Lee Jin Wee

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Education and Achievements

National University of Singapore

Bachelor of Science (Honours) in Computational Biology — *2015-2019*

- **Honour Roll**, University Scholars Programme — *Academic Year 2015/2016*
- **Deans List**, Faculty of Science — *Academic Year 2016/2017*

Masters of Science in Statistics — *2020-2021*

Duke-NUS Medical School

Doctor of Medicine — *2023-2027*

Undergraduate Research Experience

Undergraduate Research Assistant

June 2018 - August 2018

Small RNA Sequencing (RNA-Seq) Analysis of *Drosophila melanogaster loquacious* (loqs) mutants

- Worked under the supervision of Prof Greg-Tucker Kellogg to write a Snakemake workflow for the analysis of Small RNA-Seq data from *Drosophila melanogaster loqs* mutants.
- Discovered that the presence of a particular Loqs isoform, Loqs-PD is necessary for the biogenesis of hairpin and anti-sense derived Small RNAs.
- The abstract for this work was accepted for the 4th RNA Biology Symposium in 2018.

Honours Project in Computational Biology

January 2019 - December 2019

scbimodal: An R Package for the analysis of single cell RNA-seq data based on bimodality in gene expression

- Developed an R package *scbimodal* for the analysis of Single-cell RNA Sequencing data under the supervision of Prof Greg-Tucker Kellogg
- Using Gaussian Mixture Modelling, *scbimodal* identifies genes which exhibit a bimodal distribution and uses their expression values to characterize and cluster cells. The package is currently maintained in a private repository.

Work Experience

Lucence Diagnostics

January 2020 - March 2021

Bioinformatician

- Improved and optimised Lucence's flagship *LiquidHALLMARK* diagnostic test for the detection of multiple complex variants.
- Co-invented a patent pending method for the early detection of various cancers using methylated ctDNA (**IPOS App No.10202105843Q**).

Duke-NUS Medical School (Center for Quantitative Medicine)

July 2021 - July 2023

Senior Research Assistant

- Analyzed large Emergency Department Electronic Health Record datasets using statistical and machine learning methods.
- Validated and fine-tuned several interpretable machine-learning models for the prediction Out-of-Hospital Cardiac Arrest outcomes in Singaporean and German cohorts.
- Provided statistical support for various epidemiological projects relating to emergency medicine.

Skills

Programming Languages R, Python, Bash, SQL

Frameworks Snakemake, Git, LaTeX, Markdown, Docker, AWS

Selected Publications

- Xie, F., Zhou, J., Lee, J. W., Tan, M., Li, S., Rajnthern, L. S., ... Liu, N. (2022). Benchmarking emergency department prediction models with machine learning and public electronic health records. Scientific Data, 9(1), 1-12.
- Liu, N., Liu, M., Chen, X., Ning, Y., Lee, J. W., Siddiqui, F. J., ... PAROS Clinical Research Network Investigators. (2022). Development and validation of an interpretable prehospital return of spontaneous circulation (P-ROSC) score for patients with out-of-hospital cardiac arrest using machine learning: A retrospective study. eClinicalMedicine, 48, 101422.