Statistical Machine Learning, Algorithm Design and Analysis, Database Systems

National Institute of Technology, Calicut, India

Bachelor of Technology in Electronics and Communication Engineering May 2016

Relevant Courses: Data Structures & Algorithms, Embedded Systems, Natural Language Processing, Computer Networks

WORK EXPERIENCE

SDE Intern | Amazon, Seattle, WA May 2019 – Aug 2019

- Worked as part of Amazon's **Small and Light** (SnL) team - https://services.amazon.com/fulfillment-by-amazon/small-and-light.html. SnL business logic runs periodic jobs to export/ transform report data using AWS technologies
- **Job Optimization:** Some of SnL periodic jobs fail due to concurrency/memory issues. Investigated the reason for these failures and fixed them. Also, improved their performance in terms of memory, runtime and success rate
- **Migration of Job Executor service to Native AWS (Internal Amazon AWS):** Periodic jobs were run via Job Executor service deployed on internal CORP/PROD network. Worked on migrating this service onto ECS/Fargate in Native AWS

Graduate Teaching Assistant | Purdue University, West Lafayette, IN Jan 2019 - Present

- CS373 (Data Mining and Machine Learning) – Fall 2019 and CS240 (Programming in C) – Spring 2019
- Delivered one-to-one assistance to students during lab sessions and office hours

Software Development Engineer | Cavium Networks, Bangalore, India July 2016 - July 2018

- **Multi-level Rehashing algorithm for Hash tables in Xpliant Switch/ Router:** Improved Scalability of Hash tables by 30-50% over various input distributions and table sizes by implementing Multi-level rehashing algorithm (in C++)
- **Table Manager software module for XP100 project:** Designed and developed *Table Manager* software module (in C++) which manages static and dynamic allocation of SRAM tiles for various table types (Hash/ Direct Access/ TCAM/ LPM) and handles the logic of insertion, deletion and lookup of entries

Research Intern | Indian Institute of Science, Bangalore, India May 2015 - July 2015

- **GPU accelerated Face Recognition system:** Parallelized a Face recognition algorithm using optimized OpenCL code to maximize the resource exploitation on GPU. Accomplished a speedup of 374x for 16MP images outperforming CPU based implementation. (IEEE paper Link: http://ieeexplore.ieee.org/document/7371263/)

PROJECTS

- **Learning logical formulas using Neural Networks**: A tree structured neural network (TreeRNN and TreeLSTM) to capture and exploit the structure of logical expressions for the task of entailment prediction. Applied transfer learning to check if the semantic vectors learnt for the entailment task can be used for learning logical equivalence
- **Data Driven Source Code Summarization:** A Deep learning approach to generate comments for code blocks using machine translation techniques such as seq2seq models with LSTM/RNN. BLEU score metric was used for model evaluation on datasets such as Github-Java source code (DeepCom) and Stackoverflow-Python source code (StaQC)
- **Program Repair using Neural Architecture:** A neural network-based approach for program repair. Given a set of input-output examples and a candidate program (faulty one), the neural architecture comprising of LSTM encoders and decoder synthesizes the correct program
- **Machine Learning Models from Scratch:** Built various machine learning models from scratch using only Python, Numpy and Pandas. Few examples include Decision trees, Random forests, Bagging, Naïve Bayes, Perceptron, Winnow, Logistic Regression, Linear SVM, K Nearest Neighbor, K means clustering and Neural Networks

SKILLS

- **Programming Languages:** C++, C, Python, Java, OpenCL
- **Machine Learning:** Pytorch, Scikit learn, Scipy, Pandas, Numpy
- **Tools:** Git, Gdb, Valgrind, MATLAB, Wireshark, IxNetwork
- **Web Technologies:** MySQL, Oracle, MongoDB, HTML, CSS, PHP