

Dan Tan

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EDUCATION

University of Waterloo (CA) & University of Leeds (UK)

Sep 2015 – Oct 2020

Civil Engineering, Honours BAsC

- **Courses:** Algorithms & Data Structures, Artificial Intelligence, Pattern Recognition, Optimization, Numerical Computation, Systems Programming & Concurrency, Databases & Software Design

PROJECTS

- **Dungeons & Dragons:** Developed a spell book management app with a 3-tier architecture (**Rails, PostgreSQL**)
 - **App:** dd-spellbooks.herokuapp.com
- **Mail:** Designed a front-end for an email client that generates API calls to send and receive emails (**JavaScript**)
- **Fifth Grader:** Designed a math game UI with various operations and difficulty levels (**React, Bootstrap**)
- **Shopping:** Created an ML model to predict whether online customers will complete a purchase (**Scikit-learn**)
- **Crossword:** Wrote an AI that solves crossword puzzles through backtracking & heuristics (**Python**)
- **Traffic:** Architected a convolutional neural network that predicts traffic signs with 97% accuracy (**TensorFlow**)
- **Web Crawler:** Implemented asynchronous I/O with cURL for web crawling PNG files (**C, Valgrind**)

EXPERIENCE

Research Assistant – Hydrologic Model Development & Analysis

Water Institute, Waterloo

Apr – Aug 2018

- Calibrated and optimized model performance by tuning input parameters through the NSE metric
- Developed and debugged model subroutines with 2000+ lines of code through pair programming
- Evaluated model predictions by analysing hydrologic time-series data through the ARIMA and DTW techniques
- Presented research summary of the model algorithms at the 2018 Canadian Geophysical Union conference to a group of 30+ researchers

Engineering Consultant

Simpson Gumpertz & Heger, San Francisco

Sep – Dec 2019

- Developed and presented algorithmic flowcharts and decision trees by parsing engineering documentation and specifications, thus pinpointing minimal design requirements to clients
- Investigated design failures forensically and revised 100+ design issues, enhancing building enclosure performance
- Examined product submittals and drafted 10+ consulting reports for construction QA in close collaboration with senior project consultants and managers

Student Entrepreneur (For Us, By Us)

Sep – Dec 2018

Craft Collective – Hult Prize Finalist, Waterloo

- Pitched a handicraft e-commerce solution with a platform mock-up for employing 10,000 women and empowering handicraft cooperatives
- Engaged in design-thinking and conducted handicraft market research by surveying 22 collectives and analysing sociodemographic reports of young women in developing countries
- Established revenue growth strategies and value proposition that addresses pain points

Project Coordinator

EllisDon – Ottawa Light Rail Transit Project, Ottawa

Sep – Dec 2017

- Coordinated project schedules by tracking and documenting daily progress and interfacing with subcontractors in a 200+ people team
- Estimated and verified material quantities and invoices for cost control, successfully reducing the closure phase