

Chen, Tianle

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Experience

- **Rubikloud Technologies Inc.** *Data Scientist* (May 2019 - Current)
 - Building demand forecasting models for retailers to balance supply chain considerations and promotion campaign effectiveness.
 - Developed a general representation for promotion mechanics in order to produce accurate forecasts and to compare among different promotion types.
 - Implemented cloud-based feature extraction, training and inference pipelines on GCP with **Dataproc** and **Docker**-based virtual machines.
 - **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 **PySpark** to extract high-resolution features from orders and trade tables to capture detailed information regarding order book state and flows.
 - **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 adapts log-likelihood losses which exploit partial information to obtain accurate and flexible predictions, beating state-of-the-art machine learning approaches with minimal hyper-parameter tuning.
 - **University of Toronto** *Student Researcher - Reserving* (May-Aug 2016)
 - Implemented a Cox Process with random arrival intensities in **R**.
 - 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.
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Technical Skills

- Proficient in implementing and developing *neural networks* using **Tensorflow**, **Keras**, **Torch**.

- Experienced in *machine learning* packages such as `scikit-learn`, `XGBoost`, `LightGBM`.
- Proficient with *programming languages* such as `Python`, `R` as well as *database management and distributed computing frameworks* such as `Pandas`, `SQL` and `Spark`.
- Experienced with *version control tools* such as `Git` and operating in `Linux` environments.

Education

- **University of Toronto** *PhD Statistics, Withdrew from Program* (2017 - 2019)
 - 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 20th 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.

Publications

- Badescu A.L., **Chen T.**, Lin S., Tang D., *A Marked Cox model for the Number of IBNR Claims: Estimation and Application*, 2019, ASTIN Bulletin, Volume 49, Issue 3, pp. 709-739. <https://doi-org.myaccess.library.utoronto.ca/10.1017/asb.2019.15>
- **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. <https://arxiv.org/abs/1812.11444>

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