

# 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**

**May 2020 – Present**

- Designed relational schemas and developed a full-stack book management app using Rails and PostgreSQL
  - App: *dd-spellbooks.herokuapp.com*
- Architected RESTful APIs and routers in React for fetching data and building single-page UIs
- Adopted test-driven development by writing unit tests for a word game program in RSpec
- Implemented multi-threaded and asynchronous network programs using C and Valgrind
- Built 10+ AI models using Python and various frameworks including TensorFlow, Scikit-learn, and NLTK

**Research Assistant – Hydrologic Model Development**

**Water Institute, Waterloo**

**Apr – Aug 2018**

- Developed & debugged soil infiltration subroutines through pair programming in Fortran
- Analysed hydrologic time-series data through ARIMA and dynamic time warping using R
- 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

**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