Dan (Shi Jie) Tan

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EDUCATION

University of Waterloo (Waterloo, CA) **2015 – 2020**

Civil Engineering, Honours BASc (Cumulative Average: 74%)

- **Relevant Courses:**
  - Databases & Software Design: Designed database schemas and wrote queries using MySQL; Created RESTful backend applications with Ruby on Rails and used RSpec for unit testing
  - Systems Programming & Concurrency: Implemented synchronization patterns using C
  - Algorithms & Data Structures: Wrote data structure and test programs in an object-oriented manner using C++
  - Pattern Recognition & AI: Applied distance and probability classifications, parametric & nonparametric learnings through MATLAB; Used Python and TensorFlow to create AI models

University of Leeds (Leeds, UK) **January – June 2019**

- **Computational Fluid Dynamics Project:** Investigated the effects of fluid flow and heat transfer in microchannels through the finite volume method

EXPERIENCE

Research Assistant – Hydrologic Model Development & Analysis
Water Institute, Waterloo **April – August 2018**

- Developed and debugged the infiltration subroutines of the hydrologic model – MESH in structured programming style by reading Fortran documentation and using automated tests
- Conducted time series analysis of hydrologic data by utilizing regression and dynamic time warping techniques through R's libraries, improving the model calibration process
- Adopted version control by using concurrent versioning system (CVS) in collaboration with the research group at the University of Saskatchewan
- Presented research summary of interflow and infiltration algorithms at the 2018 Canadian Geophysical Union Conference (CGU) in Niagara Falls

Technical Intern
Simpson Gumpertz & Heger (ENR 500 Consulting), San Francisco **September – December 2019**

- Developed and presented visual contents including decision trees and flowcharts for foundation waterproofing based on engineering documentation and specifications
- Identified building enclosure design issues and revised based on building physics principles including heat flow, air ventilation, and water infiltration
- Displayed effective communication and organizational abilities by assisting with 20+ technical reports
- Demonstrated attention to detail by verifying submittals based on shop drawing and datasheet reviews

Project Coordinator
EllisDon - Ottawa Light Rail Transit Project, Ottawa **September – December 2017**

- Performed scheduling through Gantt charts and the critical path algorithm for minimizing project delays
- Verified 50+ contracts for project submittals and conducted quantity take-offs (estimating) for cost control, successfully reducing the project closure phase
- Utilized Oracle's Primavera software for tracking project progress and responding to inquiries

Structural Modelling Intern
HongRun Group Co. Ltd, Shanghai **January – April 2017**

- Demonstrated quantitative abilities by calculating load combinations for model input and evaluating the model output with respect to the building code
- Drafted structural details per specifications through AutoCAD

ACHIEVEMENTS & LEADERSHIP ----------

- **Hult Prize Waterloo Finalist - Craft Collective:** Selected as one of the top 8 finalist teams to pitch youth unemployment solutions out of 30+ teams
  - **Reference:** https://uwaterloo.ca/conrad-school-entrepreneurship-business/news/student-entrepreneurs-pitch-solutions-youth-unemployment
- **Podcast Team @ Engineers Without Borders UW Chapter:** Co-produced sustainability-themed podcasts from a systems-thinking perspective, aiming to increase awareness on campus
  - **Reference:** https://anchor.fm/uwaterlooewb/
- **UW Varsity Athlete - Tennis**: Selected as one of the 9 roster players out of 50+ players in the varsity tryout
  - **Reference:** https://athletics.uwaterloo.ca/sports/mens-tennis/roster/2018-19
- **Teaching:**
  - Certified Tennis Canada Instructor
  - Stepping Stones China English Teacher: teaching 15+ migrant children in China
  - Daedalos Academy Camp Assistant: tutoring LEGO robotics to primary school children
- **Campus Sustainability Initiative:** Campus Compost Operator
- **Recipient of the UW President's Scholarship**

TECHNICAL SKILLS ----------

- **Languages:** C++, C, Python, R, MATLAB, SQL, HTML, CSS, JavaScript, Ruby
- **Frameworks and Libraries:** Rails, TensorFlow
- **Tools:** Git, Shell, Valgrind, RSpec