Joseph Gregory Z. Cabinta, RCh, MSc

Computational Scientist / Data Analyst
Manila, NCR ● jcabinta@gmail.com ● 09175196809 ● linkedin.com/in/joseph-gregory-cabinta/ ● josephgzc.github.io/

TECHNICAL SKILLS

SQL | Python | Pandas | NumPy | Seaborn | Matplotlib | Power BI | Fortran | Excel | Jupyter

EXPERIENCE

Virtual Biochemical Exploration Lab, Institute of Chemistry, UP Diliman, Q.C.
Premier Computational Chemistry Lab in the Philippines

Graduate Researcher September 2022 – present

Research Topic: Metal Frameworks (MOF) for Water Treatment

- Performed cross-system analysis of MOF simulations using SQL queries, analyzing 3M+ line entries and reducing processing time by 200% compared to single-trajectory workflows.
- Leveraged spatial analysis in Python (Pandas, NumPy) for strategic framework functionalization, resulting in a 46% improvement in simulated pollutant removal efficiency (from 60% to 88%).

Research Topic: Carbon Nanotubes as Distillation Alternative

- Deployed SQL for spatial analysis of solvents, identifying entry tendencies in carbon nanotubes and determining key geometric factors influencing confinement and separation.
- Built a standardized pipeline in Python and Bash for assembling nanotube systems, reducing setup time to under 5 minutes and streamlining training for undergraduate researchers through simplified, reproducible workflows.

Research Assistant January 2021 – August 2022

Research Topic: Monoterpenes as Biopesticides

- Centralized multi-resolution MD outputs into a relational SQL framework, organizing over 4 TB of simulation data and reducing structure comparison by 1/10 of the original time.
- Performed Python-based structural metrics (RMSD, B-factor) on SQL-filtered structures, revealing flexible regions likely contributing to species-specific receptor behavior.

Research Topic: Aerosol Formation Descriptors

- Leveraged Pandas and Dask in Python to process 5M+ simulation data entries, using grouping functions to analyze how mole fraction affects cluster sphericity and size—identifying miscibility as a key factor in influencing aerosol morphology.

EDUCATION & LICENSE

MS Chemistry, University of the Philippines Diliman — September 2022 – December 2024
BS Chemistry, University of the Philippines Diliman — August 2015 – July 2020
Licensed Chemist**,** issued by PRC — December 2021

SPEAKING & TECHNICAL WRITING HIGHLIGHTS

- Presented at 36th and 37th Philippine Chemistry Congress, annual conference of chemists in PH
- Published in Scopus-indexed international journals, ACS Omega and Journal of Physical Chemistry