Chen, Tianle

Contact: tianle@utstat.utoronto.ca
Website: tianle91.github.io

Education

- **University of Toronto** *PhD Statistics* (2017 - Current)
  - Coursework includes topics in Statistical Learning Theory such as PAC learning, Online learning and Boosting.
  - Received NSERC Engage (value of 25,000 CAD) and Mitacs Accelerate (value of 15,000 CAD) funding from 2017 to 2018 for research in demand forecasting at Rubikloud Technologies Inc.
  - Received Mitacs Accelerate (value of 10,000 CAD) funding in 2019 for research in market forecasting at TMX Group Inc.
- **University of Toronto** *MSc Statistics, GPA: 3.80/4.00* (2016 - 2017)
  - Coursework includes topics in Applied Statistics, Measure Theory and Machine Learning.
  - Performed teaching and grading duties for Probability, Multivariate Data Analysis and Statistical Methods for Machine Learning.
  - Awarded Ontario Graduate Scholarship - Masters (value of 15,000 CAD).
- **University of Toronto** *Hons BSc Statistics, GPA: 3.83/4.00* (2012 - 2016)
  - Awarded Dean's List (top 20^{th} percentile) for Years 2, 3, 4.
  - Awarded the Morneau Shepell Scholarship in Actuarial Science in Year 2 (value of 2,500 CAD) for coursework in Actuarial Science.
  - Received Undergraduate Student Research Awards (NSERC) in Years 3, 4 (value of 6,000 CAD each) for research in Loss Models and Reserving.

Experience

- **TMX Group** *Research Intern* (Jan 2019 - Apr 2019)
  - Developed a generative model for latent representation of market states and dynamics.
  - Clustering on latent representations reveals the market features that are useful in producing intuitive understanding of market state predictions.
  - Implemented an efficient algorithm in `Spark` to extract high-resolution features from orders and trade tables by efficiently distributing workloads over multiple workers.
- **Rubikloud Technologies Inc.** *Data Science Research Intern* (May 2017 - Dec 2018)
  - Developed a novel individualized demand forecasting model in `Tensorflow` for joint predictions for purchase arrival times over multiple products using a Recurrent Neural Network (LSTM).

  - The model is inspired by survival analysis and exploits partial information to obtain accurate and flexible predictions, beating state-of-the-art machine learning approaches.

- **University of Toronto** *Student Researcher - Reserving* (May-Aug 2016)
  - Implemented a Hidden Markov Model in which latent states determine true claim arrival intensity and reporting delay determines thinning parameters for the reported claim arrival process.
  - Showed that this model is much better able to predict the number of unreported claims compared to aggregate models.

- **University of Toronto** *Student Researcher - Ruin Theory* (May-Aug 2015)
  - Studied a common fund model where accounts receiving a steady cash inflow are also subject to random arrivals of losses while contributing to the common fund. In case of negative account value, these accounts withdraw from the common fund.
  - Showed the non-convexity of the feasible region (i.e. where individual accounts benefit by participating in the scheme) and estimated the intractable feasible region empirically, using an efficient sampling algorithm.

- **Dun & Bradstreet Singapore** *Database Assistant* (Dec 2011 - Aug 2012)
  - Automated formatting and verification procedures in the maintenance and updating of loan, litigation and publication records.
  - Developed a calling script and surveyed industry executives as part of the Business Optimism Index survey project.

Technical Skills

- Proficient in implementing and developing *neural networks* using `Tensorflow, Keras, Torch`.
- Experienced in working with *decision trees* using packages such as `XGBoost, LightGBM`.
- Proficient with *languages* such as `Python, R` and *database frameworks* such as `SQL` and `Spark`.
- Experienced with *version control tools* such as `Git` and operating in `Linux` environments.

Publications

- **Chen T.**, Keng B., Moreno J., *Multivariate Arrival Times with Recurrent Neural Networks for Personalized Demand Forecasting*, 2018, Published in Proceedings of IEEE ICDM 2018 DMS Workshop. Available on Arxiv: `https://arxiv.org/abs/1812.11444`.
- Badescu A.L., **Chen T.**, Lin S., Tang D., *A Marked Cox model for the Number of IBNR Claims: Estimation and Application*, 2018, To appear in ASTIN Bulletin.

Last Updated: April 1, 2019