Mend-Amar Badral

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EDUCATION

National University of Mongolia June 2025
Bachelor of Science *Ulaanbaatar, Mongolia*

- Applied Mathematics
- GPA 3.2/4.0
- Thesis: **Evaluating land degradation using image processing and machine learning methods**
- Relevant Coursework: Probability Theory, Optimization, Machine Learning, Artificial Intelligence

WORK EXPERIENCE

Center for Mathematics Applications October 2023 - June 2025
Undergraduate Research Student *Ulaanbaatar, Mongolia*

- Participated in pastoral land drone flight image collection.
- Developed an image analysis and statistics calculation pipeline in Python (1000+ lines) for segmenting weeds from drone images
- Utilized PyTorch for testing open source models and datasets for weed detection problem
- Utilized GIS programs (ArcGIS and QGIS) and photogrammetry softwares for displaying overall orthomosaic from drone images.

AWARDS

Stipendium Hungaricum Scholarship September 2025
Hungarian Government Scholarship

PROJECTS

Sinusoidal function interpolation Bishop's Deep Learning book example February 2025

- This example is adapted from (Bishop 2023)* book and I have reproduced computational results.
- Published on my blog website using Julia's Pluto notebook environment.

Train cargo simulation May-June 2025
Seminar with Industry 2025

- Simulated optimal train cargo loading sequences, demonstrating up to ₮450M (~$130K) annual cost savings by reordering cargo allocations in smart way.
- Built data pipeline using Python and pandas, enabling fast iteration on cargo ordering logic.
- Collaborated on GitHub with 10+ code contributions across a multi-author project.

UNIVERSITY LEADERSHIP

Hackum Club Member
Responsibilities

- Participate and help in organizing various programming training events

SKILLS & INTERESTS

- **Programming:** Python, Julia, Bash, Linux
- **Languages:** English (C1 proficiency IELTS 8.0), Mongolian (native)
- **Interests:** Deep Learning, Computer Vision, Travelling, Futsal

**Bishop 2023, Deep Learning : Foundations and Concepts*