

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 precision medicine.
- Worked on projects in the second phase of GeTH which aims to integrate genomic medicine to clinical services by developing a digital genomic database and predicting drug response based on 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 GATK 4 for single nucleotide variation (SNV) calling.
 - Interpreted BRCA1/2 variants based on guidelines provided by the American College of Medical Genetics (ACMG) to establish a Thai breast cancer variant database.
 - Conducted a proof of concept for the implementation of Amazon Web Services (AWS) to support and accelerate demanding computational tasks, such as large GWAS datasets (>1,000 samples and >500,000 SNPs).

University of York, UK

2023

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

- Utilised precision gene editing to characterise a putative RNA:DNA helicase in *Leishmania mexicana*.
- Obtained protein predictions from bioinformatic tools (MAFFT, HMMER) and AlphaFold2 for 3D structural analysis.

University of Bristol, UK

2022

Dissertation supervised by Prof Rafael Carazo-Salas.

- Experimented with image segmentation and classification techniques 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

Summer internship supervised by Dr Surakameth Mahasirimongkol.

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

- **Computational/Bioinformatics:** Python, R, Unix, Cloud & Virtual Machine (VM) computing, GWAS, Variant interpretation, Phylogenetic inference
- **Experimental techniques:** PCR, CRISPR/Cas-9, DNA extraction, Western blot, Co-immunoprecipitation, Cell imaging (Widefield & Confocal)

EDUCATION

University of York, UK

2022 - 2023

Master of Science (MSc) in Biomedical Sciences

- Awarded with Distinction (GPA: 4.00)

University of Bristol, UK

2019 - 2022

Bachelor of Science (BSc Hons) in Biomedical Sciences

- Awarded Second Class Upper Division or 2:1 (GPA: 3.50)

Gjøvik High School, Norway

2017 - 2019

International Baccalaureate Diploma Programme (IBDP)

- Main subjects: Biology, Chemistry, English Language & Literature

CONFERENCES & WORKSHOPS

- **AWS Genomics Community Day** - Workshop hosted by Amazon Web Services (AWS), *Forthcoming (March 2025)*
 - **MedHackathon Asia 2025** - Workshop hosted by MedHackathon Asia, 2025
 - Participated in the planning of a standardised Pan-Asian imputation pipeline to improve precision medicine across Asia.
 - Developed an awareness of common issues in other Asian countries regarding sharing genomic data.
 - **AI in Genomics Medicine** - Seminar hosted by British Embassy Bangkok with guest speakers from Genomics England and Incubator for AI (ai.gov.uk), 2025
 - Explored the successes and challenges, both technical and policy-based, for AI applications in British healthcare and research.
 - **AWS Public Sector Day Thailand** - Seminar hosted by AWS, 2024
 - **Transforming Healthcare: AI in Health Data** - Seminar hosted by Office for National Statistics UK, 2024
 - **Microbial Genomics and Genomic Medicine** - Symposium hosted by NSTDA Thailand, 2021
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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 opportunities for businesses, projects include:
 - Real estate development and palm oil optimisation

Volunteer

Biodiversity Survey

2023

- 3 month volunteering project, worked in a team of 6 volunteers.
- Analysed the growth of plants and soil conditions for a park.
- Presented findings to stakeholders of the park and provided actionable recommendations for future development.

Tutor

2017 - 2018

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

CERTIFICATES

- [Introduction to Machine Learning](#) - Kaggle
- [Data Science for Everyone](#) - FutureSkill

HOBBIES & INTERESTS

- **Gardening & DIY** - developed a coconut and cacao orchard during my gap year.
 - **Rifle shooting** - previously part of a local shooting team in Norway, participated in regional competitions: [Hedmark](#), [Oslo](#) (in Norwegian). Learned about the importance of gun safety and control.
 - **Video editing** - created vlogs for a gap year project to brainstorm and reflect on ideas.
 - **Cross-country skiing**
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