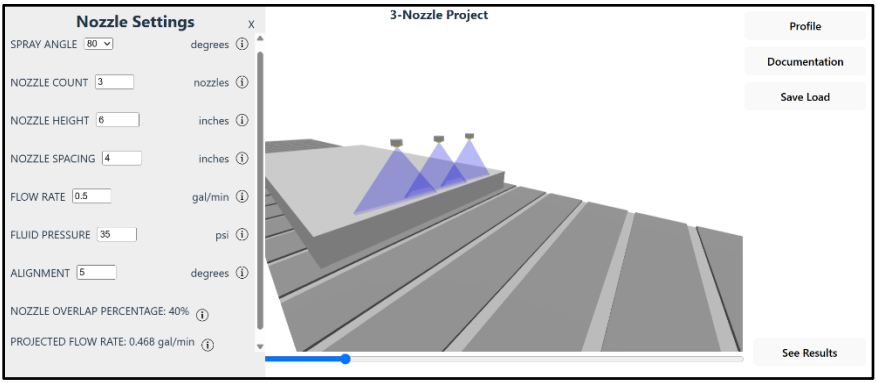
Senior Projects

Computer Science
Data Science

April 2025

Computer Science Projects

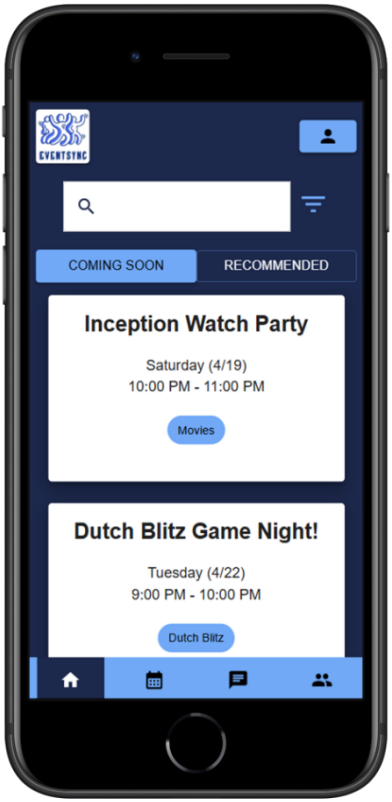
Computer science students work in teams of four or five on a yearlong project to design, build, and refine a software application.



The **Spraying System Visualizer** is a custom-made web application for Spraying Systems Co. Their salespeople and engineers can quickly create and test virtual models of new AutoJet spraying systems, which will be far more efficient than their current process of making a physical model of every system. The app provides information about the virtual model's performance, so the engineer can iteratively refine the model, improving the quality of coverage while minimizing waste.

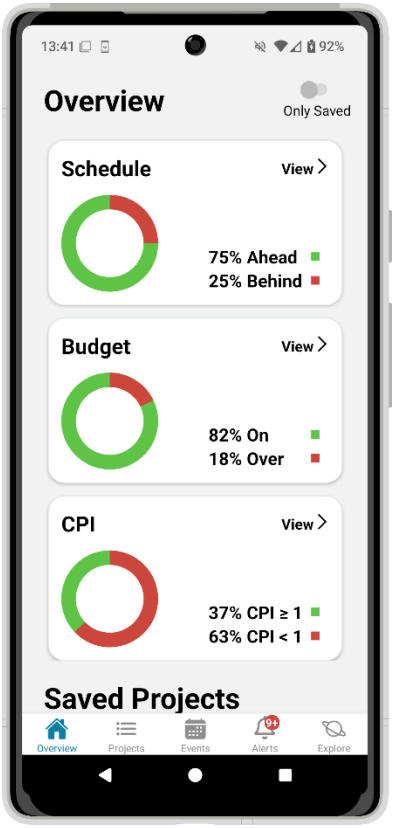
Alex Hemmerlin, Benjamin Raduns, Nathaniel Striebel, Brayden Stuchell

Client: Spraying Systems Co.



EventSync is a mobile-first web application designed to help Grove City College students plan and attend customized social gatherings. Users can choose to attend functions that meet their interests or create their own events, inviting others to join in the fun. EventSync aims to simplify the process of social event planning and coordination, enhancing the overall social experience for its users.

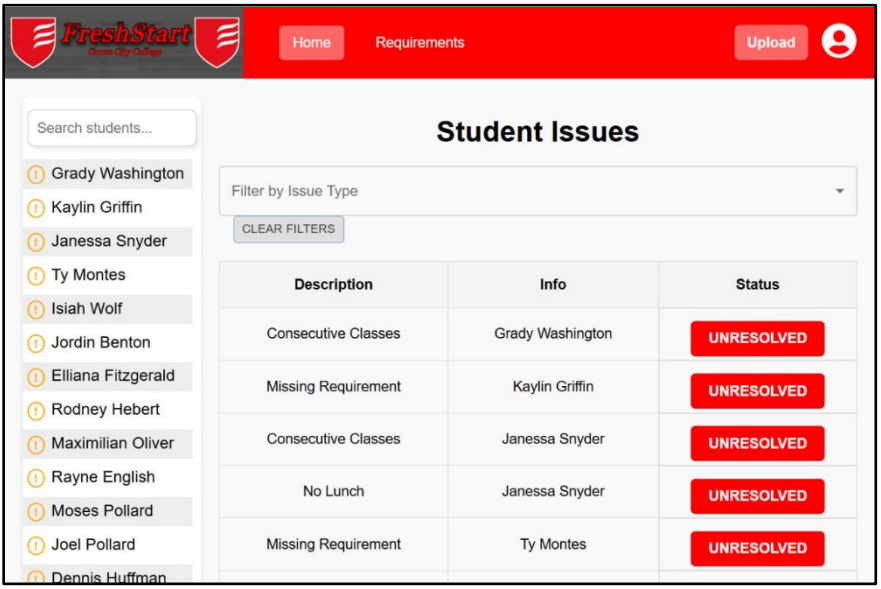
Hannah Bell, Allison Harnly, Joshua Minnich, William Segulin



Orbital Client Hub is a cross-platform mobile app which allows interested executives to quickly see a summary of their company's ongoing projects with Orbital Engineering. Rather than digging through piles of emails from project managers, users can easily see what percentage of their projects are on schedule or under budget. In addition, locating and diagnosing issues are a breeze with in-depth project searching, filtering, and sorting. Push notifications, alerts linked to projects, and the events calendar keep you up to date with all your Orbital needs!

Christian Abbott, Evelyn Hutchins, Abigail Kiser, Nathanael Kuhns

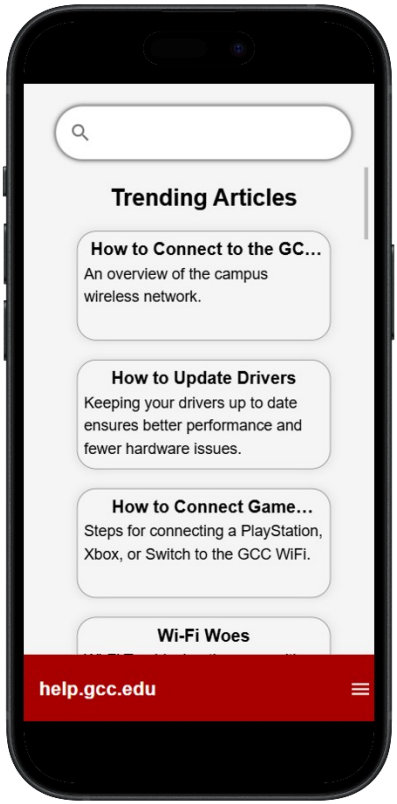
Client: Orbital Engineering



FreshStart is a web-based application designed to assist faculty advisors at Grove City College in reviewing and verifying incoming freshmen course schedules. FreshStart automatically analyzes each student's schedule to identify common issues such as missing prerequisites, unbalanced workloads, or unmet core requirements. Advisors can then review suggested solutions, make adjustments, and communicate directly with students via email through the platform. This streamlines the advising process and helps ensure students are on the right academic path from day one.

Jaden Davinsizer, Andrew Foerst, Dylan Weaver, Gavin White

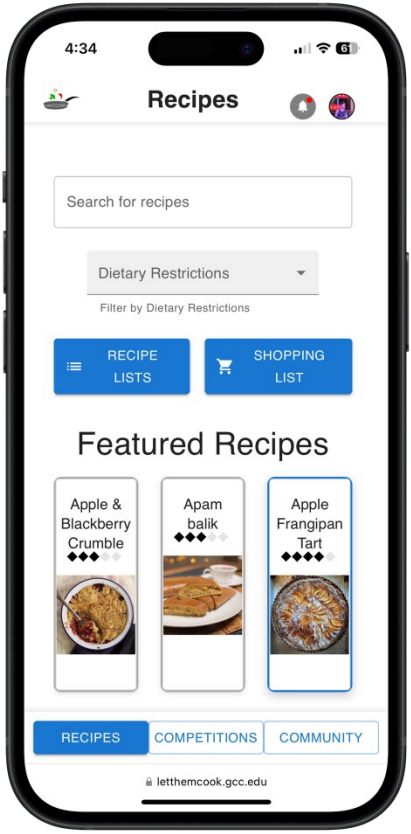
Client: Grove City College



Help.gcc.edu is a web app designed to help Grove City students find answers to their tech problems without needing to visit the campus Helpdesk in person. Students can search for articles, view popular articles, or browse articles based on categories such as "Wi-Fi" or "Bluetooth." Students can also leave feedback on articles, marking them as either helpful or unhelpful. Administrators can see a summary of feedback and recent search trends, allowing them to improve the articles and see the most commonly requested topics.

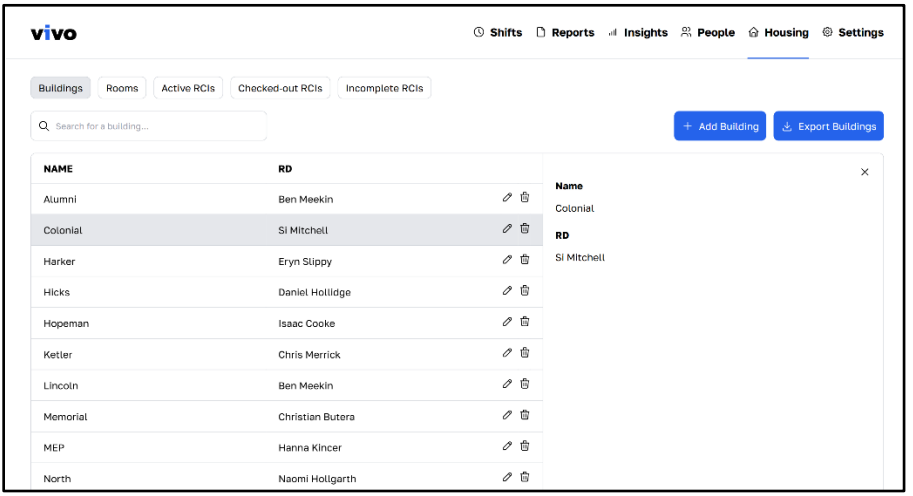
Nathan Cacioppo, David Le Roux, Hayden Wehrman, Alexander Zeilstra

Client: ITS at Grove City College



LetThemCook is a mobile-first web app designed to encourage college students to learn how to cook in a gamified and social manner. As users complete recipes, they will level up and earn achievements. Users can also join competitions and groups to compete with and cook with their friends.

Kate Bibighaus, David Koslowsky, Jeffrey Krug,
Andrew Marston, Jackson Southern



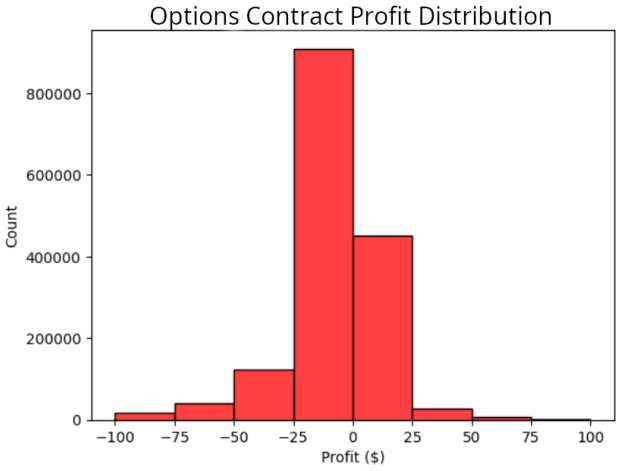
Vivo is a web application built to streamline and centralize Residence Life operations. It allows Resident Assistants to quickly submit reports to their supervisors, who can easily review them in one unified platform. Actionable insights are derived from submitted reports to enhance the overall Residence Life experience. Vivo also replaces the current pen-and-paper dormitory check-in process with a digital solution, automating work orders and keeping a record of the condition of each dorm room.

Jackson Crawford, Liam Grossman, Austin Hensley, Ethan Kesterholt

Client: Residence Life at Grove City College

Data Science Projects

Data science students work in pairs on a semester-long project, using data to build a predictive model to solve a problem of interest.



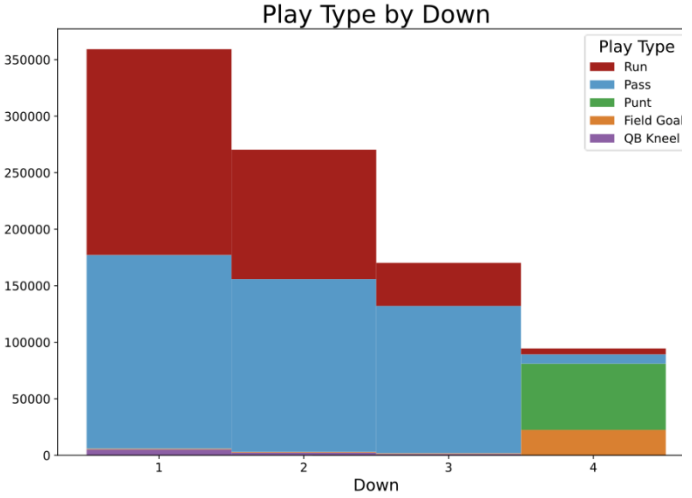
Options Contracts: Picking Winners

The goal of this project is to train a machine learning model to use technical analysis indicators of options contracts to predict which contracts are most likely to cover their spread and be profitable. The project makes use of historical pricing data released for non-commercial use.

Calvin Boss and Andrew Stine

Clustering and Predicting Media Based on Paratext Language
This project seeks to predict the genres of several media types based on their text or metatext. Books and movies are classified based on the most predictive words found in their descriptions while music is clustered based on the lyrics themselves. This shows some expected and some surprising patterns in word choice between genres.

Liam Grossman and Clancey Herring



NFL Play Prediction
This project aims to accurately predict what type of play an offense will run on its next snap based on game situation and personnel. The results may be of interest to any NFL football fan interested in better understanding which metrics are most predictive.

Austin Hensley and Stevie Michalik

Outstanding Computer Science Senior Award

In recognition of a graduating senior's academic achievements and service to the department and community

Nathan Striebel will graduate with honors, earning a Bachelor of Science in Computer Science and a minor in Physics. In his time at Grove City, Nathan ran three years of varsity cross country and two years of track. Each spring break, he served on a Rural Ministry team through the ICO program, and acted as team leader this past spring. Nathan also spent 5 semesters serving as a tutor and TA for the physics department. He has spent his summers working as a camp counselor and handyman at a Christian sports camp in Pennsylvania's Laurel Highlands. Over the past year, Nathan's senior capstone team has developed a spray simulator for AutoJet automated spray control system. The simulator will help sales representatives design, evaluate, and refine custom spraying systems. After graduation, Nathan will be working with the Summer Institute of Language to develop Bible translation software for missionaries to unreached people groups.

Project Videos!

https://bit.ly/gcc2025cs