

Tim O'Brien

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Education

Vanderbilt University

Bachelor of Science

Nashville, TN

Expected May. 2021

- **Triple Major:** Computer Science | Applied Mathematics | French
- **Cumulative GPA:** 3.93/4.00 | **Computer Science GPA:** 4.00/4.00
- **Relevant Coursework:** Algorithms | Intermediate Software Design | Operating Systems | Programming Languages
- **Honors and Awards:** Clark Scholarship — given to high-achieving engineering student leaders, with a focus on service and business Dean's List (all semesters) | National Merit Scholarship Winner | USA Physics Olympiad Bronze

Georgia Tech Lorraine

Study Abroad Semester

Metz, France

Jan. 2020 - Apr. 2020

Work Experience

Foursquare - Cancelled due to COVID-19

Software Engineering Intern

Los Angeles, CA

May. 2020 - Aug. 2020

Vanderbilt University Department of Computer Science

Teaching Assistant for Data Structures and Intermediate Software Design

Nashville, TN

Aug. 2018 - Present

- Teach 150+ students elements of C++ including data structures, patterns, and the Standard Template Library.
- Grade student assignments and exams for Program Design and Data Structures (Fall 2018) and Intermediate Software Design (2019).

Itopia

Software Engineering Intern

Miami, FL

May. 2019 - Aug. 2019

- Built portal to allow support team secure access to cloud organizations and deployments using TypeScript, Angular, and REST API.
- Enhanced back end to only grant portal access to privileged users as an addition to the existing internal site through Firebase.
- Implemented read-only access for all outgoing API requests by adding an authorization string as an OAuth 2.0 Bearer Token.
- Constructed single-page application with tailor-made datasource, server-side pagination, and filtering to clearly render cloud data.

Institute for Software Integrated Systems at Vanderbilt University

Summer Research Intern

Nashville, TN

May. 2018 - Aug. 2018

- Created decentralized application (DApp) using Solidity smart contracts to securely share patient histories for addiction treatment.
- Developed custom back end to support smart contract using Node and Firebase. Designed front end using React and Bootstrap.

Projects

Markov Chain Cut-ups

Dec. 2018

- Developed Markov Chain-based text generation in C++ to produce passages based on works of different authors of Beat Generation.
- Read authors' works from a directory, generating new copycat text. Randomly shuffled and formatted sections to create output file.

C++ Test-Driven Development Projects

Aug. 2018 - Dec. 2018

- Implemented strongly exception-safe STL members in C++ using templates: vector, linked list, stack, queue, and unique pointer.
- Adhered to software design patterns to build model solar system simulating interplanetary motion and expression tree calculator.

Extracurricular Activities

VandyHacks

Content Team and Development Team

Nashville, TN

Aug. 2017 - Present

- Develop workshops to teach various technologies, such as NLP and Angular, at local Hack Nights and annual 650+ student hackathon.

Vanderbilt Student Volunteers for Science

Volunteer

Nashville, TN

Jan. 2018 - Present

- Teach hands-on science and robotics lessons to students in grades 5-8 weekly in class and after school throughout Nashville area.

Skills and Interests

Foreign Languages: Professional working proficiency in French | Limited working proficiency in Russian

Programming Languages: Proficient: C++ | TypeScript **Experienced:** C | Java **Familiar:** SQL | Python | Racket

Interests and Hobbies: Ultimate Frisbee | Cooking | Online multiplayer games | Poker Theory | Weightlifting