

PIYAKRIT WONGBOONCHAI

[GitHub](#)

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RESEARCH EXPERIENCE

Ministry of Public Health, Thailand

2024 - Present

Research Intern at the Department of Medical Sciences

Supervised by Dr Surakameth Mahasirimongkol.

- Contributed to Genomics Thailand (GeTH), an extensive collaborative research network to enable national precision medicine.
- Worked on GeTH projects to integrate genomic medicine to clinical services by developing a digital database for diseases and characterising pharmacogenes:
 - Ran genome-wide association studies (GWAS) to explore genetic variants linked with drug-induced severe cutaneous adverse reactions (SCARs) and adverse events following immunisation (AEFI).
 - Performed *Mycobacterium tuberculosis* structural variation (SV) analysis using multiple SV callers (IMSindel, Manta) and GATK4 for single nucleotide variation (SNV) calling.
 - Collaborated with medical scientists and curated BRCA1/2 variants based on guidelines provided by the American College of Medical Genetics (ACMG, 2018) to construct a database for Thai breast cancer variants.
 - Developed and deployed pipelines to Amazon Web Services (AWS) for scaling up demanding computational tasks, such as large GWAS analyses (>1,000 samples and >900,000 SNPs).

University of York, UK

2023

Research project supervised by Prof Jeremy Mottram & Dr Joana Faria.

- Utilised precision gene editing to characterise post-translational nuclear proteins in *Leishmania mexicana*.
- Employed bioinformatic tools (HMMER and AlphaFold2) to infer protein structural properties.

University of Bristol, UK

2022

Dissertation supervised by Prof Rafael Carazo-Salas.

- Applied image segmentation and classification methods for tracking individual human pluripotent stem cells to map differentiation pathways.
- Extracted biological features to predict differentiation characteristics, such as differentiation marker expression, cell cycle length, cell migration distance and cell velocity.

Ministry of Public Health, Thailand

2021

Internship supervised by Dr Surakameth Mahasirimongkol.

- Conducted genomic analysis of SARS-CoV-2, focusing on the Spike and Nucleocapsid proteins, to monitor viral evolution within Thailand.
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TECHNICAL SKILLS

- Python, R, Unix (shell scripting), Cloud & Virtual Machine (VM) computing, Conda
- **Bioinformatics:** Phylogenetics, GWAS, Whole-genome/-exome Analysis, Structural Analysis

EDUCATION

Master of Science (MSc) in Biomedical Sciences

University of York, UK

2022 - 2023

- Activities: Biodiversity Community Project
- Modules: Data Analysis & Programming; Research, Professional & Team Skills

Bachelor of Science (BSc Hons) in Biomedical Sciences

University of Bristol, UK

2019 - 2022

- Modules include: Cellular and Molecular Pathology, Immunology, Pharmacology

International Baccalaureate Diploma Programme (IBDP)

Gjøvik High School, Norway

2017 - 2019

- Main subjects: Biology, Chemistry, English Language & Literature
- Extended essay project: *Investigating Seasonality Effects on Cyanobacterial Growth in Norwegian Lakes*

CONFERENCES & WORKSHOPS

- **Omics Workshop** - 17 - 20 March 2025, hands-on multi-omics course hosted by the London School Hygiene and Tropical Medicine.
 - Techniques ranging from: phylogenetics and molecular clocking, transcriptomics, machine learning.
 - **AWS Genomics Community Day** - 3 – 4 March 2025, workshop hosted by Amazon Web Services (AWS)
 - Explored cloud-based genomics workflows with AWS HealthOmics.
 - **MedHackathon Asia 2025** - 3 – 7 February 2025, hosted by MedHackathon Asia
 - Participated in the planning of a standardised Pan-Asian imputation pipeline to improve precision medicine across Asia.
 - Collaborated with data scientists to solve a hackathon problem.
 - Developed an awareness for common issues among Asian countries regarding genomic data management.
 - **AI in Genomics Medicine** - Seminar hosted by British Embassy Bangkok with speakers from Genomics England and Incubator for AI UK (ai.gov.uk), 2025
 - Explored the successes and challenges, both technical and policy-based, for AI applications in British healthcare and research.
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PROFESSIONAL MEMBERSHIPS

- **Thai Society of Human Genetics**, 2024 - present

AWARDS

- Thai Society of Human Genetics travel grant for MedHackathon Asia, 2025

RELEVANT EXPERIENCES

Analyst

2023 - 2024

- Performed data analysis to improve operations and identified business opportunities, projects include:
 - Real estate development and palm oil optimisation

Volunteer

2023

Rowntree Park Biodiversity Survey

- Volunteered for York Community Projects, where I worked in a team of 6 volunteers to assist the Friends of Rowntree charity to address issues on flooding.
- Organised surveys to analyse plant growth and soil condition for the Pollinator Project.
- Presented findings to stakeholders of the park and provided actionable recommendations for future development.

Tutor

2017 - 2018

- Provided individual tutoring to primary school students at Gjøvik International School for several subjects, such as Mathematics, English and Norwegian while undertaking my IB diploma.

COURSES

- [Infectious Disease Omics](#) - London School of Hygiene and Tropical Medicine
- [Intermediate Machine Learning](#) - Kaggle
- [Data Science for Everyone](#) - FutureSkill

HOBBIES & INTERESTS

- **Gardening & DIY**
 - **Rifle shooting** - participated in regional competitions: [Hedmark](#), [Oslo](#) (in Norwegian).
 - **Cross-country skiing**
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