Sanath's Career Journey

My passion towards computer science started when I was building a website as part of an assignment in Year 12. Even though I had average grades in all the science subjects, my computer science marks were always impressive to me. Working on school assignments or any personal projects I started noticing that I was spending a great amount of time working under the hood to make sure the application worked correctly. This made me realise that unconsciously I was curious about in-dept working of programming languages such as JavaScript, HTML, CSS, and C++. Also the efficiency of learning one object oriented programming language made it to understand and learn others.

With this curiosity and advice from elders, I felt that computer science would be a booming topic in coming years. Well looking back at that though in 2024 I feel computer science is not only booming but getting out of hands. Getting admitted in to one of the prestigious universities in India which is Christ University, I felt really grateful for this opportunity. At the beginning of my Bachelor's of Engineering course with a computer science major I felt really enthusiastic as I was learning what I loved. Concepts in Engineering Maths were pretty challenging but I always gave extra effort to learn about the application in which we can implement these mathematical techniques and theorems. Doing a major in computer science I was thought the theoretical subject such as Database Management, Software Engineering, Data Structures and Algorithm, Internet of Things and other various subjects which improved my problem solving skills. The theoretical knowledge gave me a boot in building robust applications and provide a strong foundational code to the applications.

In my third year of Engineering I published a research paper titled "Secure Bitcoin Transaction and IoT device usage in Decentralized Application." [Learn more about my research here: https://ieeexplore.ieee.org/abstract/document/8724077]. With the help of my professor I was able to complete my research and put all my thoughts in a paper. Based on the research I also was able to develop a working prototype for my final year bachelor's project which was worth 50 credits. In this project I developed a smart door lock system which used blockchain technology as a security feature to handle malicious activities. During this process I learnt a lot about doing a market study or reviewing past research papers and the writing skills required to put my thoughts in a paper. Documentation is an important skill which is required for a software developer or a software engineer or any other technical career fields.

Apart from university's assignments and projects I was involved in learning latest cutting edge technologies and tools such as Laravel Framework, Django Framework, MongoDB, ReactJS Library and various other web development tools and framework. I was always wanted to create something cool using the new tools. This curiosity of exploring latest tools and languages still remains in me. One such project I build which I am proud of today is smart stick for blind people, I used my IoT and software development skills to build a tool which helps blind people to navigate in public places such as a railway station, airport and bus stations.

After graduating my bachelor's degree with a GPA of 8.09 out of 10. I started working as a volunteer Data Analyst at one of the non government organisation to help rural communities to sustainable electricity and water. I was working on various geospatial data provided by the government. I used various data cleaning and pre-processing techniques on a geospatial dataset to analyze renewable energy resources used in India's rural areas and designed a map utilizing Map box tool and JavaScript for visualizing the analysis. I worked on the following at BR & UD Trust (Non Government Organisation):

- Used various data cleaning and pre-processing techniques on a geospatial dataset to analyze renewable energy resources used in India's rural areas and designed a map utilizing Map box tool and JavaScript for visualizing the analysis.
- Reduced dimensionality of Geo-Spatial dataset to perform better visualizations of data.
- *Programming Languages and Tools used: Tableau, Map Box, Python, JavaScript.*

After receiving a offer letter with a scholarship from University of Melbourne, I decided to study in Australia and improve my knowledge in computer science. I think a masters was necessary for me explore my interest in computer science in a broader perspective.

During my Masters of Computer science degree in University of Melbourne, I took up subjects such as software testing, web security, advanced database management, distributed computing, machine learning and others. I really enjoyed learning web security, software testing and distributed computing subjects as it

gave me broader knowledge and make my decision making skills better when writing clean code by using best practices. I completed my masters degree by doing a research on Detection of Deepfake video and its effect on social media platforms. I received an overall VAM of 74 which is an equal GPA of 8.5 out 10.

After my Masters, I was very grateful to have joined a start-up in Melbourne called Blue Square Tech Solutions. Working as a software developer I learnt a lot from my team lead and other colleagues. I faced a reality check that how problems and challenge differ when working on an assignment and working in a start-up company is. Amazed by pace of learning in an start-up industry I quickly picked up the pace to learn new cloud technologies and other devOps software tools to handle requirements of various clients. I worked on the following.

- Fixed Bugs and built various front-end components in a Scrum environment for the company website.
- Created a secured room booking platform for a client using WordPress and an existing plugin. Also modified the plugin to fulfill the client's requirements by writing PHP scripts.
- *Languages and tools used: JavaScript, NextJS framework, WordPress, MongoDB.*

I also learnt more about client handling and how a system development life cycle works. Having gained a great knowledge of on how a services based technological industry works.

In the same year I moved on to work as a Graduate software engineer in one the prestigious consulting firm in Australia called AMOG consulting. I was working with a small team and contributing to the development of two different existing projects in the firm. The tasks assigned was quite challenging, as I was involved in learning out of my comfort zone. The follwing or a details on what I worked on during my time at AMOG Consulting.

- Worked on enhancing and developing new functionalities for a Smart Mooring Integrity Checker web application using ReactJS framework (Front-End) and Flask Framework (Back-End), following SDLC (Software Development Life Cycle) process.
- Created multiple React components to visualize raw data and pre-processed data (Oceanic data). Also created Flask-RESTful APIs at the backend to connect to Postgre SQL database tables in the server.
- Improved the dashboard visualization and end-user performance by using various ReactJS and Flask functionalities.
- Integrated Azure Active Directory with the application and created a Single Sign On feature that helped potential clients interact with the application securely.
- Identified critical vulnerabilities in the web application by performing Static Application Security Testing and created a vulnerability assessment report. Improved the path coverage to 100% using multiple analysis tools and writing pre-defined syntax rules.
- Used supervised anomaly detection to identify the failure points on raw sensor data.
- Created python-based unit tests for various Flask API endpoints and 90% code coverage rate.
- Used tools and programming languages such as: Python, JavaScript, Docker, Azure, GitLab, PostGre SQL.
- Developed new features for the company's internal performance management application in a scrum environment using CodeIgniter (PHP) Framework.
- Created a search feature using server-side processing to view a large amount of data from MySQL database tables. Improved the search functionality by using query optimization techniques.
- Created view and edit features for multiple data types from the database tables using dynamic models for an MVC view.

After working with AMOG Consulting for almost an year, I did learn a lot from my seniors. I met the most professional people who taught me the important lessons in balancing life with work and also a lesson on how important it is to work towards my goal rather than thinking about making the right decisions. It is till date the most memorable place I have worked at. Will cherish all the lessons learnt from the mistakes I have made in AMOG Consulting.

In the start of 2023 I moved to my home country India, since it was more than 3 years spending my time in Australia I felt really great to move back and visit my family. Taking a 2 months of career break I worked on myself by developing my coding skills in c++ and data structures and algorithms by solving leetcode problems and trying to compete in coding competitions.

Since it was getting harder to find jobs due to less opportunities and high competitiveness in the technology industry I ended up working as a freelance software developer. I acquired two clients in the hospitality sector and was building a full stack applications for both the clients using all the tools I had learnt. However, I saw

an opportunity to expand my work towards working on non technical operations in the business of my clients. Hence, with the expertise of a business graduate who is my sibling, we both opened a firm called Swamy&Co to help small businesses to improve their operations more robust and scalable in a nature.

After an year, realising that I need to gain more experiencing and due to various other reasons here I am finding myself to fit in this unpredictable job market. Yes, I am open for work now. Will be available to join as soon as possible. Please do let me know if you think I am a good fit at your organisation please send me an email at sanathkumar5671@gmail.com or call my phone Number +61 432062190.