



# MATTHEW JOSEPH R. BANAAG

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72 President Quezon St., Teoville West, Paranaque City, Philippines

## AREAS OF EXPERTISE

- ETL tools
  - dbt
  - Makefile
  - Apache Hop
  - Pentaho
  - Talend
  - SQL
  - Airflow
  - AWS CDK
- Backend developer
  - Javascript
  - NodeJs
  - MongoDB
- Complex systems modeling and analysis
  - Python (Pandas, Numpy, matplotlib)
  - Julia
  - Java (Processing)
- Agile software development
- Familiar with GitHub/GitLab, Slack
- Office Suite: MS Office
- Adobe Photoshop

## CERTIFICATIONS

- Google Cloud Certified Professional Data Engineer:  
[tinyurl.com/fsdyedhv](https://tinyurl.com/fsdyedhv)

## LANGUAGES

Both written and spoken

- English (Native)
- Filipino (Native)

## PERSONAL PROFILE

A researcher at heart, I am interested in solving problems that are complex in nature. I value work well done, no matter how small the task may seem. I am no stranger to challenges, and recognize that hard work beats talent when talent doesn't work. Through my knowledge and experience in Physics and dealing with complex systems, I find creative solutions to modern problems.

## WORK/RESEARCH EXPERIENCE

- **LENA - Lately, Everything Needs Analytics, Aug 2023 - Present**
  - **Data Engineer**
    - Creating Amazon Glue jobs and orchestrating them with AWS CDK or Airflow
    - Orchestrate data pipelines through Snowflake Tasks and dynamic tables
    - Create data pipelines through dbt
    - Data modeling based on assessed business requirements
- **World Bank**
  - **Assistant IT Specialist, Aug 2023 - Present**
    - Help create concept notes for projects with the Department of Agriculture
    - Advise and recommend regarding database architectures and systems
    - Create PoCs and provide trainings on setting up database architectures
    - Assess data governance policies and give recommendations
  - **Consultant, Mar 2022-Jul 2022**
    - Collaborated with an international team on providing technical insight on the development of an intervention monitoring system that harmonizes data from different programs
    - Dealing with clients, discussing and managing the technical aspects of the assistance
    - Provided capacity building sessions to the Department of Agriculture
- **MaroonStudios Inc.**
  - **Lead Data Engineer, Jan 2023-Aug 2023**
    - Designing and implementing data pipelines for ETL projects
    - Creating PoCs for projects that require data migration and/or data visualization
    - Hold trainings for data migration and data visualization for both technical and non-technical staff
    - Train and lead a team of data engineers, upskilling the backend engineers
  - **Data Engineer and Tech Lead, Nov 2021-Dec 2022**
    - Leading software development projects
    - Heading data migration for multiple projects
    - Helped finish and close a 3 year project
    - Onboarded new backend engineers and trained them to use our tech stack
  - **Jr Software Engineer, Aug 2020-Nov 2021**
    - Managed the backend solutions for multiple projects of various complexity
    - Helped train new backend engineers and manage code integrity across different projects
    - Created a test generator that will generate a randomized exam where one can set which questions should appear in sequence and can set the difficulty parameter of each question so that one can dictate how difficult the exam should be
- **CSG Epidemiology Team**
  - **Member, 2020**
    - Helped in the creation of toy models to understand the transmission of COVID-19 in the Philippines and constructed a transport network of the Philippines' ports and airports
- **Instrumentation Physics Lab 2017-2023**
  - **Member**
    - Researched mainly on different methods of simulating granular dynamics, optimizing algorithms by up to 70%
    - Organized the application process of the Instrumentation Physics Lab
    - Mentor undergraduates in their research problems

## AWARDS

- University Scholar GWA 1.0-1.45 (AY 2020-21 & AY 2021-2022 1st sem)
- Angelo King Scholar 2017-20
- College Scholar GWA 1.45-1.75 (AY 2015-16 1st sem, 2018-19 2nd sem, 2019-20 1st sem)
- Bronze Medal University Physics Contest 2018 (<http://www.uphysicsc.com/home.html>)
- **UP Physics Association**
  - **President, 2019-2020**
    - Led the rebuilding of the organization ground up
    - Helped set foundations for the organization's future growth by establishing guidelines on running events and managing people

### Trainings and Conferences

- Trainocate, Architecting with Google Compute Engine, 2023
- Alibaba Cloud Summit, 2022
- Google Cloud Platform: Professional Data Engineer, 2021
- Samahang Pisikang Pilipinas 2018, 19, 20

## EDUCATION

### UNIVERSITY OF THE PHILIPPINES, DILIMAN

#### Master of Science in Physics, 2023 | Excellence in graduate studies

- Thesis: In silico generation of granular heaps using a cellular automaton model for analyzing heap conductivity
- Did research on complex granular systems
- Optimizing numerical methods for simulating granular systems

#### Bachelor of Science in Physics, 2020

- Thesis: Statistical dynamics of a thin-layer granular system confined in a horizontally vibrated box

## PUBLICATIONS

- Experimental determination of configurational states present in conducting granular heap of disks, SIS Roxas, MJR Banaag, and JY Bantang, Samahang Pisika ng Pilipinas Conference 2021
- Excitation of a conserved lattice gas model as a possible toy model for granular systems, MJR Banaag, and JY Bantang, Samahang Pisika ng Pilipinas Conference 2020
- Dynamics of a singular particle on a 1D oscillating floor, MJR Banaag, and JY Bantang, Samahang Pisika ng Pilipinas Conference 2019
- Dynamics of an elastic particle in a horizontally oscillating one-dimension box with a non-frictionless floor, MJR Banaag, and JY Bantang, Samahang Pisika ng Pilipinas Conference 2018