Ramakrishnan Sundareswaran

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Incoming Research Intern - Machine Learning(NEC Labs America, San Jose, CA) Jan - May 2021

Education

Iowa State University — Ames, IA
MS in Computer Science, GPA: 4.0 — *Jan 2020 – Dec 2021*

University of Calicut — Thrissur, India
BS in Computer Science, GPA: 8.36/10 — *Aug. 2014 – May 2018*

Experience

Software Engineer — Aug 2018 – Oct 2019
ECI Telecom — *Bengaluru, India*

- Coded, documented, unit tested and delivered high quality software for ECI's Neptune Product.
- Implemented robust and scalable distributed applications for high-volume performance in C++ and Python.
- Developed an API that parsed XML/JSON requests and executed RPCs for configuring network elements.
- Integrated a third party framework with ECI's Neptune product to support operations that would not affect the network element's configuration data store; incorporated two-phase commit protocol while writing data.

Graduate Student Researcher — May 2020 – Aug 2020
Computational Media Lab — *Ames, IA, United States*

- Performed data pre-processing and feature engineering on the VISEM dataset using OpenCV.
- Implemented an end-to-end machine learning pipeline with a CNN backbone architecture using Tensorflow.

Graduate Teaching Assistant — Jan 2020 – Present
Iowa State University — *Ames, IA, United States*

- Lead Teaching assistant(1 out of 3) for COMS 113 at Iowa State University (1200 students).
- Responsible for conducting live labs, grading exams, assisting other TAs and managing the course website.

Projects

Puffin: A web app to test your English language skills | *Python, Flask, Tensorflow, AWS* — Nov-Dec 2020

- Developed a Reading Comprehension game that uses a BERT based neural network for evaluating answers.
- Implemented REST APIs using Flask, developed a responsive web app and deployed it using AWS.

Map-Reduce Framework | *C++, Python, OpenMP* — Oct-Nov 2020

- Implemented a Map-Reduce Framework in C++ with multi-threading support for a shared memory model.
- Performed profiling for the word count problem and observed a 60 sec speedup for the Gutenberg dataset.

ProveMe: A Theorem Prover for Propositional Logic | *Java, JUnit* — Oct 2020

- Developed a software to check the validity of statements given a propositional logic knowledge base.
- Implemented syntax parsing, postfix conversion, expression tree construction and propositional logic resolution.

Checkers Playing Agent | *Java, JUnit* — Aug 2020

- Designed an interactive Checkers game utilizing Object Oriented Programming principles in Java.
- Implemented the minimax algorithm with alpha-beta pruning for the agent gameplay.

Fast Neural Style Transfer | *Python, OpenCV, Tensorflow, Keras, Numpy, Pandas* — Apr-May 2020

- Implemented Johnson et al's paper to perform Neural Style Transfer using Tensorflow and Keras.
- Performed optimizations for video frames and extended the concept for fast stylizing to real time videos.

News Classifier App | *Python, Pandas* — Feb 2020

- Developed a Machine Learning based News Classifier trained on the 20 Newsgroups dataset.
- Implemented the Multinomial Naive Bayes algorithm with laplace smoothing from scratch.

Parking Management System | *Django, MySQL, Bootstrap, HTML, CSS, JavaScript* — Jan-May 2016

- Developed a CRUD web app for parking management.
- Incorporated support for navigation using Maps API and payments using Instamojo's Payments API.

Technical Skills

Languages: Python, Java, C/C++, SQL (MySQL), JavaScript, HTML/CSS
Frameworks: Flask, Tensorflow, OpenCV, Node.js