

Jirachote Karunyakorn

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WORK AND ACADEMIC EXPERIENCE

- **Dr. Pornchai's lab at Department of Biochemistry, Faculty of Medicine Chulalongkorn University** (2020-Present)
 - Main project: Computational workflow development for identification of polyadenylated RNA in prokaryote from direct RNA nanopore sequencing data with polyuridylation
 - Design bioinformatics workflow to study poly(A) tail length in prokaryotic RNA with Oxford Nanopore sequencing technology
 - Design algorithm to improve poly(A) tail length estimation accuracy
 - Design algorithm to segment sequence data based on CIGAR string
 - Analyze result and report to advisor and colleagues
 - The research provides custom library preparation to preserve native poly(A) tail length and bioinformatics workflow to identify short poly(A) tail length
 - This research is the first study to report native poly(A) tail length of prokaryotic RNA with ONT.
 - Collaborate project: Using Xpore to build M⁶-Methyladenosine (m6a) signal database
 - Develop algorithm to build normal current profile without any m6a modification of synthetic RNA virus based on Xpore.
 - Report progress of work and consult problems with advisor and colleagues
 - This research provides native k-mer signal of nanopore of synthetic RNAs database to comparison and identify m6a k-mer signal location in virus's RNA.
 - Advisor Pornchai Kaewsapsak Ph.D.
- **EPA Academic Center** (2022-Present)
 - Part-time biology teacher
 - Prepare study materials and outline for each student
 - Teach biology for Thai program and international program exams, such as IB, IGCSE and A-Level
 - Have monthly? meeting with colleagues to discuss about problems and propose suggestion
- **Math talent by Dr. Ying** (2021-2022)
 - Part-time science teacher
 - Prepare study materials and outline for each class
 - Teachscience (to 5-10 years old students) through, toys, experiment, and activities method

- Evaluate and report student performances to their parents
- **Dr. Warut's lab at Department of Biology, Faculty of Science, Mahidol University** (2019-2020)
 - Comparative phylogeny and DNA barcode of Asian Centipede in genus *Scolopendra* linnaeus, 1758
 - Design experiment and bioinformatics workflows to study phylogenetics of Asian centipede
 - Use both morphological and molecular data to delimit species of Asian *Scolopendra* Centipede
 - Report progress and consult problem with advisor and colleagues
 - This study clarifies the taxonomic boundaries and review phylogenetic structure of Asian *Scolopendra* species.
 - Advisor Warut Siriwut Ph.D.
- **Freelance Tutor** (2018-Present)
 - Teach biology to bilingual and international high school students
 - Prepare teaching material and outline for each student
 - **Students develop biology knowledge by increase biology subject score and grade at school and also pass university entrance examination** (Civil Engineering and radiological technology, Thammasat university and Pharmacology, Khon Kaen University)

EDUCATION

- **Chulalongkorn University** (2020-Present)
 - M.Sc. in Bioinformatics and Computational Biology Program
 - GPAX 4.00
- **Mahidol University** (2016-2019)
 - Faculty of Science, B.Sc. in Biology
 - GPAX 3.71

AWARDS

- **H.M. the King Bhumibhol Adulyadej's 72nd Birthday Anniversary Scholarship (fully funded)** (2020)
Graduated student scholarship with full paid tuition fee and monthly salary
- **MU-backpack scholarship (fully funded)** (2018)
The short-term cultural exchange study in Vietnam

WORK SKILLS

- **Bioinformatics**
 - Retrieval of information and data mining (NCBI, ensemble, KEGG, etc.)
 - DNA/RNA sequencing analysis (Sanger, illumina, Oxford Nanopore)

- Phylogenetic analysis (Cipres)
- Metagenomics and Microbiomes analysis (qiime2)
- Protein structure and sequence analysis (iGEMDOCK, Amber, I-TASSER)
- Gene expression and annotation analysis (DAVID, DEseq2, BLAST, GENEID)
- **Programming language (R, Python and Linux)**
 - Basic Linux command line for HPC server
 - Bioinformatics software command line (samtools, GATK, minimap2, etc.)
 - Data visualization (ggplot, dplyr, matplotlib, etc.)
 - Data analysis (Pandas, Scipy, Numpy, etc.)
- **Basic laboratory skill**
 - DNA/RNA extraction and purification
 - PCR and gel electrophoresis
- **Microsoft software skill (MS Word, Excel and PowerPoint)**
- **Critical thinking and initiative**
- **Communication and collaboration**

LANGUAGES

- Thai (Native)
- English (Basic Working Proficiency, TOELF ITP 513)
- Japanese (Basic, JPLT N5)