Ze Ming (Tommy) Xiang

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Professional Experience

- **Google LLC**, *Software Engineering Intern, Google Docs Team* 2018 Summer
  - Released completed feature to Google Docs Android, reaching millions of users
- **University of Toronto**, *Research Assistant* 2017 Summer
  - Assisted CS Professor with educational game design research, written report on data analysis
  - Design and developed educational game Deadlook (**Link**) , constructed survey, gathered data from 20+ testers
  - Implemented graphical block scripting interface and compiler in Unity **C#**, using embedded JS engine
  - Received A+ evaluation from supervisor: Prof. Steve Engels. Featured on UofT News (**Link**)

Education

- University of Toronto, Honors B.Sc, Computer Science Specialist **Class of 2020**

- Dean's List Scholar, President's Entrance Scholarship
- Finished Courses - **GPA: 3.97**:
  - Enriched Introduction to the Theory of Computation
    - Class Average: 70, Final Mark: 98
  - Neural Networks and Machine Learning
  - Natural Language Computing
- Current Courses:
  - Introduction to Visual Computing
  - Machine Learning and Data Mining
  - Computer Graphics
  - Statistics for Computer Scientists

Skills

- Proficient in: **Python**, **C**/**C++**, **C#**/**Java**, **HTML**, **CSS**, **JavaScript**. Familar with: **TypeScript**, **QML**, **Haxe**, **SQL**.
- Frameworks: Node.js, Express, Angular 2, Ionic, Qt Quick, Vue.js, PyTorch, OpenFL, Google Closure Library.
- Tools: Linux, Vim, Emacs, Git, Qt Creator, Photoshop, Flash Professional, Unity3D, Microsoft Office.

Personal Projects

- **Time Management App** 2017 - present
  - Implemented rigorous time-management hybrid app using HTML, CSS, TypeScript, Angular 2 and Ionic, with automatic scheduling and reward system.
  - Designed greedy algorithm to achieve real-time planning up to 365 days into the future
- **Neuro-evolution Demo**(**Link**) 2016
  - Implemented neural network with evolutionary algorithm in C++ using SFML framework during high school
  - Successfully trained simulated ants to seek food by learning
- **TensorBuilder**(**Link**) 2017
  - Implemented a GUI editor for TensorFlow™ in QML and JavaScript using Qt
- **Cellular**(**Link**) 2015 - present
  - Designed and developed procedural 2D action / adventure game in Unity C# and Haxe
  - Implemented procedural generation as well as culling algorithm to support seamless map with 65536+ tiles
  - 1st place in UofT Game-Making Deathmatch 2017

Awards and Contributions

- 1st Place - Bloomberg Codecon UofT 2017
- 2nd Place - Microsoft Code Competition UofT 2017
  - Solved one of the hardest problem
- 2nd Best Accuracy - (National) USC Competition 2017
  - Developed geo-locator tool for drone mission
- 1st Overall - UofT Game-Making Deathmatch 2017
  - Best Technical Achievement Award
  - Judges recommended commercial release
- Silver Medalist - (National) Canadian Computing Olympiad(**Link**) 2016
- 3rd Place - Big Data Challenge 2016
  - Journal Published on STEM Fellowship
- Vision Subdivision Lead of University of Toronto Aerospace Team: Aerial Robotics division 2016 - present
- Co-President of Game Design and Development Club 2016 - present

Course Projects

- **Machine Translator** 2018
  - Written Python application to translate text across different languages, using smoothed n-gram model
  - Applied IBM-1 alignment model, evaluates with BLEU
- **Emoji Style-Transfer** 2018
  - Implemented CycleGAN, a Deep Convolutional Generative Adversarial Network (DCGAN) in PyTorch
  - Performs unpaired style-transfer between Windows and iOS emoji.
- **ShareSchedule**(**Link**) 2017
  - Developed vanilla JS website allowing intelligent time table planning for UofT students, with the ability to see Facebook friends' schedules
  - Written RESTful API backend and backtracking algorithm in JavaScript to automatically solve for conflict-free schedules