Apple Scholarship 2023

## Features and Technologies

Tells us about the features and technologies you used. (350 words or less) 478 rn

I’ve always found the Swift Student Challenge to be the best opportunity to challenge myself to make something new, to explore something I hadn’t done before, and to learn what’s new. It is also a wonderful occasion to learn concepts within programming and beyond, so as I found myself learning and relearning various ideas in preparation for the challenge, I found it only fitting to make something that encompasses learning itself: a school app!

As has become my tradition, for this year’s SSC I used a new and different framework to bring my imagination to life. After SpriteKit for 2D simulations in 2021 and SceneKit for 3D simulations in 2022, it was now time for my creativity to take the stage with a world of beautiful, interactive apps in SwiftUI.

I didn’t have too much experience working with large amounts of JSON data before, especially not with SwiftUI, but the framework helped me effortlessly build beautiful but complex pages veiled by an aura of simplicity and intuitiveness both for me, the programmer, and the end user. I particularly enjoyed the process of dynamically generating pages from the input data, which helped create customisable interfaces and layouts with minimal code repetition, allowing for a robust system that feels incredibly expansible and limitless. The lightweight minimalistic syntax, modularity and updates to Swift Playgrounds also sparked that wonderful excitement of rapid development where ideas just flow onto the screen. I found the development process to be delightful, enabling my creativity to flow beyond the core functionality: I expected my nitpicking about the *feeling* of the drag and drop game experience to meet no avail, but was delighted to find that this level of precision was far from the limit of SwiftUI’s capabilities.

This leads me well into my exploration into the Core Transferable and Uniform Type Identifiers frameworks. The Transferable API was one of the many new announcements at WWDC22 that caught my eye, because it allows for the moments of serendipity when things “just work”. While learning more about it, I found the protocol not only enabled the seamless transfer of data across apps, but also within SwiftUI views inside the same app, making drag and drop easier than ever with a wonderful native feel. My word game resources for each subject utilised views that contained custom card types made with UTI that conform to the Codable protocol, which Transferable could easily pickup and transfer to another view, the answer field, just like any other data! Simply put, the newly announced features of SwiftUI streamlined the development process, allowing me to put my ideas on the screen without limits, creating things I didn’t know were possible, and I loved the experience!

All in all, the Swift Student Challenge this year was yet another wonderful opportunity to learn, build, create and share, and I’m incredibly proud of the journey that got me here.

## Beyond WWDC23 (opt.)

If you've shared or considered sharing your coding knowledge and enthusiasm for computer science with others, let us know. (350 words or less) 453 rn

Learning is an essential part of our lives. We constantly grow, we constantly improve, and it is a fundamental part of a programmer’s job: learning with and from others. I love programming because it enables me to understand how this technological world around me works, and by sharing this with those surrounding me, we can work together to solve problems and make our lives easier.

In my case, I run our school’s maths club, which has become an unofficial hub for the programming community on campus, where we frequently share and discuss our programming endeavours together. Last year I created an official app for this community, and having had experience with various programming technologies and languages over my time, many come to me for advice and help to better understand the otherwise mystical world of computer science. I’m no expert for sure, but I love helping out, and have recently started holding workshops with peers doing VCE Software Development, a subject that I completed two years early so I can offer some guidance.

Another way to connect with my fellow developers around the world is through social media, and you can frequently find me on online communities sharing my passion for the subject. I’ve started various Discord servers on topics from Algorithmics and Software Development to Self Hosting and Server Architecture. Contributing to open source software has also led me into many wonderful communities of likeminded individuals working on the same projects as I am as well, being a frequenter of Flutter open source community with various packages of my own and the Minecraft modding scene. The WWDCScholar’s server is also one of these amazing communities where the experience of the SSC can do wonders to bring people together, and I know I have made some life-long friends through my passion of computer science.

Random projects are also a pretty good way of making friends in my experience. Last year, I made a small API to interface with my school’s timetabling system, allowing me to create a calendar integration that was useful for my needs. Some students at my school ended up finding the project and before I knew it, multiple apps by many different people had sprung up, using my API as the foundation for an ecosystem of apps that work with my school’s systems. It was heartwarming to see my work bring together so many people, enabling them to fix the problems that we faced every day, while making many new connections.

OR (idk which paragraph is better 😭 ) might put it into the extra comments

Finally, last but not least, my friends and family may very well be the ones to face the brunt of my burning passion for programming. Indeed, they are the ones that listen to me rambling on about my new favourite technologies for hours on end, helping me imagine new ideas, pushing me to dabble in new concepts, and are always the first to provide me their opinions and what I design and build. Over the years, my love for programming has been spread to many of my friends, and I’ve successfully indoctrinated them all to start playing with programming languages and build to their heart’s extent, always eager to make something new.

Overall, I love sharing my experience and enthusiasm with everyone who is willing to listen, and my love of learning and sharing what I’ve learnt with others will never stop evolving with the world around me.

## \***\*Apps on the App Store (opt.)\*\***

If you have one or more apps on the App Store created entirely by you as an individual, tell us about them. This won‘t influence the judging process. (350 words or less) 469 rn

I currently have 5 apps that I designed and created that I have built and published on the App Store, a progression over the last two years which I am incredibly proud of, and there is no better feeling than getting my creation in the hands of thousands.

I built and published my first app in November of 2021, just after having turned 15. It was my first shot at making a full production app, and I had just gotten my first MacBook at the start of the year so the opportunities felt limitless! It was called “The Nova System” and it aimed to help teach my peers about the workings, dangers and benefits of cryptocurrencies through a simulated exchange, which I used across my school to hold workshops about the “new, mysterious” technology. Programming the app completely from scratch was a genuine challenge, especially when new bugs were being found left right and centre, but it was all the more rewarding to see people across my school enjoying the app and user experience.

My second app, a solution for my school’s Maths Club, was brought to the app Store in July of last year. While running the club, I found that it was increasingly difficult to make these fun maths problems accessible to everyone in a world filled with online learning and busy commitments. We were printing a lot of problem-sets only for less people to show up, creating a lot of waste in the process, and I thought it would be a great idea to expand this community into the online space. This system allowed for the creation of questions to be easier and more streamlined than ever, especially important as the year gets busier and we have less time to make them, with an exciting gamified quiz environment to see who could top the leaderboards!

Two of my current apps are systems that I created as a freelance developer for clients, which has been a wonderful opportunity that I have found through my software development career. The first is an enterprise logistics solution for a transportation company called “NP Logistics”, which has been in operational business use by them since the start of the year, and other is an app called “Verdis Communications”, where I was contracted to create a custom chat app along with a communications platform, both of which were created in Flutter for their cross-platform needs!

Finally, my 5th app was my SSC submission from last year, which my teacher ended up using to teach Newton’s Law of Universal Gravitation to the class, a moment I was very proud of. Needless to say, I love creating, and these apps simply represent the start of a great journey of problem solving. Who knows, maybe this year’s submission will transform into my next new app!

## Comments (opt.)

Is there anything else you‘d like us to know? (350 words or less)