**PROFESSIONAL SUMMARY**

* Machine Learning Engineer with experience in tensorflow, Neural Networks and Parallel Computation.
* Values developing quality software by utilizing available resources to solve real world mathematical problems.

**TECHNICAL SKILLS**

Software: C/C++, CUDA, Python, MATLAB, Embedded C, OpenMP

Development: Visual Studio, LINUX/UNIX (RedHat, CentOS, Ubuntu)

Key Experiences: LSTM/GRU, CWRNN, tensorflow, weka, Regression, Multi-Class Classification

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**EXPERIENCE**

**Machine Learning Engineer January 2018-Present**

Venturesoft Global

* MovieLineUp: Conducted statistical modeling of Regressors by evaluating on Azure Machine Learning Studio Neural Networks to gain an accuracy measure of 0.94.
* Increased efficiency in relative squared error from 0.06 in a Neural Network to 0.0202 in a Boosted Decision Tree Regression.
* Obstacle Avoidance: Implemented Virtual Force Field (VFF) using Intel Real Sense R200 camera and LINUX using OpenCV, Intel Obstacle Avoidance Library, and tensorflow.
* Integrated ML modules for Face and Object detection using cloud vision API.
* Designed a Proof of Concept Small Unmanned Aerial Vehicle integrating Raspberry Pi, Sensor boards, I2C LIDAR towards obstacle avoidance by implementing Bubble Rebound Algorithm with weighted indexes.

**Northwestern University January 2015 – November 2017**

*Research Assistant: Deep Learning on Intel Phi coprocessors for financial solutions,*

* Designed multilayer Long Short-Term Memory (LSTM) and Gated Recurrent Unit (GRU) neural network implementations using Intel Compiler (ICC) for processor based hyper threading applications.
* Developed Open MP pragma code for a multi-threaded solution using Xeon Phi co-processors.
* Improved the hidden layer characteristics of multi-layer LSTM’s for finance time series dataset by minimizing MSE from the initial 0.5896 (58.96% error) on three epochs to 0.1443 (14.43% error).
* Managed Visual Studio test benches exercising Intel VTune Amplifier and Vectorization to improve hyper-threading performance on Linux hosts.
* Integrated GCC Neural Net-CPP library files for ICC by handling dependencies, linkers and pragmas to multithread sequential CPP codes.

**Siemens February 2012 – March 2014**

*Engineering Intern: Building Technologies Division* Analyzed XLS Fire panel heuristics while debugging real time embedded systems on DESIGO and C++.

* Decreased transmission delays by 20% through rerouting IP sensor system in CMRL onsite fire panel.
* XLS System calibration and setup for buildings using design files and system links on DESIGO.
* Maintained over 100 Cognizant smart cards with employee information for: data safety, building access, and HVAC monitoring.

**ACADEMIC PROJECTS**

Logistic Regression on CUDA GPU and Performance Analysis

* Executed Logistic Regression (Machine Learning) in CUDA C++ with RedHat LINUX shell.
* Collaborated with a team member which increased performance by 4.78 times in test cases when compared to MATLAB and CPU (C++/Python/Weka) implementations.
* Optimized the algorithm to share memory while looping for a 50ms reduction in calculation time.

Home-Assistant API and IFTTT deployment for Smart Home IoT

* Scripted LINUX shell in RASPIAN OS to implement a stand-alone home-assistant on Raspberry Pi.
* Achieved WPA network security with a team to develop a prototype which monitored GPS positions of all the members via iCloud Accounts.
* Integrated Speech to Text API (Home-Assistant & Amazon Alexa) for easy access and control.