

# Ryan Yeshaya Batubara

Rising Data Scientist with advanced  
Computer Science and Mathematics background.

✉ ryan.y.batubara@gmail.com  
🌐 github.com/rybplayer

## EDUCATION

**University of California, San Diego** 2022 – 2026  
Math-Computer Science, Data Science Double Major **3.97 GPA**

- **Key Coursework:** Machine Learning, Recommender Systems, Databases, Statistics, Linear Algebra, Graph Theory
- **Activities:** SUMS Math Club Workshops Chair, Origami Club

## PROJECTS AND POSITIONS

**UCSD Historical Enrollment Project** Sept 2023 – Present  
[github.com/UCSD-Historical-Enrollment-Data/](https://github.com/UCSD-Historical-Enrollment-Data/)

- Scraped enrollment of 40000 UCSD classes/hour using Rust, Kubernetes, and Tmux on a Digital Ocean Droplet.
- Plotted 100s of GBs of enrollment data into 1000s of class plots / month using Python, Matplotlib, and Github Actions.
- **Technologies:** Rust for scraping · Python, Matplotlib for analysis · DigitalOcean, Tmux, Powershell, Github, for management

**CSE PACE Undergraduate Mentor** Sept 2023 – Present  
[pace.ucsd.edu](https://pace.ucsd.edu)

- Collaborated with other mentors in paid fellowship to guide first-year computing undergrads on academic, career, and technical topics.
- Organized food and event logistics for 100s of mentees weekly.
- Implemented latest CS educational research into mentor activities, based on UCSD and international faculty leadership.
- **Skills:** Presentation · Collaboration · Mentorship · Communication

**GPU Computational Artin-Mazur Height** Jan 2024 – Present  
[github.com/UCSD-computational-number-theory/GPUFiniteFieldMatrices.jl](https://github.com/UCSD-computational-number-theory/GPUFiniteFieldMatrices.jl)

- Wrote first open-source Julia and CUDA.jl finite field linear algebra library, 1000 times faster than previous C implementations.
- Collaboratively optimize Artin-Mazur height computations to parallelize on the GPU using Quasi-F splits and Fedder's Criterion.
- **Technologies:** Julia, CUDA.jl for coding · Git, Supabase, Bash for management · LaTeX for writeup · Abstract Algebra for optimization

## SKILLS

- 🔗 Python · Julia · C/C++ · Matlab · R  
SQL · Kubernetes · Docker · Rust  
Qiskit · Regex · ARM · Java  
Git · Github · Bash · Powershell
- 📦 PyTorch · TensorFlow · Pandas  
Supabase · PostgreSQL · ScikitLearn  
Seaborn · Plotly · Matplotlib
- 📊 Machine Learning · Data Structures  
Data Visualization · Algorithms
- 🗣️ English · bilingual proficiency  
Indonesian · bilingual proficiency

## ARTICLES AND TALKS

- |              |   |
|--------------|---|
| DATA SCIENCE | AirBnB ML Predictor<br><a href="https://rybplayer.github.io/AirBnB-Predictor/">rybplayer.github.io/AirBnB-Predictor/</a><br>Power Outages ML<br><a href="https://rybplayer.github.io/PowerOutagesML/">rybplayer.github.io/PowerOutagesML/</a> |
| READINGS     | Post-Quantum Cryptography<br>Commutative Algebra<br>Affine Toric Varieties<br>Algebraic Topology  |
| MATH         | Puzzle Uniqueness Theorem<br>History of Math Puzzles<br>Computational Origami<br>Modern Origami Applications<br><a href="https://github.com/rybplayer/Talks">https://github.com/rybplayer/Talks</a>   |

## ACHIEVEMENTS

- 2018 World Mathematics Invitational  
**Bronze Medal** at *Seoul, Korea*
- 2019 World Mathematics Invitational  
**Bronze Medal** at *Fukuoka, Japan*

## INTERESTS

Guitar · Video Games · Puzzles  
Metal Crafts · Ink Drawing · PC Building

