KANE TOH

I am a bioinformatician specialising in large-scale transcriptomics analysis (e.g. RNA-seq, single-cell RNA-seq). With my background in genetics and previous wet-lab experience, I communicate effectively with biologists and develop solutions tailored to their biological questions.

WORK EXPERIENCE

current | Feb 2022

GeDaC Bioinformatician, Postdoctoral Research Fellow

Cancer Science Institute (CSI), National University of Singapore (NUS)

- Establishing the Genomics and Data Analytics Core (GeDaC) analysis portal to deploy scalable Bioinformatics workflows in AWS. Developed the end-to-end RNA-seq and scRNA-seq pipelines that account for around 75% of all runs; all of which delivered results to CSI researchers successfully
- Spearheading the GeDaC Bioinformatics consulting service for research laboratories such as Prof. Anand Jeyasekharan and Prof. Polly Chen's labs in CSI; Dr. Ratha Mahendran's lab in NUS Department of Surgery and Prof. David Virshup's lab in Duke-NUS
- Serving as a collaborator on a recently submitted MOE AcRF Tier 2 grant with 4 other PIs across NUS
- Acting as technical mentor for clinicians and NUS medical students

Dec 2021 | Jan 2020

Teaching supervisor

Cambridge, UK — University of Cambridge

- Designed and taught original crash course material for 7 final-year Genetics undergraduates
- Delivered supervisions in the Biology of Cells course to 6 first-year undergraduates in Fitzwilliam College, Cambridge

EDUCATION

Oct 2021 | Oct 2017

Ph.D. (Genetics)

Cambridge, UK — King's College, University of Cambridge

- Analysed and validated scRNA-seq analysis results by 3D imaging of single-cell mRNA expression with confocal microscopy
- Collaborated on an image registration pipeline and extended Python classes from the open3D package
- Developed a stochastic model of a genetic toggle switch by simulating stochastic differential equations in Python and estimating posterior distributions with MCMC

CONTACT

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github.com/kane9530
linkedin.com/in/kane-toh/

SKILLS

- R
- Python
- Bash
- Linux
- AWS

Jun 2017 | Oct 2014

B.A. (Natural Sciences)

Cambridge, UK — Fitzwilliam College, University of Cambridge

- Ranked first in year. Awarded the J M Thoday Prize for best performance in Genetics
- Attained a First-class in all examinations

Jun 2014 | Jan 2012

Singapore-Cambridge GCE A-level

Singapore — Hwa Chong Institution

- 7 distinctions
- ASEAN scholar (2008-2013)

CERTIFICATIONS

current | 2021

Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning

Coursera — bit.ly/tfCoursera

- Demonstrated knowledge to build deep learning models in Tensorflow 2.0

2025 | 2022

AWS Certified Cloud Practitioner

Amazon Web Services — bit.ly/awsCCPcert

- Demonstrated cloud fluency and foundational AWS knowledge, with ability to set up AWS-focused projects.

PUBLICATIONS

2022

Zebrafish neuromesodermal progenitors undergo a critical state transition in vivo

Cell Press, iScience — https://doi.org/10.1016/j.isci.2022.105216

- First author. Authored with Dillan Saunders, Berta Verd and Benjamin Steventon

2022

Approximated Gene Expression Trajectories (AGETs) for Gene Regulatory Network Inference on Cell Tracks

bioRxiv — https://doi.org/10.1101/2022.01.12.476060

- Co-authored with Timothy Fulton, Seongwon Hwang, Dillan Saunders, Brooks Paige, Benjamin Steventon and Berta Verd

2021

Assessing the transition state model for cellular differentiation in vivo: a case study of zebrafish neuromesodermal progenitors

Cambridge Repository — https://doi.org/10.17863/CAM.78756

- PhD. thesis