Worasom Kundhikanjana, Ph.D.
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Summary

- Board range of technical expertise in data science and material science. Used machine learning (ML) in data inference, pattern identification, data driven decision-making and ML model deployment.
- Detail-oriented, able to independently design and rapid-prototype experiments in a start-up environment. Quick to embrace new technology.
- Six year experience leading a research group, organizing and planning research budgets
- Able to communicate effectively. Authored and co-authored 20 peer reviewed research articles

Education

Stanford University, CA: PhD/MS in Applied Physics, GPA 3.86/4.00 (2006 – 2013)
Brown University, RI: BS in Physics, *Magna Cum Laude*, GPA 4.00/4.00 (2002 – 2006)

Experience

Data Scientist (2019 – current), Python-based machine learning projects

- **Analysis of Air Pollution Data:** Enabled effective environmental policy change. Identifying main air pollutant sources. Scraped weather and Bangkok air pollution data, created an SQL database, visualized and feature engineered, identified extremely randomized tree regressor as optimal ML prediction model, and isolated main pollutant sources using feature of importance.
- **Health data**: Automatic liver patients identification from their blood test data. Feature selection from feature of importance. Achieved 78% accuracy on the validation set (baseline = 72%)
- **A/B Testing**: Analyzed data from the popular mobile game, Cookie Cats. Use bootstrap analysis to compare effectiveness of time pause at level 30 and 40 toward user retention
- **Image classification:** Identified oil palm plantations from satellite images. Use CNN (fast.ai). Tackle imbalance dataset using image augmentation. Achieved 99.4% accuracy.
- **Coursework**: SQL, ML, pyspark (DataCamp.com), deep learning and machine learning (fast.ai), Data Science (Harvard).

Principal Investigator and Lecturer, School of Physics, Suranaree University of Technology (Feb 2013 – Jan 2019)

- **Management**: Managed grants and funding for multiple projects; mentored graduate students
- **Quality Assurance**: Wrote QA status, statistics and performance report for graduate physics curriculum. Designed survey and provided insights to key stakeholders.
- **Teaching/Communication**: 6 years teaching experience in undergraduate/graduate physics classes. Designed and taught project-based classes, incorporated design thinking and rapid prototyping concepts
- **Research:** Investigated the properties of novel materials for memory device applications. Collaborated with Western Digital (Thailand), to solve corrosion problem in the production line. Used image analysis, data analysis, and data visualization techniques (python and MATLAB) to provide insight.

Research Assistant, Professor Zhi-Xun Shen Lab, Stanford University (Sep 2006- Jan 2013)

- **Start-up experience**: Develop novel microscopy technique for nanoscale imaging. Designed automatic hardware control and data acquisition programs in LabVIEW, later commercialized by lab spin-off company (PrimeNano Inc).
- **Image Analysis:** Processed and analyzed MIM images to segment and calculate correlation length of repeated patterns in images. Edge detection to segment the width of a quantum state. Image registration with cross-correlation.

Programing/Technical Skills

- **Python (**Machine Learning, Neural Networks, Time Series Modeling, Data Analysis, NLP, Visualization, Feature Engineering, Web Scraping, Image processing, Image segmentation, Geospatial Data Analysis), **Database** (SQLite, Postgres, MongoDB), **Distributed Computing** (Spark), **Git**, **Linux** (Bash)
- **Commercial Software:** Excel, MATLAB, LabVIEW, COMSOL