CURRICULUM VITAE

Runpeng Luo

CONTACT INFORMATION

Computer Science Building
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Princeton University
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EDUCATION

Princeton University, Princeton, NJ, USA
Doctor of Philosophy (Ph.D.) in Computer Science — Sep 2024 - ongoing

Australian National University, Canberra, ACT, Australia
Bachelor of Advanced Computing (Research and Development) (Honours) — Feb 2020 - Dec 2023
First Class Honours - GPA: 6.813/7
Advisors: Dr. Yu Lin and Dr. Benjamin Schwessinger

Strathfield South High School, Sydney, NSW, Australia
High School Certificate — Oct 2017 - Oct 2019
ATAR: 94.75

EMPLOYMENT

Diversity Arrays Technology, Canberra, ACT, Australia
R&D Solution Developer — Feb 2024 - Aug 2024

Australian National University, Canberra, ACT, Australia
Technical Assistant at the School of Biology — Oct 2022 - Aug 2024
Summer Research Intern at the School of Computing — 2021&2022 Summer
Teaching Assistant
- COMP3320 High Performance Scientific Computation — 2023 Semester 2
- COMP7240 Introduction to Database Concepts — 2023 Semester 1
- COMP4300/8300 Parallel System — 2023 Semester 1
- BIOL8002 Advanced Topics in Quantitative Biology and Bioinformatics — 2022 Semester 2
- COMP2400/6240 Relational Database — 2021&2022 Semester 2

RESEARCH INTEREST

Computational Biology
Combinatorial Optimization
High Performance Computation

RESEARCH EXPERIENCE

Graph Model and Algorithms for Haplotype-resolved Assembly on Dikaryotic Genome — Feb 2023 - Dec 2023
Advisors: Dr. Benjamin Schwessinger, Dr. Lianrong Pu, and Dr. Qing Wang
Objectives: Design and implement a bi-partition algorithm to assemble and phase dikaryotic genome using third-generation sequencing (TGS) data and Hi-C data.

Plasmid Library Diversity Quantification using Nanopore Sequencing Data — Jun 2023 - May 2024
Advisors: Dr. Joseph Brock and Dr. Benjamin Schwessinger
Objectives: Design and implement a novel classification algorithm to quantify the plasmid combinations from the library mixture.

De Novo Reconstruction of Viral Strains via Iterative Path Extraction from Assembly Graphs — Dec 2021 - Oct 2022
Advisors: Dr. Yu Lin
Objectives: Design and implement an assembly algorithm to reconstruct strains from viral quasispecies under De novo approach.

AWARDS

ANU Summer Research Scholarship, 2021&2022 Summer, Canberra, Australia

NSW Government School International Student Awards - Academic Achievement 2020, Sydney, Australia

TALKS

27th Annual International Conference on Research in Computational Molecular Biology, (RECOMB 2023), Link, Istanbul, Turkey, Apr 2023.

RELEVANT SKILLS
Programing: Python, C/C++, Java, Haskell, Rust, ARMv7 Assembly, PostgreSQL
Utilities: Bash, LaTeX, Anaconda, Git, VsCode, Jupyter Notebook

LANGUAGES
Mandarin Chinese (native)
English (fluent)

REFERENCES
Dr. Benjamin Schwessinger *E-mail*: benjamin.schwessinger@anu.edu.au
Associate Professor at the Research School of Biology, Australian National University

Dr. Yu Lin *E-mail*: yu.lin@anu.edu.au
Senior Lecturer at the School of Computing, Australian National University

PUBLICATIONS
Cleaver, A., **Luo, R.**, Smith, O. B., Murphy, L., Schwessinger, B., and Brock, J., High-throughput optimisation of protein secretion in yeast via an engineered biosensor. *Trends in Biotechnology*, (2024). 10.1016/j.tibtech.2024.11.010

Luo, R. and Lin, Y., VStrains: De Novo Reconstruction of Viral Strains via Iterative Path Extraction From Assembly Graphs. *Proceedings of the 27th International Conference in Computational Molecular Biology (RECOMB 2023)*, 3-20 (2023). 10.1007/978-3-031-29119-7_1