

# LI-YIN(LILY) YOUNG

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## RECENT PROJECTS

### Generation of Financial Time Series by GANs

Jan 2020 - Present

Advisor: Professor Yu-Jui Huang

- Developed machine learning architecture to approximating a realistic asset price for financial trading strategies. The Root Mean Square Error(RMSE) of the model is 0.1%.
- This work involved developing the architecture of generative adversarial networks (GANs) algorithm and writing highly optimized programs for investigating multidimensional data.
- Released open source library for recognizing feature in multidimensional objects to PyPI. The computational time is 50% less than Monte Carlo method.

### Stock price prediction using Hidden Markov Models

Mar 2017- Nov 2019

Advisor: Professor Yu-Jui Huang

- Processed the signals emitted from daily trading data to detect hidden state for daily stock.
- Built time series model with HMM and machine learning classifier to forecast stock price. The RMSE of the future stock price is 0.3%.

### Detect the hidden pattern using machine learning

July 2018-Feb 2020

Advisor: Professor. Xiaochuan Cai and Professor. Daniel Appelo

- Extracted patterns' information on any kind of geometric surface by finding the solutions of PDE using machine learning algorithm.
- Built a data-efficient deep learning algorithm using only 10% of data to achieve 95% accuracy.
- Distributed training across multiple nodes with MPI in Docker in Azure. The total time successfully drop down 88% after that.

## WORK EXPERIENCE

### Full Stack Developer

Main Street Exchange

Jun 2016 - Aug 2018

- Developed major functionality on the website's portal including form creation, form validation, page creation third-party app integration and database management.
- Integrated third party applications such as LinkedIn API and Adobe Sign API to the website.
- Working with scripting tools and virtual server environments to troubleshoot real-time system issues.
- Responsible for full stack web development, utilizing primarily MySQL, PHP, JavaScript.

### Machine Learning Engineer

TopicTechnology

Jan. 2016 - May 2016

- Engineered a natural language, concept search web application in angularjs backed by semantic role labeling.
- Built machine learning systems for extracting sentimental information to identify the market and competitive landscape.
- Created classifier with topic model for coping with large amount of unstructured text information from online media.

### Software Engineer Intern

Millennium Engineering & Integration

July 2014 - Aug 2014

- Built the support vector machine(svm) application on time series prediction with C++.
- Setup clusters to scale up training data and distribute the parameters on multiple machines.

## PUBLICATION

Li-Yin Young, **The Effect of Moderator bots on Abusive Language Use** *Proceedings of the International Conference on Pattern Recognition and Artificial Intelligence*. ACM, New York, NY, USA. 2018

## EDUCATION

### Master of Science, Applied Math, emphasis on machine learning

University of Colorado Boulder, Boulder, CO, U.S.A., Aug 2018 - May 2020

### Master of Science, Computer Science,

University of Colorado Boulder, Boulder, CO, U.S.A., Aug 2013 - June 2015

## SKILL

- Python, MySQL, C++
- Docker, Azure, Git, TensorFlow, Keras, MPI, multiprocessing, multithread, SciKit-Learn