UNIVERSITY OF WESTMINSTER

Trends in Computer Science

(2024) 4COSC008C.3

Portfolio Report

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Group Number: 5

1.0 Employability and career planning- Reflective writing

When it comes to the IT industry, there are many sub-categories where people, including me, could work. Cybersecurity, Software engineering, Data Science, and Artificial Intelligence are the widest sectors that we could find under the IT industry. So, due to the higher amount of job varieties, this industry will have a very exponential growth rate in the near future(Beardsell and Henderson, 2016).

As for my future career, I would be deep diving into the AI and Data Science sector. So I would mainly be focusing on two jobs, which are data engineers and machine learning engineers. In my point of view, the use of AI-integrated systems is increasing day by day. Starting from our daily useful software to advanced healthcare systems, which are all AI-integrated(Hamet and Tremblay, 2017). The main role of a data engineer is to design, build, and maintain huge-scale data systems. Actually, one of my core dreams is to start as a junior data engineer and to proceed to a Chief Data Officer level. The key responsibilities that I would be aligned with include data pipeline management, data warehousing, and database management. When it comes to machine learning engineering, it is the concept of designing models that enable software systems to learn from data. The main goal is to produce a system that could make decisions and think on its own, depending on the data fed. So many applications use machine learning; the most famous one is Netflix, which uses past user history to provide suggestions(Steck, 2021). If I become a machine learning engineer, the key responsibilities that I would have are model development, data Processing, and model evaluation.

Coming to the end of my level 4 year, I have decided to choose (machine learning and data mining) and (Algorithm theory design and implementation) as the two optional modules, which would specialize me in the AI sector as an undergraduate. The programming language that I will most likely be learning in data science and machine learning would be Python. So by learning this module, I would get a pure understanding of regression, decision trees, and neural networks. This module is not only about machine learning but also about data mining, where we learn how to discover patterns, trends, and relationships in a data set. Moving on to the Algorithm theory design and implementation module, I would learn about different types of algorithms, mainly in searching and sorting. This module would mainly increase my critical thinking skills. I would be able to predict and compare algorithms. Also, by learning this module, I could start designing algorithms. I will be mostly focusing on binary search algorithms in this module. Not only about algorithms, I would gain a deep knowledge of how software systems work in depth in this module. One of the main targets that I have, other than specializing in data science and machine learning, is to integrate or make an AI-based project for my final year project, so that's one of the reasons why I chose these two modules as my second year and my final year optional modules.

There are mainly two events that I participated in and volunteered from which I learned some important key points about this industry. Cutting Edge 2025, organized by IIT, was one of the major events that I participated in. There were around 100 projects to visit. These projects were specialized into different sectors such as AI, IOT, Cybersecurity, and mobile applications. These projects gave us a deep understanding of the industry and how real-world projects are implemented. Also, talking with the

seniors who implemented these projects, we got to know many additional tips. These projects gave us a good idea about what to implement as a project in our final year. I mostly focused on AI-integrated projects, where many were new inventions to the world. As a first-year undergraduate, I had the opportunity to participate in the IEEE Industry Pro organized by the IEEE club. Actually, it was a tech talk where four people from the IT industry from four different sectors came and spoke about the current IT trends and the future job market for each job. We also had a Q and session where we could ask questions and get advice from the people. Actually, we had the chance to get valuable knowledge about the job categories and the interview selection process from them. I got a good idea of how our CVs are filtered and what the weak points are in a common CV, and how to correct them.

Finally, after completing my bachelor's in computer science, I would like to join a software company as a junior data engineer or a machine learning engineer to take some experience. Most probably, I would do my masters in Artificial Intelligence, specializing in machine learning.

2.0 CV

Mesandu Gunarwardhana

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PROFILE

Motivated Computer Science undergraduate at IIT with hands-on experience in full-stack development. Proficient in Java, JavaScript, React Native, React.js, Node.js, Express.js, MongoDB, and MySQL. Well-versed in core computer science concepts, including Algorithms, Data Structures, and Object-Oriented Programming (OOP). Passionate about building user-focused solutions and eager to contribute to impactful projects through an internship opportunity.

EDUCATION

- BSc (Hons) Computer Science, **University of Westminster, UK (IIT)** 2025 – 2028
- Advanced Level, **Lyceum International School, Panadura**
- Ordinary Level, **Lyceum International School, Panadura**

PROJECTS

Portfolio Website

Currently developing a personal portfolio website to showcase my projects, technical skills, and achievements. The site will also include a downloadable version of my CV. Tech Stack: **React.js, HTML, CSS**

Aquatic Advocates

Developed a website for UN17 goals under the topic "Life Below Water". Role: Content page, profile page, and Sitemap page

Tech Stack: **HTML, CSS, SVG**

Pass Key

Built password and email saver, where the user can save, add, update, delete, and search for passwords and emails. This application is secured by a password and a username. Tech Stack: **Python, Tkinter GUI**

GitHub Repository: https://github.com/Mesandu2007/Pass-Key

Task Management System

Developed a Task Management System as a part of my university coursework where the user could add, update, and delete tasks from the Python IDLE, and the tasks could be searched, viewed, and could be sorted according to priority.

Tech Stack: **Python, Tkinter GUI**

GitHub Repository: https://github.com/Mesandu2007/Task-Management-System

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TECHNICAL SKILLS

- Front-End Technologies: **React, HTML5, and CSS3**
- Back-End Technologies: **Node.Js, Express.Js**
- Development Languages: **Python, Java, and JavaScript**
- Database Technologies: **MySQL, MongoDB**

SOFT SKILLS

- Able to communicate effectively with other
- Able to lead a team and work well in a team
- Could think outside the box to produce efficient solutions
- Time manager and deadline-oriented worker

VOLUNTEERING ACTIVITIES

IIT Cutting Edge(2025)-Project Showcase and Event Handling Volunteer

IET Summer School(AI and programming sessions)- Technical Support Volunteer

IEEE RAAS Tracktion(2025)-Logistics Volunteer

IET Ciphertext(Hackathon)-Invigilator and Technical Support Volunteer

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REFEREES

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