

# Batsambuu Batbold

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## EDUCATION

**Macalester College** | St. Paul, MN | Expected May 2027 | **B.A. Mathematics & Computer Science** | GPA: **3.97/4.0**

**Relevant Coursework:** Statistical Machine Learning, Computational Linear Algebra, Software Design, Algorithms.

**Awards:**

- **1st Place**, ASA DataFest Macalester (March 2025)
- **1st Place**, Macalester Local Programming Contest (April 2025)

**United World College Maastricht** | Netherlands | May 2023

International Baccalaureate Diploma (**43/45**), Bilingual Diploma.

**IMO Bronze Medalist & Honorable Mention** (2020, 2021) - [International Mathematical Olympiad](https://www.imo-official.org)

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## EXPERIENCE

**Mathematics Consultant (Frontier AI)** | Mercor (Remote) | Dec 2025 - Feb 2026

- Authored original, IMO-level mathematical problems in Algebra, Combinatorics, and Number Theory to benchmark and train next-generation AI models.
- Evaluated State-of-the-Art (SOTA) AI-generated proofs, identifying subtle logical flaws and ensuring rigorous mathematical precision.
- Developed comprehensive "chain of thought" solutions using LaTeX, creating high-quality datasets to improve model reasoning capabilities

**Full Stack Developer & Organizer** | Young Mathematicians of Khuvsgul NGO | May 2019 - Present

- Architected a comprehensive [LMS platform](#) using **Next.js 16**, **TypeScript**, and **PostgreSQL (Supabase)** to host math courses and manage contests for 60+ annual participants.
- Designed a relational database schema to model complex dependencies between courses, users, and problem attempts, and implemented Role-Based Access Control (RBAC) for admin security.
- Organized free summer mathematics programs for rural students in Mongolia, improving access to STEM education.

**Undergraduate Preceptor** | Macalester College | Jan 2024 - Present

- Facilitate learning for undergraduate courses, including **Computational Linear Algebra**, **Linear Algebra**, and **Intro to Computer Science**.

**Teaching Assistant** | Delgermurun Secondary School | Summer 2025

- Prepared students for the International Math Contest for Juniors; coached one student to a Silver Medal.
- Designed and maintained a [Quarto website](#) to host interactive math, programming, and English lessons.

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## TECHNICAL PROJECT

[\*\*Procedural Map Generator \(Capstone\)\*\*](#) | Python, NumPy, Streamlit, Blender | Fall 2025

- Engineered a procedural terrain generation engine using **Voronoi Diagrams** and **Perlin Noise** to create organic, 50,000+ polygon worlds.
- Deployed an interactive "Playground" web app using **Streamlit** for real-time parameter tuning and seed visualization
- Built an automated pipeline to export generated heightmaps/colormaps to **Blender** for 3D cinematic rendering

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## SKILLS

**Languages & Tools:** Python, Java, C++, TypeScript, SQL, R, JavaScript, HTML/CSS.

**Frameworks & Tools:** React, Next.js, Node.js, Git, Blender, LaTeX, Supabase, Quarto.

**Technical Areas:** Data Structures & Algorithms, Object-Oriented Programming, Statistical Analysis and Visualization.

**Soft Skills:** Problem-Solving, Communication, Adaptability, Time Management, Rapid Learning