

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**

- **Coursework:** Quantum Computing, Recommender Systems, Machine Learning, Abstract Algebra, Graph Theory, Mathematical Statistics, Probability, Numerical Analysis, Game Theory
- **Readings:** Commutative Algebra, Toric Varieties, Alg. Topology
- **Activities:** SUMS Math Club Workshops Chair, Origami Club

PROJECTS AND POSITIONS

UCSD Historical Enrollment Project Sept 2023 – Present
github.com/UCSD-Historical-Enrollment-Data/

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

CSE PACE Undergraduate Mentor Sept 2023 – Present
pace.ucsd.edu

- Paid fellowship to work with other mentors in guiding first-year computing undergrads on academic, career, and technical topics.
- Organized food and event logistics for 100s of mentees weekly.
- Worked with UCSD and international faculty to conduct research on the educational climate of CS education, and integrating these latest lessons into student cohort activities.
- **Skills:** Presentation · Collaboration · Mentorship · Communication

GPU Computational Artin-Mazur Height Jan 2024 – Present
github.com/UCSD-computational-number-theory/GPUFiniteFieldMatrices.jl

- Create first open-source Julia and CUDA.jl library for linear algebra over finite fields, 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 | Power Outages Analysis |
| SCIENCE | AirBnB ML Predictor |
| MATH | The Puzzle Uniqueness Theorem |
| | History of Math Puzzles |
| | Computational Origami |
| | Modern Origami Applications |

ACHIEVEMENTS

- | | |
|------|--|
| 2019 | Bronze Medal
World Mathematics Invitational
<i>Fukuoka, Japan</i> |
| 2018 | Bronze Medal
World Mathematics Invitational
<i>Seoul, Korea</i> |

INTERESTS

- | | |
|---------|--|
| MUSIC | Fingerstyle and Clasical Guitar
Yamaha Certified Guitar Teacher |
| HOBBIES | Video Games, Puzzles, Crafts,
Ink Drawing, PC Making |