

JOHN RICK DOLOR MANZANARES

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EDUCATION AND WORK EXPERIENCE

Marie Skłodowska-Curie Actions Fellow

Dioscuri Centre in Topological Data Analysis

📅 1 October 2024 – Present

📍 Warsaw, Poland

DOST-SEI CIP Graduate Fellow

Self-Employed

📅 16 October – 31 December 2023, 3 January – 15 September 2024

- Class balancing of the image dataset for the plastic object detection model.
- Trained object detection model using images from various sources.
- Performance evaluation of the trained YOLO object detection models.
- Class activation mapping for identifying regions of interest by the model.
- Conducted citizen science events for high school and university students.
- Co-advised undergraduate thesis students and student assistants.
- Assisted in the literature review of monitoring tools for plastic pollution.

Data Analyst

Offshore Concept BPO Services, Inc.

📅 29 March - 29 May 2023

📍 Baguio City, Philippines

Master of Science in Mathematics

University of the Philippines Baguio

📅 August 2018 – July 2022

Research Assistant

Self-Employed

📅 16 June – 15 September 2022, 16 October – 15 November 2022

- Contributed to the self-assessment report of the Department of Mathematics and Computer Science (DMCS) at University of the Philippines (UP) Baguio
- Module writer for a calculus course offered by the DMCS at UP Baguio.

Teaching Associate

University of the Philippines Baguio

📅 February – June 2021

📍 Baguio City, Philippines

Bachelor of Science in Mathematics

University of the Philippines Baguio

📅 August 2014 – May 2018

PUBLICATIONS

- Ignacio, P.S., Bulauan, J.-A., & Manzanares, J.R. (2020). A Topology Informed Random Forest Classifier for ECG Classification. In 2020 Computing in Cardiology Conference (CinC). 2020 Computing in Cardiology Conference. Computing in Cardiology. <https://doi.org/10.22489/cinc.2020.297>

SOFT SKILLS

Critical Thinking

Curiosity

Listening

Openness to Criticism

Problem Solving

Communication

Work Ethic

HARD SKILLS

Computer Vision

Data Analysis

Data Visualization

Database Management

Natural Language Processing

Machine Learning

Statistics

Web Scraping

PROGRAM KNOWLEDGE

Git

Java

Julia

PostgreSQL

Python



ASSOCIATED LIBRARIES

Beautiful Soup

Keras

Matplotlib

NumPy

pandas

PyTorch

scikit-learn

SciPy

Seaborn

spaCy

statsmodels

LANGUAGES

English



HOBBIES

Badminton

Hiking

Minesweeper

Sudoku

Table Tennis

Video Games

PREPRINTS

- **Manzanares, J. R. D., & Ignacio, P. S. P. (2022).** Stable Homology-Based Cycle Centrality Measures for Weighted Graphs. *arXiv preprint arXiv:2208.05565*.

SCIENTIFIC MEETINGS ATTENDED

TDA Week 2023

📅 31 July – 5 August 2023 📍 Kyoto University, Japan

- Poster Presentation (Master's thesis)
- Related Fields : TDA, Persistent Homology

Geometry and Topology meet Data Analysis and Machine Learning

📅 31 July – 2 August 2021 📍 Zoom (Online), The Ohio State University

- Poster Presentation (Master's thesis)
- Related Fields : TDA, Persistent Homology

Computing in Cardiology 2020

📅 14 September – 17 September 2020 📍 Hybrid (Rimini, Italy)

- Poster Presentation
- Twelve-lead Electrocardiogram (ECG) Classification
- Related Fields : TDA, Machine Learning

RESEARCH PROJECTS

Evaluation of Citizen-Sourced Data for Plastic Object Detection

📅 January 2024 – Present 📍 QuICMaPP Facility, Philippines

- Surveyed robust statistical methods for data analysis.
- Written an initial manuscript for publication.

AI-Assisted Labeling for YOLO Plastic Object Detection Model

📅 November 2023 – June 2024 📍 QuICMaPP Facility, Philippines

- Co-adviser for undergraduate bachelor's thesis.

YOLO Object Detection Model for Macroplastics

📅 October 2023 – Present 📍 QuICMaPP Facility, Philippines

- Used the YOLO algorithm to train an object detection model for plastic objects.
- Supervised student assistants for data generation and annotation.
- Supervised interns for model training and report writing.

Stable Homology-Based Centrality Measures for Weighted Graphs

📅 2019 – 2024 📍 University of the Philippines Baguio

- Implemented an algorithm to find merging history of holes.
- Data analysis for quantifying holes in the underlying shape of data.
- Programming Languages : Julia

A Topology Informed Random Forest Classifier for ECG Classification

📅 February 2020 – September 2020 📍 University of the Philippines Baguio

- Generated the persistence landscapes of data for feature vectorization.
- Analyzed importance of features for the random forest model.
- Programming Languages : Python

CERTIFICATES / CERTIFICATIONS

Machine Learning Scientist with Python Career Track

📅 29 July 2024 📍 DataCamp

Data Scientist Associate

📅 Expires on 8 September 2025 📍 DataCamp

DeepLearning.AI Tensorflow Developer

📅 18 May 2023 📍 Coursera