**THOMAS TAY**

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### education

## University of Michigan Ann Arbor, MI

B.S. Computer Science, B.S. Honors Mathematics *Expected: May 2020*

**GPA:** 3.9/4.0 - Awarded EECS Scholar (2019) for academic excellence in Computer Science.

**Course Highlights**: Distributed Systems (491), Operating Systems (482), Computer Security (388), Applied GPU

programming, Data Structures & Algorithms (281), Probability & Statistics, Honors Linear Algebra (MATH 296).

**Work experience**

Microsoft Seattle, WA

*Software Engineering Intern – MS Teams May 2019 – Aug 2019*

Software engineer on Teams, a Slack-like single page web app using *Angular*, *React* and *Node*.

Designed and implemented a brand-new feature to lock replies to a thread,   
and a feature to remotely refresh a user’s cache based on their geographical location.

* Enforced locking on the backend, using server-side validation to ensure locked threads are not replied to.
* Improved delivery rate of messages to users, by automating local cache refresh on server change.
* Prevented fragmentation of information across threads to enhance focus during emergencies.
* Locked threads after a monthly promotion ended, improved app experience for retail Teams users.

University of Michigan – EECS 203 Discrete math Ann Arbor, MI

*Instructional Assistant Aug 2018 – Present*

Exam management team lead for my University’s Discrete Math course.

* Organized and reviewed all exam questions for over 800 students, making sure exams were appropriate.
* Created lesson plans that aligned with University standards for a class of over 30 students.

singapore armed forces (SERGEANT) Singapore

*3rd Sergeant - Transportation Command HQ* *Feb 2015 – Feb 2017*

* Led a unit of 50+ soldiers on transportation missions, including replenishments of mission critical supplies, ensuring mission readiness through training of personnel for the job.
* Maintained morale and discipline by upholding leadership standards and punishing defaulters.

**Computer science PROjects**

**FACEbook for Microsoft Teams** (2019)

Built an aggregated newsfeed that pulls together all a user’s recent likes, at-mentions and comments.

* Sped up user reply time 200% by eliminating the need to switch channels between replies.
* Facilitated quick dives into a channel by dynamically updating the webpage in Angular.
* Optimized speed by synchronizing reply chain objects across the server, local storage, and memory cache.

**failure-tolerant distributed system** (2019)

Designed and wrote a replicated state machine using Primary-Backup replication.

* Tolerant to any failures in the primary and backups, restoring any failed machine to the last good state.
* Ensured 100% correctness by randomizing the system under a variety of failure conditions.

**Instagram post auto-scheduler** (2018)

Made a full-stack web app using Python Flask and Bootstrap.

* Allowed users to schedule Instagram posts at a specific time, also automating liking and following.
* Persisted users’ schedules by using SQLite as a lightweight backend database.

**CS Skills Expert:** C++, Python, Typescript **Worked with:** C#, Go, F#, Bash, Rust

**Frameworks** Angular, React, Node, Electron, Git, Docker, CMake, Flask, .NET, Giraffe (F#)

**For Fun** Ballroom Dancing, Raspberry Pi, Functional Programming