KUNAL MISHRA

Final year undergraduate with experience working with biological data with a strong background in programming and software development

RESEARCH & WORK EXPERIENCE

Bioinformatics Intern
MAY 2020 - PRESENT

Prabhakar Lab, Genome Institute of Singapore@A*STAR

- Analysis of Rheumatoid Arthritis PBMC Single-Cell RNA Sequencing data
- Improvement of lab current software
- Tech stack: R, Seurat, ggplot

Research Intern
JUL 2019 - JAN 2020

Malleret Lab, **Dept. of Microbiology, National University of Singapore**

- Maintenance of the zoonotic parasite *Plasmodium knowlesi* clinical isolate A1.H1 and *Plasmodium falciparum 3D7 cell lines*
- Investigated the use of bioreactors for parasite culturing, optimised reactor parameters and prepared Standard Operating Procedure

Research Intern
AUG 2018 - JUL 2019

Preiser Lab, **Dept. of Life Sciences, Nanyang Technological University**

- Conducted medium-throughput drug screening using fluorescence-based assays on *Plasmodium falciparum*
- Conducted ring-stage assays and determined IC50 to assess potency
- Work presented at *Australasian Conference of Undergraduate Research 2019*, received best International Speaker award

EDUCATION

B. Sc. (Hons) in Biological Sciences, Second major in Medicinal Chemistry and Pharmacology
AUG 2017 - PRESENT

School of Biological Sciences, Nanyang Technological University

- Major GPA: 4.54 / 5 │ Cum. GPA: 4.34 / 5
- **Relevant coursework**: High Throughput Bioinformatics, Biostatistics, Algorithms for DNA Seq, Intro to Genomic Technologies, Immunology, Organic Chemistry I - III, Analytical Chemistry
- **Key Achievements:**
  - Awarded special NISTH-Micron Grant '20
  - Undergraduate Research Scholar AY18-19 (URECA)
  - 2nd Place at IdeasJam '20

SELECTED PROJECTS

- Novel Dementia Monitoring device
- Draft genome assembly of the plant *Eurycoma longifolia*
- Optimisation of bioreactors for use with *Plasmodium spp*. parasites
- Identification and characterisation of novel inhibitors against *Plasmodium falciparum*

CONTACT

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INTERESTS

- Bioinformatics
- Genomics
- Data Analysis
- Drug Design & Development
- Epidemiology

TECHNICAL SKILLS

Programming Languages:
Python, R, C/C++, Perl, Javascript, HTML5 & CSS3

Development:
Node.js, Vue.js, Git, Bash, Firebase, NumPy, pandas, ggplot

RELEVANT LAB SKILLS

- Genome Assembly and Analysis
- Analysis of RNA Sequencing data
- Parasite and Bacterial culturing
- Fluorescence-activated cell sorting
- Cloning techniques
- Separation techniques

EXTRA-CURRICULARS

President 2019 - 2020
Open Source Society

Hackathon Chairperson 2018 - 2019
Open Source Society

Founder 2016 - 2018
WorkTeen Opportunities