

# TAN Yee Jian

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## Education

**B.Comp (Hons) in Computer Science (Distinction)**

**B.Sc (Hons) in Mathematics (Highest Distinction)**

**National University of Singapore**

**Aug 18 to Jun 23**

- Thesis: Formalizing Coq Modules in the MetaCoq Project
- Focus Areas: Algorithms and Theory, Programming Languages, Algebra, Mathematical Logic
- Modules Taken: Type Theory, Logic for Proofs and Programs, Compiler Design, Advanced Operating Systems, Formal Specification and Design Techniques, Logic and Foundations of Mathematics, Algebraic Geometry
- Teaching Assistant:
  - CS1101S: Programming methodology (1 semester, SICP in Javascript)
  - CS1010E: Programming methodology (4 semesters, Python for Engineering students)
- University Scholars Programme

**Oregon Programming Languages Summer School (OPLSS)**

**Jul 21**

Attended the OPLSS 2021 virtually.

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## Research and Work Experience

**Research Intern**

**May 22 to Aug 22**

**Gallinette, INRIA**

Worked on formalizing the Coq Module system in the MetaCoq project, proving fundamental typing properties and correctness of the Coq implementation in Coq itself. Project is continued as my bachelor's thesis (in progress, defending in Apr 2023).

**Intern, Machine Learning Engineer**

**May 20 to Sep 20**

**Gojek Singapore**

Jointly designed and packaged a Google BigQuery to Apache Kafka **data ingestion tool** that increased ingestion rate from ~10k to > 3000k rows/second using Google Cloud Dataflow.

**Software Engineering Intern**

**May 19 to Aug 19**

**Computing for Voluntary Welfare Organisations (CVWO), NUS**

- Streamlined and digitized volunteering workflow for more than 100 students every year by developing and maintaining a **Volunteer Management System** for the GIC Sparks and Smiles program.
  - For more than 6000 clients and 100 staff, reduced operating costs and increased the accuracy of data capture by maintaining a **Case Management System** for the Counseling and Co-parenting Centers by CareCorner.
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## Publications

**A Stepper for a Functional JavaScript Sublanguage ([paper](#), [slides](#), [recording](#))**

Martin Henz, Thomas Tan, Zachary Chua, Peter Jung, Yee-Jian Tan, Xinyi Zhang, Jingjing Zhao  
In *ACM SIGPLAN conference on Systems, Programming, Languages, and Applications: Software for Humanity (SPLASH-E) 2021*

I wrote the small-step semantics [evaluator](#) of a functional JavaScript sublanguage in the above paper during my freshman year summer break individually. This is now used by all CS students of NUS in their first programming course, CS1101S.

Other conferences attended: PLMW@PLDI 2021, TYPES 2022

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## **Awards**

**NUS University Scholars Programme** - Honour Roll (2020/21), Senior Honour Roll (2022/23)

**NUS School of Computing** - Honour List of Student Tutors (2019/20)

**Malaysian Computing Olympiad** - National Joint 13th place (2018)

**VIVACE National Piano Ensemble Competition** - National Champion (2017)

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## **Scholarship and Grants**

**Dr Goh Keng Swee Scholarship**

**Aug 18 to present**

Prestigious full scholarship awarded to 3-4 selected students annually from 15 Asia Pacific economies, by the Association of Banks in Singapore (ABS).

**MOE ASEAN Scholarship**

**Nov 13 to Dec 17**

Offered by the Ministry of Education (MOE) in Singapore to rigorously selected students from ASEAN countries to study in Singapore until high school graduation, with expenses fully covered for 4 years.

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## **Clubs and Societies**

**NUS Piano Ensemble** - Member (2018-2023)

Classical pianist by training, I hold the Licentiate of Trinity College London (LTCL) in Piano Performance and was the Champion of VIVACE National Piano Ensemble Competition for Tertiary Institutions in Singapore in 2017.

**NUS Chinese Orchestra** - Member (2018-2023), Erhu II Principal Player (2020), Double Bass Principal Player (2021)

**Head, USClassical (Residential College Classical Music Interest Group, 2020)**

**Head, USDevs (Residential College Technological Development Club, 2020)**

Other than organizing classical music recitals, I joined development projects such as Laundry Bot and maintaining the Student Club website.

**Representative**, Inter-Faculty Games (Badminton, 2018) and Inter-College Games (Volleyball, 2021)