

Chamila C. Dharmawardhan, Ph.D

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Authorized to work in USA (Green Card holder)



Dedicated **computational physicist turned data scientist** with 12+ years of diverse experience in numerical simulation, scripting and 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, Mathematics
frameworks: 📌 Anaconda, SciKit-learn, Pandas, numpy, scipy, TensorFlow, Keras, pytorch, beautifulsoup, GitHub
HPCC: 📌 supercomputers (NERSC, XSEDE, ALCF). PBS, LSF and SLURM batch queuing systems
Management: 📌 Designed interdisciplinary research projects with diverse research collaborations effectively

projects

Facial emotion recognitions via deep learning 2020

- 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 2020

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

Customer churn prediction of TelCo data via supervised learning 2020

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

Post Doctoral Fellow, Georgetown University 2017 – 2019
2 Publications. Development of accurate and efficient computational methods for bio-macromolecular simulations. building python scripts to streamline parameterization and simulation. Collaborated (**GitLab**) with Laboratory of Computational Biology at NIH for coding potential function for the SSMP model and other projects.

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 2011 – 2015
11 Publications. Utilized *ab initio* simulation techniques to gain insight into structure at atomistic 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