

Theo Rode

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Projects

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

Work Experience

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

Education

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| 2022-2026 | Undergraduate Degree | Harvey Mudd College |
| | Current freshman pursuing a degree in Computer Science and Math. Current coursework: CS42 (Principles & Practice: Comp Sci), MATH19 (Single & Multivariable Calculus), CHEM42, WRIT1, PHYS23 | |
| 2018-2022 | High School | The Nueva School |
| | 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 | |

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.