

## Fields Report

Dear Parents,

As I mentioned, I decided to pursue a degree in Software Engineering and wanted to provide you with a brief overview of some aspects of Computer Science and its related fields.

Computer Science focuses on the theory of computation and strongly relies on fields such as mathematics and logic, which are my strengths. Computer Scientists help create new programming languages, as well as complex algorithms and data structures that form the building blocks that are used to create programs. A Computer Scientist might try to create a new and efficient sorting or searching algorithm. Software Engineers, on the other hand, are more concerned with creating effective programs that work efficiently. As a Software Engineer, I will use these building blocks created by Computer Scientists to create programs that solve real-world problems or needs and apply engineering principles to turn the idea into a reality. Most students of Computer Science will ultimately become Software Engineers and concern themselves with writing programs for users rather than focusing on the underlying theory. Unlike Computer Science and Software Engineering, Information Technology is a lot less focused on actually writing code, which you know, I love writing code. Instead, IT professionals are more concerned with the “big picture” and making sure that a company’s business needs are met regarding technology. An IT professional could also be tasked with deploying and maintaining operating systems, programs, databases and networks of businesses.

A particularly interesting field in Computer Science is Data Structures and Algorithms. I don’t want to make this too confusing but two important concepts in this field are Time and Space Complexity. It’s the Computer Scientists goal to reduce the amount of time and space required to execute the algorithm as much as possible, while still completing the desired task. Developing a new or improved algorithm can have a huge impact on the computer science community as other programmers might be able to use it in order to optimize their own programs. Another important field of Computer Science is Databases. Virtually every service we use has some sort of database at its backend that stores information about the user in order to improve the user’s experience. Developing different types of databases, or tools that make it easier for programmers to interact with a database can provide other programmers the option to choose the database that best suits their needs and ultimately save time and money. A highly popular field of Computer Science, that is also well known outside of the Computer Science community, is Artificial Intelligence, which is quite cool. The goal of this particular field is to create processes that have the ability to learn and solve problems independently. Advances in AI can have a strong impact on fields such as Robotics.

The field of Computer Science that I find the most interesting is the field of Artificial Intelligence. As you know, I’ve been working on Android applications for over 2 years and one of my goals is

to create or work on a mobile application that uses AI. Creating an application that can learn from and engage with its user would be a fantastic experience for me. I've also always been fascinated by robots and AI plays a key role in robotics. If I ever move away from mobile development I think I would like to work in robotics as an AI Software Engineer. Robots are becoming increasingly more common and sophisticated and I believe it would be a great experience working with them.

I hope this was informative!

Best wishes,

Alex

## **Report Report**

### **Writing:**

My approach for tackling the Field Report started with the making of an outline, as a clear outline would allow me to categorize the different components of the report and ultimately make the writing process significantly easier. In my outline, I decided that I would have three different paragraphs, one paragraph for each other bullet points that we were required to address. To further enhance my writing process I used Grammarly to make sure my spelling and grammar are correct.

### **Critical Thinking:**

The first bit of this report that required critical thinking was choosing whether to address the report to my parents or a potential employer. Initially, I thought I would address it to an employer because it would be similar to writing a cover letter for a job application. However, upon further reflection, I found that it made more sense to address this report towards my parents. The reasoning for this was that this report has to be very brief while touching a wide range of ideas. An employer would be more impressed with a demonstration of detailed knowledge, whereas a parent without prior knowledge might find the report useful and informative.

### **Information Literacy:**

To make sure that the information that I used for my report is qualified, I made use of sources from the FGCU library website, as well as websites that were associated with other universities. One source that I bumped into that I found particularly interesting was a book available on through the FGCU bookstore by Alan Garnham, titled "Artificial Intelligence: An Introduction". The book is easy to read and provides a great introduction to the field of AI.