Hy (Gia) Dang

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PRINCIPAL INTERESTS
Natural Language Processing, Knowledge Graph, Data Mining, Machine Learning, Mental Health

ACADEMIC BACKGROUND

Ph.D. Computer Science and Engineering — Aug. 2022 - Present
University of Notre Dame, Notre Dame, IN
- Ph.D. research in Computer Science and Engineering under the supervision of Dr. Meng Jiang.

BS in Computer Science — Aug. 2017 - Dec. 2021
BS in Mathematics — Aug. 2017 - Dec. 2021
Texas Christian University, Fort Worth, TX — *GPA: 4.0/4.0*
- *Graduated with Summa Cum Laude*
- *Graduated with Departmental Honors*

RESEARCH EXPERIENCE

Stock Movement Prediction — Dec. 2020 - Mar. 2022
Texas Christian University
- *Apply Recurrent Neural Network to predict the movements of stock using historical information*
- *Build an architecture to capture valuable representations of information from the Twitter dataset*
- *Build a Machine Learning architecture combining historical and textual information for stock movement prediction problem*

Mechanics And Manipulation Of Active Structures — Jun. 2020 - Aug. 2020
Cornell University
- *Analyzed the mechanical properties of deformable structures using techniques from optimization and dynamical systems theory*
- *Developed methods for how the structures should alter their shape to achieve the desired goal*
- *Derived conditions that the particle-ring system must satisfy to be in static equilibrium by using methods from optimal control theory and considered the bifurcations that can occur as the interaction strength between the particles increases ("Bifurcations of an elastic ring with interacting particles" project)*

Wound Healing Modeling Using PDE And Deep Learning — Jun. 2019 - Dec. 2021
Texas Christian University
- *Solve a partial differential equation (PDE) that models wound healing by treating keratin as a diffusion process using approximation methods*
- *Develop and build automated algorithm to find the appropriate initial conditions and adapt various Deep Learning models (UNet, Res-UNet, Mask-RCNN) to accurately extract information from images*
- *Combine both numerical PDE and Deep Learning techniques in an automated system to predict the long-term behavior of wound healing*

Housing Price Prediction Research   *Apr. 2019 - Nov. 2019*
Texas Christian University

- *Predicted the housing prices of Beijing (China) using Machine Learning and Deep Learning*

- *Examined different Machine Learning methods for the problem*

Exploration Of Representation Theory Research   *Feb. 2019 - Oct. 2019*
Texas Christian University

- *Derived the patterns of an abstract algebraic group and built a program to identify the groups based on characteristics*

- *Learned different characteristics and properties of groups*

EMPLOYMENT HISTORY

Research Scientist Intern (AI & NLP)   *Aug. 2020 - Feb. 2021*
Knorex Pte. Ltd, Ho Chi Minh, Viet Nam

- *Used Word2Vec, fastText to improve bid phrase generation*

- *Processed returned seed words from Google API Targeting Services*

- *Applied various traditional Machine Learning and Deep Learning techniques to solve Call To Action (CTA) prediction problem*

- *Analyzed the creative dataset including structures and the relationships between components*

Machine Learning Intern   *May. 2019 - Jul. 2019*
FPT Software, Da Nang, Viet Nam

- *Predicted stock prices using historical dataset by implementing Machine Learning methods*

- *Processed customer data using Tensorflow and scikit-learn*

SPECIAL ACHIEVEMENTS

Awards & Grants

- **Student Research Symposium Best Poster/Presentation Award**, *Spring 2021*

- **Science and Engineering Research Center Grant**, *Fall 2019*

- **TCU Academic Achievement Award**, *May 2018*

- **TCU Scholars**

- **Dean's Honor List - TCU**

CONFERENCE CONTRIBUTIONS

2. **H. Dang**, *M. Nguyen, B. Mei, StTime-Net: Combining both Historical and Textual Factors for Stock Movement Prediction, in Proceedings of* International Conference on Artificial Neural Networks (ICANN), *Bristol, UK, 2022*

1. *Q. Truong, M. Nguyen,* **H. Dang**, *B. Mei, Housing price prediction via improved machine learning techniques,* Precedia Computer Science 174, 433-442

POSTERS PRESENTATIONS

4. **H. Dang**, *Wound Healing Modeling Using Partial Differential Equations And Deep Learning,* Presentation at National Collegiate Research Conference (NCRC), *Harvard University. 2022*

3. **H. Dang, L. Mantilla, S. Zhang, A. Borum**, *Bifurcations of an elastic ring with interacting particles,* Student Talk/Poster Session Presentation at the Canadian Undergraduate Mathematics Conference (CUMC), *Western University, 2020*

2. **H. Dang**, *Wound Healing Modeling Using Partial Differential Equations And Deep Learning*, Poster Presentation at the 3rd Annual Meeting of the SIAM Texas-Louisiana Section., *Texas A&M University, 2020*

1. **H. Dang**, *Wound Healing Modeling Using Partial Differential Equations And Deep Learning*, Student Talk at the Sixteenth Annual Texas Undergraduate Mathematics Conference (TUMC), *2021*