SUGARBAYAR ENKHBAYAR
https://github.com/SugarbayarEnkhbayar
Łomżyńska 03-762,Warsaw, Poland
Telephone: +48 50 571 99 26
Email: sugarbayar123@gmail.com, s.enkhbayar@student.uw.edu.pl

EDUCATION

M.A.	Data science and business analytics	University of Warsaw	Warsaw, Poland	Oct.2022 - Jul.2024
B.S.	Applied Economics	University of Finance and Economics	Ulaanbaatar, Mongolia	Sep.2014 - Dec, 2018
H.S.	-	Temuujin complex	Khentii, Mongolia	Sep.2004 - May 2014

JOB EXPERIENCE

Toktok LLC - Data analyst (remote)
March, 2023 - June, 2023 — Ulaanbaatar, Mongolia

- toktok is the food delivery company in Mongolia
- made analysis to help reduce delivery time and speed up deliveries
- evaluated what factors affect sales
- used a machine learning model to classify the suppliers into clusters and identify their attributes; it will highlight the internal and external elements that have the biggest impact on delivery times
- divide the clients into three groups based on value: the most, average, and least valuable users; determine the characteristics of each group.
- find the optimal ratio of old and new delivery drivers in day

Unitel LLC - Data analyst (full time)
March, 2021 - Aug, 2021 — Ulaanbaatar, Mongolia

- unitel is a Mongolian Corporate Group of information technology companies
- made analysis according to the request of other units
- main task was to define the target customers (who has a high probability of receiving an offer) and send offer message to their phone numbers, related to public holidays, seasons and marketing activations

Golomt Bank - Data analyst (full time)
Nov, 2018 - Dec, 2020 — Ulaanbaatar, Mongolia

- collaborate with assigned units and analyze data related to them
- create an interactive (updated daily) fully automatic dashboard and ensure their normal operation
- data analysis using statistical, econometric, and machine learning models
- our department works directly with all levels of employees and directors of the bank, so we work with all kinds of data and business units that may be related to the bank. That's why there is an opportunity to get knowledge about how all businesses operate, starting with ATM, credit, risk, resource management, POS, cards, and their data. We clean the data from the database ourselves, every job is not the same, so we meet with employees from different departments, understand their problems and how the business works, understand and analyze every necessary data from the smallest details
- One of the tasks is to identify processes that require a lot of manual work in the bank, work with them to increase work productivity, and reduce manual work by automating that work
- worked on bank statements to classify transactions, analyze ATM spatial data, ATM POS transaction analysis, and identify characteristics of users used on the black market
- a monthly risk assessment is conducted for all branches, it used to take 5 days to work with a huge excel file. I worked on it to reduce working time, and now It spend only 5 minutes
- 2 theoretical and practical courses on how to use the R program in daily work to simplify the work and how to use it in the field of data analysis for internal employees of the bank

Ikh Undrakh Talst LLC – Economist (part time)
May, 2018- Nov, 2018 — Ulaanbaatar, Mongolia

- this company is a mining export company
- make cost-profit analysis, make dashboard and present report monthly
- monitor and record mining costs

PUBLISHED ARTICLE

Sugarbayar, E. (2018). Bachelor thesis: Socio-economic factors affecting crime rate in Mongolia. Quarterly journal of theory and methodology of crime, 2019(2) 4-13.
https://criminology.mn/wp-content/uploads/2020/11/2019-%E2%84%962.pdf

- Criminal and macroeconomic panel data, Gary Becker's crime model, Fixed and Random effects Models
- The level of hidden crime in Mongolia is 0.2, and 2 out of 10 crimes are not registered. An increase in educational attainment reduces both violent and property crime, but property crime is reduced by 1.6 times more than violent crime. In other words, the education system makes people understand that stealing and robbery are wrong. This supports the hypothesis that education level reduces crime rates
- Violent crime does not increase when the economy grows, but property crime does. This is because when the economy is growing, people's consumption, especially the consumption of exotic things increases, and it is likely that it creates the motivation to steal.

UNPUBLISHED ARTICLE

Sugarbayar, E., & Nomin, B. (2023). *The Effect of Money Supply on the Performance of the Stock Market S&P 500. 2023*

Sugarbayar, E., & Sugarkhuu (2020). Pred*icting air pollution levels in mongolia, https://www.kaggle.com/competitions/ulaanbaatar-city-air-pollution-prediction/leaderboard*

Sugarbayar, E., & Gerelmaa, B. (2018). *Export problems faced by companies operating in Mongolia and ways to solve them*

Sugarbayar, E., & Mandakh, B. (2018). *Analysis of the factors affecting the difference in income of 21 provinces of Mongolia*

Sugarbayar, E., & Nomin, B. (n.d.). *Development of small and medium industries using geographical clusters. 2017*

Sugarbayar, E., & Amarbayasgalan, A. (2017). *Impact of government intervention and tax policy in the economy of Mongolia*

AWARDS

4th place	Kaggle competition: Predicting air pollution levels	2021
UFE	Student of the Year award (university of finance and economics)	2018
1st place	16th open scientific conference "Erdmiin shuvuu"	2018
3rd place	National econometric Olympiad team score	2018
3rd place	University of humanities open student scientific conference	2018
3rd place	Ways to develop SMEs open student scientific conference	2017
1st place	University of Finance and Economics UFE's Student Research Conference	1st place
1 gold, 2 bronze medals	KANGAROO International Mathematical Olympiad	2012-2014
Many medals	Mathematic and IQ olympiad's medals (regional and national olympiads)	2006-2014

ACHIEVEMENTS

Qualified for joint scholarship program between the Mongolian government and Polish NAWA	2022
High school graduate with top-tier performance in Mathematics, achieving the maximum score and ranking among the country's top 50 students (ЭЕШ математик 800 оноо)	2014

TECHNICAL SKILLS

Latex	make academic presentation, document and report
Excel	use formulas, navigating the excel interface, presenting data in basic visual charts, pivot tables
Word, Powerpoint	make document and ppt
SQL(MySQL, Postgres)	query optimization, data analysis, database management
Eviews	make cross and time series econometric model
R	Shiny, data manipulation, data cleaning, data visualization, dashboard, procedure, function, connect to the database, statistic analysis, econometric models, machine learning models
Python(Numpy, Pandas, matplot, sns,	data manipulation, data cleaning, statistical and econometric models, machine learning, deep learning, data visualization, function, connect to the database, web scrape, scikit-learn

keras, scikit-learn,flask...)	
Power BI	make dashboard
HTML, CSS	used for changing and developing dashboard design with R shiny
IDE	Jupyter notebook, RStudio, Visual Studio, Eview

LANGUAGES

English	certification of Central Language Proficiency Examination on CKC UW (valid until July, 2024)
Polish	B1 certification (Politechnika Krakowska im.Tadeusza kościuszki z siedzibą w krakowie)
Mongolian	mother tongue

MASTER COURSES

Unsupervised Learning
Statistics and Exploratory Data Analysis
R: data cleaning and imputation, basic visualization
Python and SQL
Introduction to Data Science
Web Scraping and Social Media Scraping
Machine Learning classification methods
Algorithms for Data Science
Advanced Programming in R
Advanced Econometric
Text mining and Social media mining
Negotiations
Machine Learning predictive models, deep learning
Big Data Analytics
Applied Finance
Advanced Visualization in R
Data Science - Consulting Approach
Credit Risk - methods of scorecards development in R
Bayesian time-series econometrics
Business process analysis and improvement in practice

PROJECTS

Web scrape	scraped upcoming concerts's data in Poland from concertful.com website using 3 approaches (Beautiful Soup, Scrapy, Selenium) • Scrapy is the fastest approach and selenium is the slowest approach
Algorithms for Data Science	time complexity, cases (optimistic, average, worst), linear search vs binary search, analyzing algorithms, running time and memory complexity, divide and conquer, fast sorting approaches(Insertion, merge, quick, ,Heap,), dynamic programming
Python and SQL	created a website using python flask. Website has user login, user registration and user profile pages. All of registered data is saved to SQLiteStudio database

OTHER

Master thesis - Currently, I am focusing on my master thesis. My main goal of my master thesis is applying classic(Ridge regression, K-nearest neighbors, Support Vector Machine, RandomForest, Xgboost, Gradient Boosting Decision Tree) and deep(ANN, LSTM, GRU) machine learning models to 7 major foreign exchange pairs. In other words, every model creates a trading system that produces buy and sell, only buy and only sell signals. Another one goal is comparing performance of classic and deep machine learning models to benchmark strategy and trend following strategy.
I considered 2 kinds of target variables such as simple return and log return. Also, I considered the following technical indicators as explanatory variables (EMA, MACD, RSI, STOCHASTIC, BB, CCI, ATR, WILLR, ADI, MOMENTUM).
Most machine learning models are likely to be overfit. So I decided to use randomizedsearchCV with a walk forward approach for hyperparameter tuning. When I compared my algorithm trading strategies, I used 2 kinds of significant tests (Economic significance - annualized information ratio and sharpe ratio, statistical significance - independent T test). At the end of the thesis, I did a backtest using the best trading strategy with a 1000 usd deposit. Currently, I am in the advanced stages of completing my thesis.