Chun-Min (Mindy) Jen, Ph.D.

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U.S. Lawful Permanent Resident

Skills

Coding Python, MATLAB, C, C++, SQL, Bash/Tcsh/C-Shell, Fortran 90

Toolkit scikit-learn, keras, sciPy/numPy, matplotlib, pandas, OpenCV, GitHub, Docker, AWS

Projects

Face Image Detectors Oct. 2020 – now

- Built 5 individual face image detectors as follows: image calibration, key-point regressor, image object detection & classification & tracking, action recognition and semantic image segmentation and synthesis problems.

Automatic Image Caption Generator Sep. 2020

- Built a hybrid CNN-LSTM model using keras to generate a textual description for a given photograph.

COVID19: Pneumonia X-ray Image Classification Aug. 2020

- Built a convolution neural network model that can classify whether a given patient has pneumonia, given a chest x-ray image, from scratch with an accuracy up to **97%**

COVID-19: Chicago Crash Cause Classification Jul. 2020

- Built a **multi-class** classifier to predict the primary contributory cause of a car accident, given information about the car, the people in the car, the road conditions etc. A shallow machine learning model using Random Forest, Gradient Boosting and XGBoost achieved accuracy ranging from **85%** to **95%** and AUC between **0.98**-**0.99**

Brain Image Analysis Oct. 2016 – Apr. 2018

- Automated **MATLAB** batch scripts in use of conventional **SPM12** framework for fMRI brain image data analyses
- Experiences with pre-processing, calibration and regression modeling of spacial and time-series brain images
- Expertise in statistics models, e.g. GLM, ANOVA and MVPA, along with state-of-the-art **machine learning** skils

Data Analysis May 2009 – Oct. 2012

- Created a set of self-defined, mutually orthogonal variables to parameterize multivariate regression models that are expanded with different dimensions, to combine parameterized regression model with existing regression analysis in **C++** on Linux, to characterize various noises with patterns, to control noise sizes for optimization of detector performances through noise reduction and finally to choose optimal errors and corrections made to data in unit of **ppm** and/or **ppb** for experiments with a strong emphasis on high precision

Experiences

Flatiron School, Data Science Fellow Student Full-time Online, Apr. 2020 – now

- Accelerated 20-week statistics models, shallow, classical machine learning and modern deep learning program, focusing on doing real data science projects from Kaggle & UCI and developing artificial intelligence Apps

Los Alamos National Laboratory, Sr. Postdoc Los Alamos, NM, Sep. 2018 – Mar. 2020

- **Experimental high-energy nuclear physics** with **6** publications in top peer-reviewed journals

National Taiwan University, Machine Learning Researcher Taipei, Taiwan, Oct. 2016 – Apr. 2018

- **Consumer neuroscience**

Virginia Tech, Jr. Postdoc Blacksburg, VA, Apr. 2013 – Aug. 2016

- **Experimental neutrino physics** with **7** publications in top peer-reviewed journals

Syracuse University, Ph.D. Graduate Research Assistant Syracuse, NY, Aug. 2007 – May 2013

- **Experimental medium-energy nuclear physics** with **5** publications in top peer-reviewed journals

National Taiwan University, Master Graduate Research Assistant Taipei, Taiwan, Aug. 2002 – Jun. 2005

- **Experimental high-energy particle physics** with **1** publications in top peer-reviewed journals