

## TONGXU (TONY) BAI

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### OBJECTIVE

Dedicated undergraduate engineering student in computer science with a robust background in mathematics.

### EXPERIENCE

#### Incoming Software Engineering Intern

June 2020 - August 2020

Citadel Securities, LLC

- I plan on joining Citadel Securities as an intern on the CES Technology team.

#### Software Development Engineer Intern

Amazon.com, Inc., Seattle, WA (Community Shopping Team)

May 2019 - July 2019

- Developed a service which surfaces recommendation widgets on product detail pages with our custom strategy and renders them.
- Widget linked users to content found on Amazon #FoundItOnAmazon/Amazon Spark which had 1,000,000+ weekly active users.
- Gained experience with code reviews, version control, and Amazon's DevOps tools, as well as Java and AWS ElasticSearch.

### EDUCATION

#### University of Michigan, Ann Arbor, MI

September 2018 - May 2022

Bachelor of Science in Engineering in Computer Science and Data Science

Major GPA: 3.885

Minor in Honors Mathematics

GPA: 3.72

### COURSEWORK

EECS	A- in Object-Oriented and Advanced Programming in C/C++ (381), A+ in Data Structures and Algorithms (281), A in Computer Organization (370), A in Foundations of Computer Science (376)
MATH	Honors Analysis I (395), Combinatorics (465), Probability (525), Honors Algebra I (493)
Current	Operating Systems (EECS 482), Web Systems (EECS 485), Logic Design (EECS 270), Machine Learning on Coursera

### SKILLS

Programming/HDL Languages: C/C++ (most proficient), Python, Bash, Verilog, Java

Basic Experience With: AWS EC2, SQLite, Flask, ReactJS, REST APIs, Sockets

Mathematics: Proof-writing, competition math, linear algebra, graduate-level probability & combinatorics

Languages: English (native), Chinese (native in speaking and listening), German (basic)

### PUBLICATIONS & PROJECTS

#### Class Projects.

Implemented design patterns in high-quality C/C++ (EECS 381), a thread library, a memory pager, and a network file system (EECS 482), a clone of Instagram with Jinja/Flask/React, a MapReduce server, and a basic tf-idf/PageRank search engine (EECS 485).

#### Generator for Simple Zeckendorf Sequences.

<https://github.com/tonyb7/zeckendorf-sequences>

Developed an algorithm to generate simple Zeckendorf sequences and implemented it in C++ to help my friend write her math paper.

#### Chess Bot. Challenge me to find out my secrets!

<https://lichess.org/@/TurtleBot>

Canadian linguist Sonja Lang reached out to me to create this chess engine (built on top of the Winter engine) with custom behavior.

### HONORS & AWARDS

- Two-time National AP Scholar
- National Merit Finalist and U.S. Presidential Scholar Nominee
- Michigan Mathematics Prize Competition Top 20 and Two-time AIME qualifier
- University of Michigan ICPC Team - Second Place at GVSU Site for 2019 ECNA Regionals