

LIU CHAORAN

WORKING EXPERIENCE

Munich Re | Senior Data Scientist | Singapore

Jul 2019 - Present

Enhanced underwriting & claim process deployment for clients

- Led analytic projects to streamline underwriting process for clients in Southeast Asia, Africa, and Middle East.
- Enriched decision coverage of existing rule-based automatic claim processing engine using predictive models.
- Built unsupervised & semi-supervised anomaly detection models to reduce claim fraud, waste, and abuse.
- Productionized real-time predictive models via API using Python FastAPI / R Plumber with Docker container.

R & D prototyping to improve team's AI solution offering

- Initiated visual BMI project from scratch, and end-to-end development from data collection to model serving.
- Designed a Tensorflow.js backed web demo using Vue.js to serve the vital signs prediction model in browsers.
- Developed a dynamic risk assessment tool for reflexive underwriting interview using reinforcement learning.

Internal knowledge integration to boost team's efficiencies

- Published multiple packages to standardize best-knowledge approaches, visualization styles & report formats.
- Led code review for both R & Python projects to ensure codes quality, documentation, and reproducible results.

NTUC Enterprise | Data Scientist | Singapore

Aug 2017 – Jul 2019

Analytics Infrastructure

- Built the personalization data mart, which is used by entire data science team for modeling and reporting.
- Set up analytic tools for the team, including Shiny server, Airflow, H2O & Superset on AWS.
- Designed a unified shiny based web portal for business users to consume data science deliverables.

Digital Advertising & Recommendation

- Developed the campaign targeting model for Plus! Engage, a commercial marketing solution by NTUC Link.
- Optimized the campaign leads allocation to maximize lifts subject to business rules & communication constraints.
- Built merchant & item recommendation engines for NTUC Link & FairPrice using LightGBM & DeepFM.

Coupang | E-Commerce Data Analyst | Shanghai, China

Jul 2016 – Jun 2017

- Re-ranked product search results using a pair-wise learning-to-rank model and improved ranking metric by 8%.
- Led product review ranking project and achieved 1.2% ranking metric improvement in online A/B test.

Aon Center of Innovations and Analytics | Data Analyst | Singapore

Sep 2015 – Jun 2016

- Led local market planning project by identifying cross-sell opportunities using collaborative filtering model.
- Built a healthcare expense estimator for US market to recommend suitable policy packages for customers.

Micron Technology | Process Engineer | Singapore

Sep 2011 – Dec 2014

- Improved workstation yield using statistical process control methods, design of experiment, hypothesis testing.

INDEPENDENT PROJECT

Data Story Blog (<https://www.ichaoran.com>) | Author

Jul 2015 - Present

- Blogged tutorials of tool setup & code snippets for algorithms, visualization & exploration of interesting datasets.

EDUCATION

National University of Singapore | Singapore

Jan 2014 – Jul 2015

- M.Sc. Industrial and Systems Engineering

Nanyang Technological University | Singapore

Aug 2007 - Jul 2011

- B.Eng. Chemical and Biomolecular Engineering

CERTIFICATES & AWARDS

- Deep Learning Specialization (5 courses) | deeplearning.ai **Feb 2018**
- Data Science and Engineering with Spark Specialization (3 courses) | edX Berkeley **Sep 2016**
- Data Science Specialization (9 courses + 1 project) | Johns Hopkins University on Coursera **Dec 2015**

RELEVANT SKILLS

- Data ETL: SQL(Hive/Presto/Impala/Netezza/Redshift), Spark, Airflow, AWS, Azure
- Modelling: R, Python, XGBoost, LightGBM, Keras, TensorFlow, H2O
- Visualization: Tableau, Shiny, HTML, CSS, JavaScript, Vue.js, ggplot2, plotly, Leaflet, DataTables
- Engineering: Linux, Bash, Docker, API wrapping (FastAPI/Flask/Plumber)