

# Theo Rode

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## Projects

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| Oct 2022 - present  | <b>Spotify Analytics Dashboard Webapp</b> <ul style="list-style-type: none"><li>• Engineering a webapp using a Tauri + Rust backend with a Svelte + D3.js frontend.</li><li>• Compiling analytics to improve insights into listening history and habits over time.</li></ul>   |
| Aug 2022 - present  | <b>Rust Spotify API Wrapper</b> <ul style="list-style-type: none"><li>• Developed an intuitive library structure as a wrapper for the Spotify Web API in Rust.</li><li>• Implemented the PKCE extension for OAuth2 authorization with the API.</li><li>• Constructed custom formatting algorithms for objects to improve usability of API.</li><li>• Uploaded as an open source library to Rust's Crates.io package marketplace.</li></ul> |
| Nov 2021 - Dec 2021 | <b>The Three Body Problem Simulation</b> <ul style="list-style-type: none"><li>• Built a simulation engine in Python, using PyGame, for the Three Body problem: modeling the chaotic motion of three gravitational bodies.</li><li>• Collaborated with a group to improve accuracy and dependability of the simulation.</li><li>• Utilized the simulation to gain intuition for the chaotic system's behavior.</li></ul>                   |
| Jan 2021 - Apr 2021 | <b>Music Recommendation Engine</b> <ul style="list-style-type: none"><li>• Built a machine learning model with TensorFlow to predict if a song will be enjoyed.</li><li>• Interfaced with the Spotify web API to grab song data and formatted it with Pandas.</li><li>• Constructed a desktop application to view currently playing Spotify song, rate it to train the model, and see the model's prediction for likeability.</li></ul>    |
| May 2020 - Aug 2020 | <b>COVID-19 Data Analysis</b> <ul style="list-style-type: none"><li>• Cleaned and formatted COVID-19 case and death data in Python using Pandas.</li><li>• Analyzed data using numerous predictive models to determine patterns and create predictions.</li><li>• Crafted visual representations of data to demonstrate patterns and predictions.</li></ul>  |
| July 2021 - present | <b>Writing and Teaching Math Curriculum</b> <ul style="list-style-type: none"><li>• Identified major issues with traditional middle/high school math education through numerous interviews with a diverse group of teachers.</li><li>• Designed custom course curriculum with class notes typeset in LaTeX.</li><li>• Organized and taught calculus bootcamp for 9th graders using my custom curriculum.</li></ul>                         |

## Work Experience

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| Sep 2022 - present | <b>Homework Hotline Tutor</b> <div>Harvey Mudd College</div> <ul style="list-style-type: none"><li>• Provide math help through a call-in tutoring service free for kids from elementary to high school.</li><li>• Communicate over phone or messaging, adapting my communication style to the situation.</li></ul> |
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## Education

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| 2022-2026 | <b>Undergraduate Degree</b> <div>Harvey Mudd College</div> <p>Current freshman pursuing a degree in Computer Science and Math. Current coursework: CS42 (Principles &amp; Practice: Comp Sci), MATH19 (Single &amp; Multivariable Calculus), CHEM42, WRIT1, PHYS23</p>  |
| 2018-2022 | <b>High School</b> <div>The Nueva School</div> <p>GPA: 3.91 (unweighted). Relevant coursework: Quantum Information and Computation, Algorithms, Computer Security, Computer Vision, Multivariable Calculus, Linear Algebra, Intro and Advanced Machine Learning, Graph Theory, Game Design, Mobile App Design, Cryptocurrency</p> |

## Skills

- Programming languages: Julia, Rust, Python, Racket, JavaScript, TypeScript, MATLAB, HTML, CSS
- Tools: git, TensorFlow, Pandas, React Native, Unreal Engine, Svelte, Tauri, d3
- Strong leadership, teaching, and teamwork skills

## Hobbies

I love playing tennis and skiing. I also enjoy sleight of hand magic and have organized a group of fellow magicians to perform at birthday parties. Frequently, I can also be found solving puzzles.

## Non profit

Volunteered for the Service League of Boys for a year. Serviced bikes for people who needed them and packed food.