

Dan Tan

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EDUCATION

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

2015 – 2020

Bachelor of Applied Science, Civil Engineering

- **Courses:** Algorithms & Data Structures, Databases & Software Design, Pattern Recognition, Artificial Intelligence, Systems Programming & Concurrency, Numerical Computation, Transportation Planning & Modelling, etc.

EXPERIENCE

Software Engineering Immersion

May 2020 – Present

- Designed relational schemas and developed a full-stack book management app
 - App: *dd-spellbooks.herokuapp.com*
- Created a math game and meme generator UI that makes API calls
- Implemented multi-threaded and asynchronous I/O with cURL for web crawling PNG files
- Adopted test-driven development by writing unit tests for a word game
- Built probabilistic and optimization models using Bayesian network, backtracking search, and DP
- Architected a CNN model that predicts traffic signs with 97% accuracy

Rails, PostgreSQL

React, HTML, CSS

C, Git

Ruby, RSpec

Python

TensorFlow

Research Assistant – Hydrologic Model Development

Water Institute, Waterloo

Apr – Aug 2018

- Developed & debugged soil infiltration subroutines through pair programming
- Analysed hydrologic time-series data through ARIMA and dynamic time warping
- Presented research summary of the model algorithms at the 2018 CGU conference to a group of 30+ researchers
- Calibrated and optimized model performance by tuning input parameters through the NSE metric
- Utilized the CLI for running file systems, automated tests, and software version control

Fortran

R

Consulting Intern

Simpson Gumpertz & Heger, San Francisco

Sep – Dec 2019

- Designed flowcharts & decision trees by parsing design standards, codes, and specifications for clients
- Revised building enclosure design drawings through CAD & Bluebeam Revu, enhancing the system durability and energy efficiency
- Documented & investigated glazing design failures through forensic testing & analysis for litigation support

Entrepreneur

Sep – Dec 2018

Craft Collective – Hult Prize Finalist, Waterloo

- Ideated a handicraft e-commerce solution and prototyped a mock-up for empowering youth and cooperatives
- Conducted handicraft market research by surveying 22 collectives and analysing sociodemographic reports
- Established value proposition and selected KPIs for gaining and measuring traction

UW EWB Podcast Co-host – Ideas Without Borders

May – Aug 2018

- Advocated systems thinking to engineers and university students through podcasts with 1000+ views
- Topics: Big data, feedback loops, biases & heuristics, sustainable transportation, and healthy food

Project Coordinator

EllisDon – Ottawa Light Rail Transit, Ottawa

Sep – Dec 2017

- Tracked project schedules by writing progress memos, reports, and meeting minutes & updating Gantt charts
- Coordinated project activities by interfacing with subcontractors, QAs, and field engineers in a 200+ people team and responding to RFIs and change orders
- Estimated & verified project budgets and contracts using MS Excel for cost control, reducing the closure phase