

# Saruul Khasar

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## SUMMARY

A former quantitative economics Ph.D. student with 5+ years of experience in forecasting, modeling, data analysis, data manipulation, and data visualizations.

## TECHNICAL SKILLS

Languages: Python (Pandas, NumPy, Matplotlib, Seaborn, Scikit-Learn, Statsmodels, Plotly), SQL (PostgreSQL, AWS RDS), R, HTML, CSS, JavaScript

Technologies and Frameworks: Git, Tableau, Power BI, Microsoft Excel, LaTeX, Eviews, Stata

## WORK EXPERIENCE

### Division of Financial Management, State of Idaho

Boise, ID

*Forecasting Economist | Data scientist*

Nov 2020 – present

- Developed a new statistical prediction model for Tax Relief Fund using SARIMA and Regression models; reduced testing set errors by approximately 30 percent, reported and re-evaluated the prediction outcomes every month.
- Designed, developed, and maintained relational database system for the State Personal Income tax on PostgreSQL; cleaned and manipulated 20+ years of raw Excel spreadsheets dated back to 1991 on Python.
- Built and maintained tax revenue and budget dataset dashboards on Tableau to help narrow down critical forecast model components and constant fine-tuning for revenue and budget forecast models.
- Constructed and maintained visualization codes for [monthly](#) and [quarterly](#) reports using Python visualization packages: matplotlib, seaborn, and plotly.
- Constructing State budget forecasting models by cleaning and manipulating datasets collected from multiple agencies; creating Tableau dashboards for preliminary descriptive analysis, and testing various models on R and Python simultaneously for the Top 10 budget components.

### NewPoint.io

Seattle, WA

*Data Analyst | Project Manager intern*

Jun 2020 – Nov 2020

- Cleaned and manipulated 8 million computers' specifications and settings dataset (size: 4GB) using AWS SDK for Python, and trained Random Forest and CatBoost models to predict the computer's probability of getting malware. Summarized findings on PowerBI dashboard and provided recommendations to the project owner.

### Central Bank of Mongolia

Ulaanbaatar, Mongolia

*Research Economist*

Mar 2015 – Aug 2018

- Produced financial data analysis on regular basis using regression and data visualization methods. Delivered reports and policy recommendations to decision-makers to help ensure the stability of the banking system with 14 commercial banks and 12 billion USD worth of assets.
- Conducted bank balance sheet and income statement analyses and identified early signs of bank liquidity problems using stress tests. Provided 260 million USD worth of emergency loans to banks with liquidity problems.
- Published Macropprudential Policy analysis [research paper](#) in The South East Asian Central Banks (SEACEN) Research Journal.

## EDUCATION

### University of Washington, Seattle

*MA in Econometrics and Quantitative Economics*

Sep 2018 – Jun 2020

Coursework: Advanced Statistics, Programming, Database Management, Time-Series Analysis

### University of Michigan, Ann Arbor

*MA in Applied Economics*

Sep 2013 – Dec 2014

Coursework: Statistics, Quantitative Methods, Econometrics, Applied Business Forecasting

### National University of Mongolia

*BA in Economics*

Sep 2008 – Jun 2013

Coursework: Linear Algebra, Econometrics, Mathematical Economics, Economic Modeling