

# 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*.
- Use of bioinformatic tools (MAFFT, HMMER) to obtain protein predictions and AlphaFold2 for 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, 2025
  - Explored the successes and challenges, both technical and policy-based, that Genomics England faced in AI applications in healthcare.
- **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

## PROFESSIONAL MEMBERSHIPS

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