

# CURRICULUM VITAE: LING HAN TONG MAURICE

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## PERSONAL DATA

NATIONALITY: Singaporean  
Languages (Written): English, Chinese  
Languages (Dialects) Spoken: English, Mandarin, Teochew, Cantonese, Hokkien

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ONLINE PROFILES: LinkedIn: <http://www.linkedin.com/in/mauriceling>  
Website: <https://mauriceling.github.io>

## CAREER SUMMARY

- Over 20 years of experience (since 2003) as research and lecturing biologist / bioinformaticist in both academic and industrial settings.
- More than 4,000 hours of lecturing, project supervision, and corporate trainer experience since January 2017.
- 136 refereed publications (including 3 publications from high-school projects, 36 publications from pre-undergraduate projects, and 33 publications from undergraduate projects) and 1 US patent.
- Collaborated with colleagues across different countries and time-zones.
- Co-founded the first synthetic biology company in Singapore.

## ACADEMIC RECORD

2004-2009 **Doctor of Philosophy (Bioinformatics).** The University of Melbourne, Australia  
*Understanding Mouse Lactogenesis by Transcriptomics and Literature Analysis.* Supervisors: Prof KR Nicholas, A/Prof C Lefevre, A/Prof F Lin.  
Degree awarded 24 Dec 2009.

2008-2009 **Certificate in Teaching (Higher Education).** Singapore Polytechnic, Singapore

2005-2007 **Bachelor of Science (Computing).** University of Portsmouth, UK

2003-2004 **Bachelor of Science (Honours, H2A).** The University of Melbourne, Australia  
*Identifying the Roles of Insulin, Prolactin and Glucocorticoid in the Initiation of Murine Lactogenesis.* Supervisor: A/Prof KR Nicholas.

2002-2003 **Bachelor of Science.** The University of Melbourne, Australia

2001-2003 **Advanced Diploma in Computing.** National Computing Centre, United Kingdom  
Project: *InterBase Data Warehouse Builder (IB-DWB) Version 1.0*

## CERTIFICATIONS

2023 **Google Project Management Certificate.** Coursera.  
Google Project Management Certificate (ID [RJN24P2A8ZKN](#)), total of 152 hours and consisting of

1. Foundations of Project Management (Certificate ID [DK8QM2ZE72UG](#), 18 hours)

2. Project Initiation: Starting a Successful Project (Certificate ID [N5ZHGL26FRAM](#); 21 hours)
  3. Project Planning: Putting It All Together (Certificate ID [PQQMSDXT5KCR](#), 29 hours)
  4. Project Execution: Running the Project (Certificate ID [P4HF2TBBDPHN](#), 26 hours)
  5. Agile Project Management (Certificate ID [NGQ43XPD334W](#), 25 hours)
  6. Capstone: Applying Project Management in the Real World (Certificate ID [NS4YPVUKAQSM](#), 33 hours)
- 2023 **Google Business Intelligence Certificate.** Coursera.  
 Google Business Intelligence Certificate (ID [C9BD6HG6FJ9T](#)), total of 74 hours and consisting of
1. Foundations of Business Intelligence (Certificate ID [QE2TV8H44XP6](#); 23 hours)
  2. The Path to Insights: Data Models and Pipelines (Certificate ID [SBT8S4RFPHEP](#); 24 hours)
  3. Decisions, Decisions: Dashboards and Reports (Certificate ID [QSUDYBL8G9MV](#); 24 hours)

## SIGNIFICANT TECHNOLOGY DISCLOSURES

**Ling Han Tong Maurice**, Poh Chueh Loo and Lim Yuting Rosary. *Prediction of Gene Transcription Intensity and Gene Perturbation.*

- United States Provisional Application No. 61/839,046 filed June 26, 2013
- International Patent Application No. PCT/SG2014/000234 filed May 28, 2014.

**Maurice Ling**, Kok Hien Gan, Kevin Clancy, Raymond Tecotzky and Kin Chong Sam. *Methods and Systems for In Silico Experimental Design and Performing a Biological Workflow.*

- United States Provisional Application No. 61/578,820
- International Patent Application No. PCT/US2012/071379 filed December 21, 2012
- United States Non-Provisional Application No. 13/724,765 filed December 21, 2012
- United States Application No. 15/259,033 filed September 7, 2016
- United States Patent issued on October 11, 2016; Patent Number 9,465,519

## AWARDS AND SCHOLARSHIPS

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|------|---|
| 2010 | Science Mentorship Program “Outstanding Mentor Award”, Ministry of Education, Singapore |
| 2005 | Melbourne Abroad Traveling Scholarship, The University of Melbourne                     |
| 2005 | Postgraduate Overseas Research Experience Scholarship, The University of Melbourne      |
| 2005 | F.H. Drummond Travel Award, The University of Melbourne                                 |
| 2005 | Melbourne International Fee Remission Scholarship, The University of Melbourne          |
| 2004 | Science Faculty Scholarship, The University of Melbourne                                |
| 2004 | CRC for Innovative Dairy Products (PhD Scholarship)                                     |
| 2003 | CRC for Innovative Dairy Products (Honours Scholarship)                                 |

## RESEARCH AND DEVELOPMENT EXPERIENCES

- 2017- current **Scientist**, Temasek Polytechnic (School of Applied Sciences). I supervise and mentor interns and major project students, which resulted in 21 refereed publications (see Listing 1) with 27 project students.
- 2017-2020: Adjunct Lecturer
  - 2020-2022: Lecturer

- 2023-current: Scientist
- 2017- current **Associate Lecturer**, Management Development Institute of Singapore (MDIS). I supervise undergraduate students for the honours year projects, mainly in bioinformatics; which resulted in 22 refereed publications (see Listing 2).
- 2014-current **Co-Founder and Director (Technology)**, AdvanceSyn Pte. Ltd. As a biologist turned bioinformaticist, I am responsible for technological developments (both biology and IT tools) of the company.
- 2018-2021 **Research Assistant Professor**, Perdana University (School of Data Sciences). I assist the Dean of Data Science to identify research strategies, on top of project supervision and mentoring.
- 2010-2017 **Honorary Fellow (equivalent to academic rank of Lecturer)**, The University of Melbourne (Department of Zoology). I was appointed on basis of continued contributions to the university in terms of outreach programs and research contributions.
- 2013-2017 **Research Fellow**, Nanyang Technological University (School of Chemical and Biomedical Engineering). I am part of the synthetic biology group with several responsibilities:
  - Developing software tools for modeling and predicting gene expression and protein production
  - Engineering micro-organisms for waste degradation and production of high-valued chemical compounds and peptides
  - Providing advice for experimental procedures on genetic engineering and characterization
  - Safety representative for the group
- 2012-2013 **Research Associate**, South Dakota State University (Department of Mathematics and Statistics). I am working on a NIH funded project on antisense transcript, as well as providing bioinformatics support to the university community at large.
- 2010-2012 **Senior Scientist (Bioinformatics)**, Life Technologies. I was in the core team for Vector NTI Express and provided specifications on bioinformatics algorithms, and responsible for drafting the high-level requirements for Vector NTI Designer.
- 2008-2011 **Lecturer**, Singapore Polytechnic (School of Chemical and Life Sciences). I led student/internship projects on experimental evolution. We found that constant chemical stress on *Escherichia coli* leads to rapid adaptation to the stressors, which has significance to antibiotics resistance and food preservation. Using DNA fingerprinting, we had demonstrated that these adaptations are genetic.
- 2004-2009 **Ph.D. Candidate**, The University of Melbourne (Department of Zoology). I developed a system for rapid survey of the literature and used it, together with microarray analysis, to elucidate potentially novel hypotheses for further experimental research.
- 2003-2004 **B.Sc.(Hons) candidate**, The University of Melbourne (Department of Zoology). I proposed a model in which insulin, prolactin and glucocorticoid exert their effects singly and in combination to trigger mouse lactogenesis. Much of the analysis used data from microarray experiments.
- 2003 **Research Experience**, The University of Melbourne (Department of

- Anatomy and Cell Biology Ocular Development Laboratory), supervised by Dr R de Iongh. I completed expression studies of BMP4 receptors in lens development and assisted in establishing in situ hybridization techniques in the laboratory.
- 2002-2003 **Adv. Dip. Computing candidate**, National Computing Centre, UK. I designed a data warehouse builder based on Borland InterBase 6, which resulted in a paper at the 1st Australian Undergraduate Students' Computing Conference.

## TEACHING AND MENTORING EXPERIENCES

- 2017- current **Scientist**, Temasek Polytechnic (School of Applied Sciences).
- 2017-2020: Adjunct Lecturer
  - 2020-2022: Lecturer
  - 2023-current: Scientist
  - Supervising and mentoring interns and major project students, which resulted in 21 refereed publications (see Listing 1) with 27 project students.
  - Subjects taught: [1] Biological Data Analysis, [2] Digitalization for Applied Sciences (as subject leader), [3] Scripting for Bioinformatics (as subject leader), [4] Statistics for Applied Sciences (as subject leader), and [5] Synthetic Biology. Developed course materials for [1] Digitalization for Applied Sciences, [2] Scripting for Bioinformatics, [3] Statistics for Applied Sciences, and [4] Synthetic Biology.
- 2017- current **Associate Lecturer**, Management Development Institute of Singapore (MDIS). Approved by Committee for Private Education (CPE, Singapore).
- Supervising honours projects, which resulted in 22 refereed publications (see Listing 2).
  - Lecturing on subjects from Northumbria University (UK):
    - Applied Bioinformatics and Postgenomics (Year 3 BSc(Hons))
    - Genomics (Year 3 BSc(Hons))
    - Introductory Pathological Science (Year 1 BSc (Hons))
    - Investigative Biotechnology (Year 2 BSc(Hons))
    - Practical Skills (Year 1 BSc(Hons))
    - Professional Skills (Year 2 BSc(Hons))
    - Research: Approaches, Methods, and Skills (M Public Health)
    - Research Methods in Applied Sciences (Year 2 BSc(Hons))
    - Scope of Biotechnology (Year 2 BSc(Hons))
  - Lecturing on subjects from Teesside University (UK):
    - Informatics and Technology in Healthcare Management (Year 2 BSc(Hons))
  - Lecturing on subjects from Roehampton University (UK):
    - Biometry: Physiology, Mathematics, and Statistics (Year 1 BSc(Hons))
- 2009 – 2020 **Pro Bono Scientific Research Mentor**. I provide research mentorship on a pro bono (voluntary) basis to juniors interested in scientific research, which resulted in more than 20 peer-reviewed publications.
- 2013-2017 **Research Fellow**, Nanyang Technological University (School of Chemical and Biomedical Engineering). I manage and mentor final year project (FYP) students assigned to my research group.

- 2012-2013 **Research Associate**, South Dakota State University (Department of Mathematics and Statistics)
- Instructor for graduate level statistical methods course; Statistical Methods II; using SAS, Minitab, JMP and R.
  - Judge for East South Dakota Science and Engineering Fair 2012.
- 2008-2011 **Lecturer**, Singapore Polytechnic (School of Chemical and Life Sciences)
- Diploma in Biotechnology representative, Information Technology in Teaching and Learning Committee
  - Diploma in Biotechnology representative, Alumni and Industry Relations
  - Sharing Session Coordinator
  - Mentored 12 diploma students/interns and 9 specialist diploma students (adult learners).
- 2006-2008 **Resident Adviser and Tutor**, University College, The University of Melbourne, Australia. Provided pastoral care and academic support for undergraduates and postgraduate students. Tutored in “*Academic writing for senior science students*” and “*Introductory Programming in C*” subjects.
- 2004-2005 **Head Demonstrator**, The University of Melbourne (Department of Zoology). I was the lead demonstrator in practical classes in Biology to more than 1100 first year students. Demonstrated in 3<sup>rd</sup> year Development Biology practical classes.

## PROFESSIONAL SERVICES

- 2022-current **Associate Editor**, Computational Genomics [specialty section of Frontiers in Genetics (ISSN 1664-8021), Frontiers in Bioengineering and Biotechnology (ISSN 2296-4185), and Frontiers in Plant Science (ISSN 1664-462X)].
- Topic editor for Current State of Multi-omics Modeling and Simulations (<https://www.frontiersin.org/research-topics/30282>)
- 2022-current **Review Editor**, STEM Education [a specialty section of Frontiers in Education (ISSN 2504-284X)].
- 2020-current **Honorary Director**, Asia Pacific Bioinformatics Network Ltd (UEN 201225997K), which is registered in Singapore as a legal entity to manage the routine operations of Asia Pacific Bioinformatics (APBioNet).
- 2019-current **Executive Committee Member**, Society for Synthetic Biology (Singapore) (SynBioSG).
- 2018-current **Executive Committee Member**, Association of Medical and Bio-Informatics, Singapore (AMBIS). Secretary from 2018 to 2020. Treasurer for 2021.
- 2017-current **Series Editor**, Current STEM. Nova Science Publishers, Inc. Current STEM is a broad-spectrum book series for all aspects of STEM (Science, Technology, Engineering, and Mathematics). This includes all philosophical, theoretical and applied aspects of STEM; and STEM-related areas, such as education, industry and economy, ethics and legal aspects.
- 2010-current **Programme Committee Member**.
- Python for High Performance Computing (2010 – 2017), part of International Conference for High Performance Computing, Networking, Storage and Analysis.
  - 4th International Conference on Electronics, Communications and Networks (CECNet 2014) (2014).

- International Symposium on Bioinformatics 2018 (InSyB 2018) (2018), as Programme Committee Chair.
  - International Conference on Bioinformatics 2019 (InCoB 2019) (2019).
- 2008-current **Editorial Committee Member.** I was invited to join the editorial committee of the following journals:
  - The Python Papers Anthology incorporating The Python Papers (ISSN 1834-3147), The Python Papers Monograph Series (ISSN 1837-7092), and The Python Papers Source Codes (ISSN 1836-621X), as Co-Editor-in-Chief (2008 – 2018).
  - iConcept Journal of Computational and Mathematical Biology (ISSN 2219-1402), iConcept Press Ltd (2010 – 2018).
  - MOJ Proteomics & Bioinformatics (ISSN 2374-6920), MedCrave Publishing Group (2014 – 2018 as Associate Editor, 2018 – 2020 as Honorary Editor).
  - Acta Scientific Microbiology (ISSN 2581-3226), Acta Scientific (from 2018).
  - Acta Scientific Computer Sciences (ISSN , Acta Scientific (from 2018).
- 2019-2021 **Working Committee Member,** MyBioInfoNet. MyBioInfoNet, affiliated with Asia Pacific Bioinformatics Network (APBioNet) is a non-profit entity established in 2018 is dedicated to serve as a networking platform for Malaysians or non-Malaysians, within or outside Malaysia, with interest in growing bioinformatics in the country.
- 2010-2019 **Technical Reviewer,** Packt Publishing (IT publishing house). I reviewed 14 books on Python programming – [1] Python Multimedia Beginner’s Guide (ISBN 978-184-951016-5), [2] wxPython 2.8 Application Development (ISBN 978-184-951178-0), [3] Python 2.6 Text Processing (ISBN 978-184-951212-1), [4] Python Text Processing with NLTK 3 Cookbook (ISBN 978-178-216785-3), [5] Building Machine Learning Systems with Python (ISBN 978-1-78216-140-0), [6] Python Testing Cookbook (ISBN 978-1-849514-66-8), [7] IPython Interactive Computing and Visualization Cookbook (ISBN 978-178-328481-8), [8] Python for Secret Agents (ISBN 978-178-398042-0), [9] Building Machine Learning Systems with Python, 2nd edition (ISBN 978-1-784392772), [10] Mastering Python for Data Science (ISBN 978-1-78439-015-0), [11] Learning Python Design Patterns, 2nd edition (ISBN 978-1-78588-803-8), [12] Automate it! Recipes to upskill your business (ISBN 978-1-78646-051-6), [13] Python Testing Cookbook, 2nd Edition (ISBN 978-1-78712-252-9), [14] Python Object Oriented Programming Cookbook (ISBN 978-1-78862-278-3), [15] Python GUI Programming Cookbook, Third Edition (ISBN 978-1-83882-754-0).
- 2015-2018 **Honorary Auditor,** Python User Group (Singapore) (ROS 2060/2009, Singapore). Python User Group acts as a professional entity to promote Python use in education and industry within Singapore. After completion of my terms, in various capacities, in the executive committee; I was elected as Honorary Auditor.
- 2009-2012 **Conference and Publications Co-Chair,** PyCon Asia-Pacific  
I am the co-chair for PyCon Asia-Pacific 2010 to 2012. The community had accepted PyCon Asia-Pacific as one of the 3 major Python conferences worldwide, together with PyCon US and EuroPython.

- 2009-2015      **Committee Member**, Python User Group (Singapore) (ROS 2060/2009, Singapore). Python User Group acts as a professional entity to promote Python use in education and industry within Singapore. I serve as Vice-President from 2009 to 2013, and Treasurer from 2013 to 2015. Co-founder of the society and drafted the constitution for submission to Ministry of Home Affairs, Singapore.
- 2002-2003      **Publication Team Member** (ISBN 0-646-4275-1-2), Australian Undergraduate Students' Computing Conference 2003.
- 2001              **Operations Manager (Advisory)**, Fund Raising Project for Gujarat Earthquake Relief. I was the director of operations and contingency planning on the day of event, managing more than 250 volunteers and coordinating emergency services over 8 operation sectors housing more than 30000 residences.
- 1996-1999      **Deputy S1 (Administration Officer)**, Cadet Lieutenant promoted to Senior Cadet Lieutenant, National Cadet Corp, Singapore.

## PROFESSIONAL MEMBERSHIPS

- 2000-2008      Association of Computing Machinery (Student Member)
- 2018-2021      MyBioInfoNet, Malaysia
- 2008–current   Association of Computing Machinery (Professional Member)
- 2009–current   Python User Group (Singapore)
- 2018–current   Singapore Society for Synthetic Biology
- 2018–current   Association of Medical and Bio-Informatics, Singapore

## PUBLICATIONS

### Refereed Journal Articles:

- Işık, EB, Brazas, MD, Schwartz, R, Gaeta, B, Palagi, PM, van Gelder, CWG, Suravajhala, P, Singh, H, Morgan, SL, Zahroh, H, **Ling, M**, Satagopam, VP, McGrath, A, Nakai, K, Tan, TW, Gao, G, Mulder, N, Schönbach, C, Zheng, Y, De Las Rivas, J, Khan, AM. 2023. *Grand Challenges in Bioinformatics Education and Training*. Nature Biotechnology 41: 1171–1174.
- Chia, VSQ, **Ling, MHT**. 2023. *Potential Information Processing Differences in Male and Hermaphrodite Neural Networks of Caenorhabditis elegans*. Medicon Medical Sciences 5(2): 53-59.
- Shin, AW, Yan, LZW, Poh, KSH, **Ling, MHT**. 2023. *Science/Education Portraits VIII: Duoethnography of First-Generation Bioscience Undergraduates in a Private Education Institute in Singapore*. Acta Scientific Microbiology 6(6): 24-35.
- Ling, MHT**. 2023. *ChatGPT (Feb 13 Version) is a Chinese Room*. Novel Research in Sciences 14(2): NRS.000832.
- Toh, BCY, **Ling, MHT**. 2023. *Applications Utilizing CRISPR/Cas9*. Novel Research in Sciences 14(1):NRS.000826.
- Roh, D, Naing, SY, **Ling, MHT**. 2023. *Peptide Properties of Saccharomyces arboricola H-6 Suggest Randomness in Chromosomal Organization*. EC Microbiology 19(3): 01-08.
- Wong, KM, Sim, BJH, **Ling, MHT**. 2023. *Consistency Between Saccharomyces cerevisiae S288C Genome Scale Models (iND750 and iMM904)*. Acta Scientific Microbiology 6(3): 63-68.
- Ling, MHT**, Musttakim, S, Lau, PN. 2023. *Development of a Basic Chemistry Conversational Corpus*. Acta Scientific Nutritional Health 7(2): 48-54.
- Azan, NK, Ng, ASY, Samsudi, F, Mazlan, MR, Loh, YK, **Ling, MHT**. 2023. *A 5-Year Systematic Review (2018 to 2022) on The Effectiveness of Mediterranean Diet in Preventing Alzheimer's Disease*. Acta Scientific Nutritional Health 7(2): 79-90.
- Ng, ASY, Azan, NK, Samsudi, F, Mazlan, MR, Loh, YK, **Ling, MHT**. 2023. *A 5-Year Systematic Review (01 April 2017 to 31 March 2022) on the Causes of Abdominal Obesity*. EC Clinical and Medical Case Reports 6(1): 90-110.
- Naing, SY, Thia, EWJ, Roh, D, Chew, C, Tun, SK, Wai, MK, **Ling, MHT**. 2023. *Novel Populations from*

- Simulated Admixed Populations*. Medicon Medical Sciences 4(1): 9-15.
12. Tan, JZH, Tan, NTF Tan, **Ling, MHT**. 2022. *Brainopy: A Biologically Relevant SQLite-Based Artificial Neural Network Library*. Acta Scientific Computer Sciences 4(12): 13-22.
13. Loh, BJK, Kannan, KSS, Patil, T, Vij, R, **Ling, MHT**. 2022. *Inconsistent Phylogenetic Trees from Nucleotide or Amino Acid Sequences from Mammalian Mitochondrial Genomes*. EC Clinical and Medical Case Reports 5(7): 03-09.
14. Sim, BJH, Wong, KM, **Ling, MHT**. 2022. *Metabolite Overproduction Potential of Saccharomyces cerevisiae S288C Explored Using Its Genome-Scale Metabolic Model, iMM904*. EC Microbiology 18(7): 46-51.
15. Maitra, A, **Ling, MHT**. 2022. *DOSSIER: A Toolkit to Extract Data from Digital Life Simulations Using DOSE*. Acta Scientific Computer Sciences 4(7): 37-40.
16. Kannan, KSS, Patil, T, Vij, R, Loh, BJK, **Ling, MHT**. 2022. *Nutrient Availability Impacts Intracellular Metabolic Profiles in Digital Organisms*. Acta Scientific Microbiology 5(6): 18-25.
17. Tang, AY, **Ling, MHT**. 2022. *Relapse Processes are Important in Modelling Drug Epidemic*. Acta Scientific Medical Sciences 6(6): 177-182.
18. Wee, YY, Kng, X, Sor, SX, **Ling, MHT**. 2022. *Genome-Scale Metabolic Model-Based Reactome-Phenome Map of Synechocystis sp. PCC 6803, A Potential Biofuel Producer*. Medicon Microbiology 1 (4): 02-08.
19. Sor, SX, Wee, YY, Kng, X, **Ling, MHT**. 2022. *A Systematic Scoping Review on the Current Applications of Environmental DNA (eDNA)*. EC Clinical and Medical Case Reports 5(4): 46-64.
20. Chua, MTE, Dumanglas, ABG, **Ling, MHT**. 2022. *Gene Co-Expressions Cannot Predict Protein-Protein Interactions in Escherichia coli*. EC Microbiology 18(3): 102-109.
21. Tan, FL, Kuan, ZJ, Amir-Hamzah, N, Kng, X, Wee, YY, Sor, SX, **Ling, MHT**. 2022. *Significant Differences in Media Components and Predicted Growth Rates of 58 Escherichia coli Genome-scale Models*. Acta Scientific Microbiology 5(2): 56-68.
22. Kuan, ZJ, Amir-Hamzah, N, **Ling, MHT**. 2022. *Kinetic Models with Default Enzyme Kinetics from Genome-scale Models*. Acta Scientific Computer Sciences 4(1): 59-63.
23. **Ling, MHT**. 2021. *ZeroOne: Building and Enhancing Executing Simulation by Incremental Patches*. Acta Scientific Computer Sciences 3(10): 50-52.
24. Sim, KS, **Ling, MHT**. 2021. *Installation and Documentation Evaluation of Recent (01 January 2020 to 15 February 2021) Chatbot Engines from Python Package Index (PyPI)*. Acta Scientific Computer Sciences 3(8): 38-43.
25. Ang, DGY, **Ling, MHT**. 2021. *Sudden and Steep Harsh Environment Results in Over-Compensation in Digital Organisms*. EC Microbiology 17(7): 104-113.
26. Johny, A, Sumedha, PR, **Ling, MHT**. 2021. *Simulation Suggests that One-Off Simple Supplementation from the Wild into Captive Population May Not Increase Captive Genetic Diversity*. EC Veterinary Science 6(7): 107-111.
27. Lim, GZK, Azmi, HH, Dolmatova, M, **Ling, MHT**. 2021. *Significant Differences in Nucleotide and Peptide Features Between Chromosomes Suggesting Sequence Non-Randomness Across Chromosomes*. Acta Scientific Microbiology 4(4): 23-28.
28. Kuan, ZJ, Amir-Hamzah, N, **Ling, MHT**. 2021. *Coffee as a Potential Nutraceutical*. EC Nutrition 16(3): 57-65.
29. Kim, KD, Chua, SCH, **Ling, MHT**. 2021. *Science/Education Portraits VII: Statistical Methods Used in 1081 Papers Published in Year 2020 Across 12 Life Science Journals Under BioMed Central*. Acta Scientific Nutritional Health 5(3): 06-12.
30. Kuan, ZJ, **Ling, MHT**. 2021. *Core Genome of Poales, An Economically Important Order of Monocotyledons*. EC Agriculture 7(2): 24-29.
31. Cho, JL, **Ling, MHT**. 2021. *Adaptation of Whole Cell Kinetic Model Template, UniKin1, to Escherichia coli Whole Cell Kinetic Model, ecoJC20*. EC Microbiology 17(2): 254-260.
32. Chua, SCH, **Ling, MHT**. 2021. *Stop Codon Usage Varies on CDS Length, Nucleotide Compositions, and Peptide Instability in Six Escherichia coli Strains*. EC Clinical and Medical Case Reports 4(2): 39-46.
33. **Ling, MHT**. 2020. *Low Classification Accuracy by Logistic Regression, Support Vector Classifier, and Multi-Layer Perceptron, but Not Decision Tree, on Random Attributes from Hadamard Matrix*. EC Clinical and Medical Case Reports 3(12): 07-10.
34. Teo, YH, **Ling, MHT**. 2020. *A Systematic Review on the Sufficiency of PubMed and Google Scholar for Biosciences*. Acta Scientific Medical Sciences 4(12): 03-08.
35. Wang, VCC, **Ling, MHT**. 2020. *Science/Education Portraits VI: Anecdotes of Life in Singapore During COVID-19 (February 2020 to September 2020)*. EC Clinical and Medical Case Reports 3(11): 98-111.



36. Chew, SSM, Murthy, MV, Kamarudin, NJ, Wang, VCC, Tan, XT, Ramesh, A, Yablochkin, NV, Mathivanan, K, **Ling, MHT**. 2020. *Rapid Genetic Diversity with Variability between Replicated Digital Organism Simulations and its Implications on Cambrian Explosion*. EC Clinical and Medical Case Reports 3(11): 64-68.
37. Liu, TT, **Ling, MHT**. 2020. *BactClass: Simplifying the Use of Machine Learning in Biology and Medicine*. Acta Scientific Medical Sciences 4(11): 43-47.
38. **Ling MHT**. 2020. *AdvanceSyn Toolkit: An Open-Source Suite for Model Development and Analysis in Biological Engineering*. MOJ Proteomics & Bioinformatics 9(4):83–86.
39. Murthy, MV, Balan, D, Kamarudin, NJ, Wang, VCC, Tan, XT, Ramesh, A, Chew, SSM, Yablochkin, NV, Mathivanan, K, **Ling, MHT**. 2020. *UniKin1: A Universal, Non-Species-Specific Whole Cell Kinetic Model*. Acta Scientific Microbiology 3(10): 04-08.
40. Wang, VCC, Kamarudin, NJ, Tan, XT, Ramesh, A, Chew, SSM, Murthy, MV, Yablochkin, NV, Mathivanan, K, **Ling, MHT**. 2020. *A Case Study using Mitochondrial Genomes of the Order Diprotodontia (Australasian Marsupials) Suggests that Single Ortholog is Not Sufficient for Phylogeny*. EC Clinical and Medical Case Reports 3(9): 93-114.
41. Kamarudin, NJ, Wang, VCC, Tan, XT, Ramesh, A, Chew, SSM, Murthy, MV, Yablochkin, NV, Mathivanan, K, **Ling, MHT**. 2020. *A Simulation Study on the Effects of Founding Population Size and Number of Alleles Per Locus on the Observed Population Genetic Profile: Implications to Broodstock Management*. EC Veterinary Science 5(8): 176-180.
42. Tan, XT, Ramesh, A, Wang, VCC W, Kamarudin, NJ, Chew, SSM, Murthy, MV, Yablochkin, NV, Mathivanan, K, **Ling, MHT**. 2020. *Core Pseudomonas Genome From 10 Pseudomonas Species*. MOJ Proteomics & Bioinformatics 9(3): 68–71.
43. Gunalan, K, Wong, CQL, Neo, MPY, **Ling, MHT**. 2020. *One Percent of Escherichia coli O157:H7 Peptides May Contain Putative Beta-Lactamase Activity*. EC Microbiology 16(8): 73-79.
44. Cheong, KC, Hon, RYH, Sander, CJ, Ang, IZL, Foong, JH, **Ling, MHT**. 2020. *A Simulation Study on the Effects of Media Composition on the Growth Rate of Escherichia coli MG1655 using iAF1260 Model*. Acta Scientific Microbiology 3(8): 40-44.
45. Neo, CY, **Ling, MHT**. 2020. *Prevalence and Length of Open Reading Frames Vary Across Randomly Generated Sequences of Different Nucleotide Compositions*. EC Microbiology 16(7): 72-78.
46. Sim, BKY, **Ling, MHT**. 2020. *Possibility of Abiotic Genesis of Biochemistry*. EC Microbiology 16(6): 104-109.
47. Teng, RSY, Kwang, JCY, Chin, ASQ, Sanders, CJ, Ang, IZL, Foong, JH, Cheong, KC, Hon, RYH, **Ling, MHT**. 2020. *Correlation Analysis on Transcriptomes from Published Human Skin Studies Show Variations between Control Samples*. EC Clinical and Medical Case Reports 3(6): 143-146.
48. **Ling, MHT**. 2020. *SeqProperties: A Python Command-Line Tool for Basic Sequence Analysis*. Acta Scientific Microbiology 3(6): 103-106.
49. Usman, S, Chua, JW, Ardhanari-Shanmugam, KD, Thong-Ek C, B, V, Shahrukh, K, Woo, JH, Kwek, BZN, **Ling, MHT**. 2019. *Pseudomonas balearica DSM 6083T promoters can potentially originate from random sequences*. MOJ Proteomics & Bioinformatics 8(2): 66–70.
50. **Ling, MHT**. 2019. *Island: A Simple Forward Simulation Tool for Population Genetics*. Acta Scientific Computer Sciences 1(2): 20-22.
51. **Ling, MHT**. 2019. *Draft Implementation of a Method to Secure Data by File Fragmentation*. Acta Scientific Computer Sciences 1(2): 10-13.
52. Ardhanari-Shanmugam, KD, Shahrukh, K, B, V, Woo, JH, Thong-Ek, C, Usman, S, Kwek, BZN, Chua, JW, **Ling, MHT**. 2019. *De Novo Origination of Bacillus subtilis 168 Promoters from Random Sequences*. Acta Scientific Microbiology 2(11): 07-10.
53. Chang, ED, **Ling, MHT**. 2019. *Explaining Monod in Terms of Escherichia coli Metabolism*. Acta Scientific Microbiology 2(9): 66-71.
54. **Ling, MHT**. 2019. *Science/Education Portraits V: The Scientific Tertiary Education that I had Envisioned*. Acta Scientific Medical Sciences 2(8): 75-79.
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### **Listing 1: Publications from Temasek Polytechnic**

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## **Listing 2: Publications from Honours Projects via MDIS**

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8. Johny, et al. 2021. *Simulation Suggests that One-Off Simple Supplementation from the Wild into Captive Population May Not Increase Captive Genetic Diversity*. EC Veterinary Science 6(7): 107-111.
9. Lim, et al. 2021. *Significant Differences in Nucleotide and Peptide Features Between Chromosomes Suggesting Sequence Non-Randomness Across Chromosomes*. Acta Scientific Microbiology 4(4): 23-28.

10. Kim, et al. 2021. *Science/Education Portraits VII: Statistical Methods Used in 1081 Papers Published in Year 2020 Across 12 Life Science Journals Under BioMed Central*. Acta Scientific Nutritional Health 5(3): 06-12.
11. Cho, and Ling. 2021. *Adaptation of Whole Cell Kinetic Model Template, UniKin1, to Escherichia coli Whole Cell Kinetic Model, ecoJC20*. EC Microbiology 17(2): 254-260.
12. Chew, et al. 2020. *Rapid Genetic Diversity with Variability between Replicated Digital Organism Simulations and its Implications on Cambrian Explosion*. EC Clinical and Medical Case Reports 3(11): 64-68.
13. Murthy, et al. 2020. *UniKin1: A Universal, Non-Species-Specific Whole Cell Kinetic Model*. Acta Scientific Microbiology 3(10): 04-08.
14. Wang, et al. 2020. *A Case Study using Mitochondrial Genomes of the Order Diprotodontia (Australasian Marsupials) Suggests that Single Ortholog is Not Sufficient for Phylogeny*. EC Clinical and Medical Case Reports 3(9): 93-114.
15. Kamarudin, et al. 2020. *A Simulation Study on the Effects of Founding Population Size and Number of Alleles Per Locus on the Observed Population Genetic Profile: Implications to Broodstock Management*. EC Veterinary Science 5(8): 176-180.
16. Tan, et al. 2020. *Core Pseudomonas Genome From 10 Pseudomonas Species*. MOJ Proteomics & Bioinformatics 9(3): 68–71.
17. Gunalan, et al. 2020. *One Percent of Escherichia coli O157:H7 Peptides May Contain Putative Beta-Lactamase Activity*. EC Microbiology 16(8): 73-79.
18. Usman, et al. 2019. *Pseudomonas balearica DSM 6083T promoters can potentially originate from random sequences*. MOJ Proteomics & Bioinformatics 8(2): 66–70.
19. Ardhanari-Shanmugam, et al. 2019. *De Novo Origination of Bacillus subtilis 168 Promoters from Random Sequences*. Acta Scientific Microbiology 2(11): 07-10.
20. Kwek, et al. 2019. *Random Sequences May Have Putative Beta-Lactamase Properties*. Acta Scientific Medical Sciences 3(7): 113-117.
21. Thong-Ek, et al. 2019. *Potential De Novo Origins of Archaeobacterial Glycerol-1-Phosphate Dehydrogenase (GIPDH)*. Acta Scientific Microbiology 2(6): 106-110.
22. Maitra, and Ling. 2019. *Codon Usage Bias and Peptide Properties of Pseudomonas balearica DSM 6083T*. MOJ Proteomics & Bioinformatics 8(2):27–39.
23. Kim, and Ling. 2019. *Proteome Diversities Among 19 Archaeobacterial Species*. Acta Scientific Microbiology 2(5): 20-27.

### **Listing 3: Advised Undergraduate and Postgraduates**

#### ***Postgraduates***

1. **Jack Jian Ming LEE** (2018 – 2021): MSc at School of Data Sciences, Perdana University, Malaysia. Thesis: Meta-ome for Homology Search.

#### ***Undergraduates***

1. **Shah Yunn NAING** (2022): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Population structure of admixed populations.
2. **Daeun ROH** (2022): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Chromosomal Organization of *Saccharomyces arboricola* H-6.
3. **Cedric CHEW** (2022): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore.
4. **Sandi Kyaw TUN** (2022): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore.
5. **Mee Khin WAI** (2022): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore.
6. **Shi Ya Ariel NG** (2021-2022): BSc(Hons) at Roehampton University (UK); via MDIS, Singapore. Thesis: Causes of Abdominal Obesity.
7. **Yuan Kai LOH** (2021-2022): BSc(Hons) at Roehampton University (UK); via MDIS, Singapore. Thesis: Artificial Sweeteners and The Risk of Cancers.
8. **Muhammad Rusydi Bin MAZLAN** (2021-2022): BSc(Hons) at Roehampton University (UK); via MDIS, Singapore. Thesis: How effective is nutrition in reducing the risk of Chronic Obstructive Pulmonary Disease (COPD) in smokers?
9. **Farij Bin SAMSUDI** (2021-2022): BSc(Hons) at Roehampton University (UK); via MDIS, Singapore. Thesis: Nutritional Knowledge in General Public: Systematic Review.
10. **Nur Khairina Binte AZAN** (2021-2022): BSc(Hons) at Roehampton University (UK); via MDIS, Singapore. Thesis: Effectiveness of Mediterranean Diet in Preventing Alzheimer's disease.



11. **Katheresan Selvam Sooriya KANNAN** (2021-2022): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Effect of Environmental Nutrient Availability on Intracellular Metabolite Amount in Digital Organisms Across Six Different Environments.
12. **Tanmay PATIL** (2021-2022): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Significantly Different Average Intracellular Metabolite Amounts Depending on Nutrient Availability in Digital Organisms.
13. **Rohit VIJ** (2021-2022): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Randomly Generated Nucleotide Sequences and their Relationship with the Mean Number of Protein Domains.
14. **Behnjemyn Jeng Kit LOH** (2021-2022): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Phylogenetic Analysis of the Evolution of Mitochondrial Genome of the Mammalia.
15. **Eugene Wei Jun THIA** (2020-2021): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Equal Proportion of Source Population to Admixed Population May Not Result in Stable Population Genetic Structure.
16. **Alan JOHNY** (2020-2021): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Simulation Suggests that One-Off Simple Supplementation from the Wild into Captive Population May Not Increase Captive Genetic Diversity.
17. **Pasumarthi SUMEDHA** (2020-2021): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Supplementation from the Wild as a Means to Mitigate Domestic Inbreeding.
18. **Garg Shubhangi VIBHOR** (2020-2021): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Effect of Bottlenecking on the Population Genetic Structure of an Isolated Population.
19. **Dennis Gee Yao ANG** (2020-2021): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Niche Adaptation as a Driver of Evolution: How does adaptation to environment drive evolution?
20. **Aarthi RAVICHANDRAN** (2020-2021): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: The Effects of Coding Density on Organism Fitness.
21. **Leejun CHO** (2020-2021): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Adaptation of Whole Cell Kinetic Model Template, UniKin1, to *Escherichia coli* Whole Cell Kinetic Model, ecoJC20.
22. **Mariia DOLMATOVA** (2020-2021): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Chromosomal Organization of *Plasmodium falciparum*.
23. **Phebe Hwee Boon LOH** (2020-2021): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Core and Pan-Genome of *Saccharolobus solfataricus*.
24. **Zhe En PHUA** (2020-2021): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: A Simulation Study on the Effects of Contamination on the Wild Population with Those in Captivity.
25. **Hykal Hassan AZMI** (2020-2021): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Logic of Chromosomal Organization in *Prunus dulcis* – Are Genes Organized into Chromosomes Randomly or Is There a Logical Aspect?
26. **Gabriel Zhen Kang LIM** (2020-2021): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Investigation of Non-Uniform Organization by Comparing Differences in Nucleotide and Peptide Properties Between Chromosomes *Sacrophilus harsii*.
27. **Si Min Shermaine CHEW** (2019-2020): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Rapid Genetic Diversity with Variability between Replicated Digital Organism Simulations and its Implications on Cambrian Explosion.
28. **Nikita YABLOCHKIN** (2019-2020): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Evolvability of Protein Domain Sequences.
29. **Xue Ting TAN** (2019-2020): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Core Pseudomonas Genome From 10 *Pseudomonas* Species.
30. **Avettra RAMESH** (2019-2020): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Biological Evolution – A Perspective on the Increase of Fitness Score Based on Genetic Variations.
31. **Nur Jannah KAMARUDIN** (2019-2020): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: A Simulation Study on the Effects of Founding Population Size and Number of Alleles Per Locus on the Observed Population Genetic Profile.
32. **Chieh Victor WANG** (2019-2020): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: A Case Study Using Comparative Phylogeny on Mitochondrial Genomes of Twenty-Four Organisms in the *Diprotodontia* Order (Australian Marsupials) Suggests That Single Ortholog Is Not Sufficient for Phylogeny.

33. **Vinayaka Murthy MADHURYA** (2019-2020): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Metabolic Flux Alteration Due to Varying Enzyme Parameters in a Universal Glycolysis Model.
34. **Celine Wong** (2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Probability of Beta-Lactamase Activity in *Lactobacillus*.
35. **Krishneswari Gunasekaran** (2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: One Percent of *Escherichia coli* O157:H7 Peptides May Contain Putative Beta-Lactamase Activity.
36. **Marilyn Neo** (2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Evolution of Apicoplast.
37. **Junhong WOO** (2018-2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: De Novo Origins of Origin of Replications.
38. **Sharlene USMAN** (2018 - 2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: De Novo Origins of *Pseudomonas balearica* Promoters.
39. **Khadija SHAHRUKH** (2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: De Novo Origins of *Pseudomonas putida* Promoters.
40. **Vicnesh B** (2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: De Novo Origins of Ribosome Binding Sites.
41. **Jing Wen CHUA** (2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: De Novo Origins of *Escherichia coli* Promoters.
42. **Chakrit THONGEK** (2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: De Novo Origins of Glycerol-1-Phosphate Dehydrogenase.
43. **Brenda KWEK** (2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: De Novo Origins of Beta-Lactamases.
44. **Keerthana Devi ARDHANARI SHANMUGAN** (2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: De Novo Origins of *Bacillus subtilis* Promoters.
45. **Dakshahini BALAN** (2018 - 2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Metabolic Modelling of Glycolysis Reaction.
46. **Shanthini SUBRAMANIYAM** (2018 - 2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Discovering Gene Commonality in Archaeobacteria.
47. **Nazatul SHEHNAZ** (2018 - 2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Frequency of Peptides and Antipeptides.
48. **Jung Hwan KIM** (2018 - 2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Differing Peptide Properties in Archaeobacteria.
49. **Braxton Jun Heng SIM** (2018 - 2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore.
50. **Jaron Jie Rong SOH** (2018 - 2019): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore.
51. **Jocelyn Xin Hui TAN** (2018): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Genomic Landscapes of *Streptococcus mitis* B6.
52. **Min Yi KOH** (2018): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: GC variation and Codon Usage Bias in *Corynebacterium striatum*.
53. **Argo MAITRA** (2018): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: Demystifying the Mechanism Underlying Codon Usage Bias in the *Pseudomonas balearica* DSM 6083<sup>T</sup> Genome.
54. **Wei Jie CHEAH** (2018): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: GC-content affects amino-acid usage and peptide physical properties to varying degrees in *Anopheles gambiae*.
55. **Fong Guan LAI** (2018): BSc(Hons) at Northumbria University (UK); via MDIS, Singapore. Thesis: From Gene to Peptide: The Secret within Honeybee.