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Education

Texas A&M University — College Station, TX
Ph.D Candidate in Electrical and Computer Engineering. GPA: 3.7/4.0 — Aug 2014 - Dec 2021

Hanoi University of Science and Technology — Hanoi, Vietnam
Bachelor of Electronics and Telecommunications Engineering. Rank: 3/507 — Aug 2007 - June 2012

Technical Skills

- Programming Languages: Python, R, C/C++, MATLAB, Verilog/Assembly
- Data Analytics: NumPy, Pandas, Scikit-learn, XGBoost, Matplotlib, Spark, dplyr, caret, ggplot2, Shiny, SQL, Tableau
- Tools: Pytorch, Tensorflow, Keras, Jupyter, Django, Flask, Rails, AWS, Git, MS Office

Working Experiences

Texas A&M University, Electrical and Computer Engineering — College Station, TX
Research Assistant — Aug 2014 - Present

- **Variable selection for high-dimensional and large-scale survival data with grouped predictors**
  - Proposed algorithms for general design matrices in penalized Cox's model to enable practical applications including genomic datasets with over 100 thousands of genes
  - Achieved 60% higher TPR, 5% lower FPR, FDR, RMSE, and executed 100x faster than existing methods
  - Launched and maintained two R packages **grpCox** and **L1mstate** ($>$ **13k** downloads)
- **Rock formations' type identification in an automated drilling lab-scale rig**
  - Applied filtering, linear interpolation, FFT, down-sampling techniques to raw data; exported 20220 samples, 31 features
  - Implemented and evaluated different classifiers: RF, LDA, QDA, SVM, and ANN. Reached 99% prediction accuracy
- **Online movie recommendation system**
  - Built recommended movies models based on MovieLens dataset (27M) using collaborative filtering with MLlib-Spark
  - Scraped IMDb movies' details using BeautifulSoup. Built and deployed an online movie recommendation system with Flask and CherryPy, allowing user to view newest movies, recommended movies based on users' viewership history
- **Human cells and crowd counting using deep neural networks**
  - Carried out density-map approach to count human blood cells in fluorescence microscopic images dataset using different DNNs: U-Net, ASNet, MCNN, CSRNet, achieved up to 2.2 ± 0.5 from 3.5 ± 0.2 MAE baseline
  - Presented a comprehensive analysis of various DNNs for object detection in crowd counting: one stage detectors (YOLO, SSD), double stage detectors (R-CNN, faster R-CNN), end-to-end detectors (LSTM, Transformers)
- **Risk factor identification and transition prediction in heterogeneous disease progression**
  - Formulated variable selection and prediction problems as L1-regularized stochastic models (multi-state models) framework, increasing 10% AUC to 0.98, and reducing up to 80% run time

Teaching Assistant — Aug 2016 - May 2017

- **Embedded Systems Software**: Taught concepts and guided classes of 71 students to design, test and debug Verilog/Assembly and C/C++ programs for microcontroller systems
- **Random Signal and System**: Created all assignments, quizzes and exams about probability concepts necessary for study of signals and systems involving uncertainty. Conducted weekly recitation sessions of 49 students

Publications

- **Xuan Dang**, Shuai Huang, Xiaoning Qian. "Penalized Cox's Proportional Hazards Model for High Dimensional Survival Data with Grouped Predictors." *Statistics and Computing,* 2021
- **Xuan Dang**, Shuai Huang, Xiaoning Qian. "Risk Factor Identification in Heterogeneous Disease Progression with L1-Regularized Multi-State Models." *Journal of Healthcare Informatics Research,* 2020
- Xu Wang, Mustafa Alshawaqfeh, **Xuan Dang**, Bilal Wajid, Amina Noor, Marwa Qaraqe, Erchin Serpedin. "An Overview of NCA-based Algorithms for Transcriptional Regulatory Network Inference." *Microarrays,* 2015
- Son Thai, Hung Om, **Xuan Dang**, Long Tran, Dzung Nguyen, Thang Hoang. "Implementation of Fractal Image Compression on FPGA." *Conference on Communications and Electronics*, 2012

Honors and Awards

- **Vietnam Education Foundation (VEF) Fellowship**. 1 in 34 students selected nationwide — 2014
- **Honda's Young Engineers and Scientists Award**. 1 in 10 students selected nationwide — 2012
- 1^{st} **prize in National Students Physical Olympic** — 2009
- **GE Foundation Scholar-Leaders Scholarship**. 1 in 10 students selected nationwide — 2008