

Nelvin Tan

Curriculum Vitae

PERSONAL DETAILS

Phone: +65 9363 8261

Email: nelvintan@u.nus.edu

Nationality: Singaporean

RESEARCH INTERESTS

I am interested in problems at the intersection of information theory and statistics. More specifically, my research investigates the fundamental limits and algorithmic performances of statistical algorithms.

EDUCATION

B. Comp. (Honours) – Turing Programme (4.68/5.0)

August 2017 – May 2021

National University of Singapore

Classification: Highest Distinction (First Class Honours)

Majors: Computer Science and Statistics

Specialization: Algorithms & Theory

EXPERIENCE

National University of Singapore

June 2020 – June 2021

Final Year Project (FYP)

- Title: Fast Splitting Algorithms for Noisy and Sparsity-Constrained Group Testing
- Supervisor: Asst. Prof. Jonathan Scarlett
- Designed and analyzed sub-linear time algorithms for noisy and sparse group testing.

National University of Singapore

June 2019 – June 2020

Undergraduate Research Opportunities Programme (UROP)

- Title: Sparse Group Testing: Bounds and Algorithms
- Supervisor: Asst. Prof. Jonathan Scarlett
- Obtained tight information-theoretic lower bounds for sparse group testing.
- Designed and analyzed nearly optimal algorithms for sparse group testing.

National University of Singapore

May 2018 – July 2018

Student Intern

- Implemented a solution to improve the clustering of news articles to improve data organization.
- Implemented a web application and graph visualization to display the results of the clustering algorithm.

National University of Singapore

May 2018 – July 2018

Orbital (Independent Software Development Project)

- Developed an event planner application for residential colleges.
- Implemented the QR code scanner feature to help students sign up for events.

National University of Singapore

January 2018 – April 2018

Teaching Assistant

- Module: CS2030 Programming Methodology II
- Planned, managed, and conducted weekly lab sessions.

- Led my tango in battalion level missions.
- Conducted and assisted in basic military training and specialized reconnaissance training.

SKILLS

Programming Languages (Computer Science): Python, Java, C
Programming Languages (Statistics): R, SAS, SPSS

AWARDS

- Outstanding Undergraduate Researcher Prize June 2021
(Best Undergraduate Researcher Prize – Individual)
- GCE A-Level Academic Excellence Award December 2014

PUBLICATIONS

Publications are listed in reverse chronological order.

Journal Papers:

- [1] Oliver Gebhard, Max Hahn-Klimroth, Olaf Parczyk, Manuel Penschuck, Maurice Rolvien, Jonathan Scarlett, and **Nelvin Tan**, “Near Optimal Sparsity-Constrained Group Testing: Improved Bounds and Algorithms,” (*In Submission*).

Conference Papers:

- [1] Eric Price, Jonathan Scarlett, and **Nelvin Tan**, “Fast Splitting Algorithms for Noisy and Sparsity-Constrained Group Testing,” (*In Submission*).
- [2] **Nelvin Tan** and Jonathan Scarlett, “An Analysis of the DD Algorithm for Group Testing with Size-Constrained Tests,” *IEEE International Symposium on Information Theory (ISIT)*, July 2021.
- [3] **Nelvin Tan** and Jonathan Scarlett, “Near-Optimal Sparse Adaptive Group Testing,” *IEEE International Symposium on Information Theory (ISIT)*, July 2020.