Declan Thompson

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SUMMARY

- Interdisciplinary PhD candidate researching foundations of algorithms
- Developer of a Java application used in educational settings
- Excellent communicator
- Background in computer science, linguistics, mathematics, and logic

EDUCATION

STANFORD UNIVERSITY

PhD in Philosophy
2016-(2023) | Stanford, CA
Special Track in Symbolic Systems

Graduate Certificate in Computer Science Education
2020-(2023) | Stanford, CA

UNIVERSITY OF AUCKLAND

BA (Hons) in Logic & Computation
2015 | Auckland, NZ
With First Class Honours

BSc in Mathematics
2011-2014 | Auckland, NZ

BA in Logic & Computation and Linguistics
2011-2014 | Auckland, NZ
Senior Scholar

COURSEWORK

GRADUATE LEVEL

Advanced Topics in Logic
Natural Language Processing
Computational Complexity
Advanced Algorithmic Analysis

UNDERGRADUATE LEVEL

Machine Learning
Algorithms and Data Structures
Philosophy and Computation
Probability

SKILLS

PROGRAMMING

Over 5000 lines:
Java • LaTeX • Isabelle/Isar
Proficient:
Python • C++ • BASH • Prolog

SOFT SKILLS

Critical thinking • Creativity
Communication • Problem Solving

EXPERIENCE

STANFORD UNIVERSITY | Instructor, Researcher

September 2017 – Present | Stanford, CA

- Primary instructor for introductory courses on algorithms, formal methods in philosophy, and formal logic
- Authored teaching materials for courses in computer science, decision theory, and logic
- Implemented a research program intersecting theory of algorithms, formal verification, programming language semantics, and computability theory
- Led a team of 8 student organisers for a yearly interdisciplinary conference, building relationships across departments to secure funding

UNIVERSITY OF AUCKLAND | Volunteer Developer

November 2013 – Present | Auckland, NZ and Remote

- Defined the scope of a Java-based interactive proof assistant (available `online`) in partnership with teaching staff
- Analysed user requirements to guide product development
- Proposed new features to improve user experience
- Developed and maintained a codebase with yearly bug-fixes and feature updates

UNIVERSITY OF AUCKLAND | Teaching Assistant, Researcher

July 2014 – November 2015 | Auckland, NZ

- Collaborated with faculty to formally verify a novel result in computability theory in the Isabelle proof assistant
- Responsible for evaluating student performance in classes of up to 300 students

KTA LTD. | Intern

Summers 2010 – 2012 | Auckland, NZ

- Innovated a filename coding scheme to increase productivity
- Collaborated with a team of architects and software developers to ensure timely delivery of architectural rendering projects

SCHOLARSHIPS & AWARDS

2021 Suppes Dissertation Fellowship (Stanford University)
2019 Pigott Scholarship (Stanford University)
2015 Montgomery Memorial Prize in Logic (University of Auckland)
2014 J.C. Butcher Award in Theoretical Computer Science

SELECTED PUBLICATIONS & CONFERENCES

2023 "Execution trace sets for real computation." Theoretical Computer Science 940 (January 9, 2023)

2021 "Computable Execution Traces." In A. Silva, R. Wassermann, and R. de Queiroz (eds.) *Logic, Language, Information, and Computation* (WoLLIC 2021). Springer, LNCS 13038

2018 "Goal structure and Nash equilibria." 13th Conference on Logic and the Foundations of Game and Decision Theory, Milan, Italy

2016 "Incompleteness, undecidability and automated proofs." In V. P. Gerdt, W. Koepf, W. M. Seiler, E. V. Vorozhtsov (eds.) *Computer Algebra in Scientific Computing* (CASC 2016). Springer, LNCS 9890
Co-authored with C. S. Calude

2015 "Teaching natural deduction in the right order with Natural Deduction Prover." Fourth International Conference on Tools for Teaching Logic, Rennes, France
Co-authored with J. Seligman