Chamila C. Dharmawardhan, Ph.D

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LinkedIn Google scholar GitHub

Authorized to work in USA (Green Card holder)

Dedicated **data scientist** and a **computational physicist** with 14+ years of diverse experience in numerical simulation, scripting, data analysis and on HPC and other UNIX based systems. excellent team player with aptitude for planning and conducting interdisciplinary projects.

Skills & experience

languages:	Python, TSQL, C++, Java, Fortran, BASH, Perl, Mathematica
frameworks:	Anaconda, SciKit-learn, Pandas, numpy, scipy, TensorFlow, Keras, pytourch, beautifulsoup, GitHub
HPCC:	supercomputers (NERSC, XSEDE, ALCF). PBS, LSF ans SLURM batch queuing systems
Management:	Designed interdisciplinary research projects with diverse research collaborations effectively

Projects

Facial emotion recognition via deep learning (GitHub)

- A facial expression recognition model to serve as a personal journal of emotion
- base CNN model developed with FER2013 Kaggle dataset (**Tensorflow, Keras**)
- Images scraped from google images(**Selenium, bs4**) and used transfer learning
- **Django app** build to service the CNN model and provide a journal app

Pneumonia prediction from X-ray images with CNN techniques (GitHub)

- CNN model developed with Kaggle dataset (**Tensorflow, Keras**)
- Hyper parameter tuning to increase accuracy.
- Transfer learning from VGG19 model to increase accuracy

Customer churn prediction of TelCo data via supervised learning (GitHub)

- CNN model developed with Kaggle dataset (**SciKit-Learn, StatsModels**)
- Customer churn prediction with **logistic regression, Decision tree, Random forest, SVC, verity of boosting** algorithms.
- Hyper parameter tuning to increase model accuracy and recall

Employment

Senior Research Associate, Illinois Institute of Technology 2019 - 2020

- Development FFT based algorithms for protein docking (**numpy, pandas**) to evaluate binding affinity of protein complexes
- Automated structure retrieval using **protein data bank API** and building scripts to streamline docking simulations of large databases

Post Doctoral Fellow, Georgetown University (2 Publications) 2017 - 2019

- Development of accurate and efficient computational methods for protein simulations
- building pythons scripts to streamline FF parameterization and simulation
- developed and implemented potential function for the SSMP model

Post Doctoral Fellow, University Colorado Boulder (3 Publications) 2016 - 2017

- Understanding corrosion of high temperature super-alloys in 4D: experimental/theoretical collaboration
- Developed Python tools for force fields building, data handling and visualization of results
- Automated calculations and visualizations via python and bash scripting

Graduate Research Assistant, University Missouri – Kansas City (11 Publications) 2011 – 2015

- Utilized *ab initio* simulation techniques to gain insight into structure at atomic level of cement based materials
- Developed efficient methods for thermo-mechanical simulations at high temperature (**OpenMPI** calculations)
- Troubleshoot software, manage group accounts in supercomputers and mentor students
- Mentored three masters students, one undergraduate student, and one visiting scholar

Education

2020 **Certificate, Data Science, Flatiron school of computing**
2015 **Ph.D., Physics, University of Missouri – Kansas City**
2008 **MS., Physics, Central Michigan University**
2005 **BS., Physics/Mathematics, University of Colombo, Sri Lanka**