

**UNIVERSITY OF
WESTMINSTER** 



**INFORMATICS
INSTITUTE OF
TECHNOLOGY**

Informatic Institute of Technology
Trends in Computer Science
4COSC008C.1

Coursework II - Portfolio

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1. Employability and career planning

Thinking about my progress both within the school of Computer Science and through outside the realm of Computer Science I cannot ignore the fact that future of my career is totally in the current trends of Computer Science field. The uniqueness of a technological sphere, with its quick innovations and changing expectations, makes it vital to find a strategic way of career investigations. In the course of my journey through these plains, I have clearly started attracting certain specialisms, taking a look at the relevant academic modules, and most importantly gaining useful insights from employability-related events.

With the growing amount of data and the artificial intelligence (AI) and machine learning (ML) that continue developing, my curiosity was sparked. I am motivated by data science and AI as part of my potential career paths, because I can see they are becoming more and more a massive shift across various fields. These fields guarantee not only mental satisfaction but also a great scope of prospects in those high-tech and data-driven business environments. It is truly fascinating for me to conceive the idea of understanding data and using it as a tool to untangle tough problems or innovate, an aspiration which aligns perfectly with my aptitude for analytical thinking.

I am looking forward to venture into advanced modules covering a range of features such as programming, data analysis, and latest AI technology topics that will smoothen my path to entry into this field. Self-contained learning module level 5, " Machine learning and Data Mining ", participants study algorithms and techniques to acquire information from data as a base for the development of predictive models and data-oriented solutions. At level 6, the target is to take part in " Data Visualization and Dashboarding " module within AI and Data Science in order to get the skills to utilize data visualization and dashboards to produce a full picture and be able to make wise decisions. I thought that these module were vital witnesses in pursuit of the career goals.

I can definitely highlight the fact that the most important thing that has shaped my characteristics professionally is the fact that I was part of the employability initiatives. I was exceedingly amazed by the way technology is implicated for real world cases and grasped most of the applications on data science during the "Data Science, reshaping the future" workshop in 2021. Evidently, having a chance to consult with the data science and AI professionals not only was a highly interesting and inspiring talk for me, but, certainly, widened my horizons as well. The useful workshop had increased my knowledge of the roles collaborating in data-

science discipline, also, about what is required by the industry to practice. They were the drivers behind me feeling confident that I should be always moving on, being flexible, and getting over my fears in this work field.

Consistent with the ever-changing and fast-paced nature of the business world, I plan to utilize a multi-dimensional approach to prepare against my future career. This involves finding an internship to get a practical skills testing, competing in coding contests to enhance problem solving and attending tech communities to keep up-to-date on the industry trends. Besides, my next step includes working on projects that link together AI principles, data science, and real-life problems with the vision of creating a portfolio that highlights my experience and creativity. Making up my mind about the major field, subjects that I will choose and my involvement in the employability events have proven to be of paramount importance in determining my future profession. Nevertheless, I am aware of the fact that it may take a long period of time and a sound of approach development to my desires. The fast changing nature of the tech sector is a constant reminder that I have a long way to go as a student, putting hard work and becoming inventive as I develop.

In the final analysis, I, as a Level 4 student in the computer science department, I am creating my career path through putting up strategic plans. My new career direction emphasizes on the area of data science & AI. And I'm considering the academic modules and the employability events to develop my knowledge and skills. While a college graduate, I'm going to cover up these gaps by involving in internships, coding contests, and other such activities that may help me to learn about new technological trends in my field. Being able to execute projects that are within the AI and data science domain and applying these principles to solve problems in real life is the focus of my objective. This way I believe my portfolio would demonstrate my relevant skills. As I steadily make my way forward, I will aim for flexibility and unceasing self-development, to be guided by the challenges though which come as I walk on the path of an ever changing field.

1.1. References

1. www.westminster.ac.uk. (n.d.). Careers and Employability Service | University of Westminster, London. [online] Available at: <https://www.westminster.ac.uk/current-students/support-and-services/careers-and-employability-service>.

2. Cyber Security

2.1. Introduction

Cyber security comes to the fore as a vital defense weapon in today's digital world where global enemy cyber threats are entering computers every day. This report intends to cover the basic requirements and skills to succeed in a career as cyber security expert, analyze prospects for the professionals in such career in Sri Lankan context, and deliberate on the high-demand specialisms in this profession. Certainly, cyber security plays a vital role in making sure the online infrastructures are under well protection from emerging threats is the factor that pushes the demand for technicians with this scope higher (Shinde, 2021).

2.2. Qualifications and Skills for Cyber Security Experts

Cyber security professionals must possess advanced technical skills, including expertise in network security, incident response, penetration testing, encryption algorithms, and secure data transmission and storage techniques. They typically require a bachelor's degree in computer science, information technology, or related fields, with advanced positions requiring a master's degree or certifications. Technical skills include designing, supporting, monitoring, and managing secure network frameworks, responding quickly to security incidents, identifying vulnerabilities, and utilizing encryption algorithms for secure data transmission and storage.

In addition, technical know-how should not be absent, covering a wide range of proficiencies starting with networks, systems and administration and ending with coding competence, especially in Python or Java-type languages. Analytics skills that are imperative also are needed, during which subject matter experts must showcase their aptitude to analyze data from various sources to determine the vulnerable areas and threats. To understand how cyber security is being approached today, cyber security professionals must learn new things in line with the continuously changing nature of cyber threats.

In addition, soft skills like critical thinking, problem solving and good communication are priceless tools for cyber security practitioners to help work with other stakeholders and overcome the complicated security problems (Shinde, 2021).

2.3. Cyber Security Job Opportunities in Sri Lanka

Sri Lanka's cyber sector is experiencing rapid expansion as more and more economy activities shift into the online space. The need for qualified workers is increasing for both governmental

organizations and the private sector, especially in domains like the financial field, the healthcare sector, and communications.

Positions like Security Analysts, Penetration Testers, Cybersecurity Consultants, Information Security Analysts, Cybersecurity Engineers, and Incident Responders hold esteemed places in the industry. Besides this, these days the knowledge in the field of security threats associated with cloud security, IoT security, and blockchain security is very essential to combat these emerging cyber threats. The implementation of organizations like Sri Lanka CERT/CC becomes quite crucial in terms of growing cyber security infrastructure, and thus the requirement of highly qualified individuals is further highlighted (Lanka Secure, 2020).

2.4. Specialisms within Cyber Security

Cyber security specialisms focus on specific issues, such as ethical hacking, computer forensic analysis, and digital forensics. Ethical hacking allows for access to vulnerabilities, enhancing proactive security measures before breaches. Computer forensic analysis aids in cybercrime investigations and escalation of cyber-attacks. Digital forensics accesses online crimes, provides evidence for court, and examines breaches. Cyber security architects build a robust structure to protect digital assets, while governance, risk management, and compliance experts ensure regulations are met and risks are managed. These professionals contribute to organizational strategy by addressing existing risks and safeguarding against future threats due to changing threat nature.

These sorts of specializations are a mission-oriented tasks, and for perceived task of goals in cybersecurity. Ethical hacking does the best job in finding the deficiencies that need addressing to safe the company and make it self-independent and proactively cyber-threats ready. The triumph of digital forensics is a great digital crime investigation assistant with the aim of aiding legal cases and organizational discussions. Security architecture is the design of specific defense mechanisms concerted according the organization systems. In addition, there is governance, risk, and compliance (GRC) specification which is the function to keep compliant with regulations and to manage risks effectively. These experts provide customary plans to the business organizations; therefore, they are beneficial to companies as they are a part of organizational security strategies enhancing trust and reliability in digital space (Lanka Secure, 2020).

2.5. Conclusion

The surge in demand for cyber experts underscores their crucial role in defending cyberspace from evolving threats. With Sri Lanka's landscape in flux, healthcare professionals find promising prospects for employment. Acquiring skills not only charts a fulfilling career path but also holds immense relevance in the contemporary job market. As technology advances, so do the intricacies of cyber threats, making expertise in cybersecurity indispensable. In Sri Lanka, the intersection of healthcare and cybersecurity presents unique opportunities for professionals to contribute meaningfully to both sectors. Whether it's safeguarding patient data or fortifying digital infrastructure, the need for skilled individuals transcends industries. Embracing continuous learning and adaptation is pivotal in navigating the complex landscape of cybersecurity. In essence, the demand for cybersecurity professionals underscores the critical need for proactive measures in protecting sensitive information and ensuring the integrity of digital systems (Lanka Secure, 2020).

2.6. References

1. Shinde, A. (2021). Introduction to Cyber Security: Guide to the World of Cyber Security. Google Books. Notion Press. Available at: https://www.google.lk/books/edition/Introduction_to_Cyber_Security/VLEcEAAAQBAJ?hl=en&gbpv=1&dq=cyber+security&printsec=frontcover.
2. Lanka Secure. (2020). Cybersecurity Workforce Development Roadmap for Sri Lanka. Retrieved from <https://www.lankasecure.lk/images/Docs/CSWF/Cybersecurity-Workforce-Development-Roadmap-for-Sri-Lanka.pdf>

3. CV and Cover letter

Sinethma Kariyawasam,

15/k/19,

Kurunduwattte Road,

Makanda,

Kesbawe

Hiring Manager,

BeGOOD Solutions

Dear Hiring Manager,

I'm writing to BeGOOD Solutions to show interest in the Software Engineer Internship position, which was posted on Rooster Jobs. With a passion for software development and a solid educational background in computer science, I'm thrilled about the chance to join your team and gain knowledge from seasoned industry experts. I recently earned a degree in computer science from the Informatic Institute of Technology, where I also learned the fundamentals of Python, Java Script, and Java. I have improved my knowledge of data structures, object-oriented programming, and algorithm design through studies and side projects. I also have expertise with version control systems like Git, databases, and web development technologies.

I was drawn to BeGOOD Solutions in particular because of your track record of creating cutting-edge software solutions to tackle challenging problems across a range of industries. I'm excited to work with a group that promotes innovation, teamwork, and lifelong learning. With my zeal for software engineering and my technical talents, I am sure that I am a strong candidate for this role.


I took part in a number of group projects at university that entailed creating and deploying software solutions from conception to completion. Along with strengthening my technical skills, these experiences have also helped me become a better communicator and team player. I'm used to working in hurried settings, picking up new skills quickly, and finding effective solutions to issues.

Thank you for considering my application. I am excited about the possibility of joining BeGOOD Solutions and contributing to your mission of delivering high-quality software solutions. I am available for an interview at your earliest convenience and can be reached at 0769789586 or via email at sinethmasavithmi@gmail.com.



Sincerely,

Sinethma Kariyawasam


Software Engineering Internship



BeGOOD Solutions
Colombo

 SAVE 

Apply on Rooster - Jobs

 Internship

BeGOOD Solutions is a multi-disciplinary software company. Our focus is the attention to detail at every stage of the design process. We have come to recognize this as the major building block in our services, consistently providing unique and innovative experiences.

Extras what you'll get:

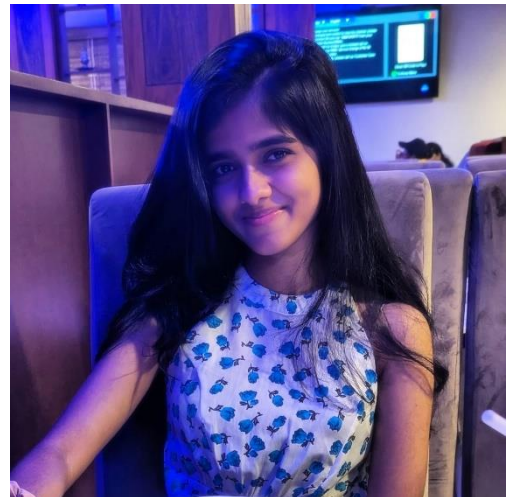
Figure 1 : Job Advert

Sinethma Kariyawasam

Undergraduate – Informatic Institute of Technology

Professional Background

As an undergraduate, I have a strong interest in software development. I'm motivated by my passion for finding complex solutions, and I can't wait to create applications that address pressing issues in society. Not only is programming my passion, but it's also my means of using technology to make significant contributions.



Education

- BSc in Computer Science (Currently in Level 4)
- Foundation Certificate in Higher Education (Merit)
- GCE Ordinary Level Exam

Subject	Result
English	A
ICT	A
Western Music	A
Sinhala	B
Buddhism	B
Science	B
Maths	B
Commerce	B
History	C

Programming Languages

- Java
- Python

- Java Script
- Web Development

Skills

- Content Writing
- Programming
- Documentation

Hobbies

- Programming
- Playing Games
- Watching TV
- Learning new things

Interests

- Programming
- Report Writing

Languages

- English
- Sinhala

Contact

- Address – No. 15/k/19, Kurunduwattte Road, Makanda, Kesbawe
- Email - sinethmasavithmi@gmail.com
- Tel – 076 978 9586

4. GenAI reflection

Generative AI epitomizing products such as ChatGPT is being seen as the precursor of sweeping changes in both education and work environment. These utilities allow for developing alternative modes of studying and teaching, and an opportunity for equalizing the educational disadvantages conditioned into a set of conditions. However, this should be handled with caution.

AI systems that produce an output according could transform education facilities into personal tutors, encouraging self-directed learning, and promoting imagination pursuits. Teachers are not obsolete since they still play a key role in teaching methods but they just help provide innovative and student-centered teaching methods. AI's ability to act as a "Socratic tutor" may be heavily leaned on to help students reach a focused reasoning, and therefore, become an active party in the learning process. Nevertheless, integration will raise the questions regarding an educator's function and the transformation of the traditional teaching methods by A.I. System (Marr, B,2024).

The use of AI tools like ChatGPT in learning experiments has become crucial for generating ideas, writing introductions, and solving complex problems. These tools provide immediate, personalized support, enhancing the learning experience and promoting interactive engagement. However, restoring academic integrity in the era of Generative AI requires sophisticated handling. It is essential to critically approach AI-produced content, credit it appropriately, and integrate it into studies that showcase personal understanding. Educational institutions must prepare for policy considerations to better support students and enhance their performance. The integrity of information obtained from Generative AI will be scrutinized through comparison with established resources (Marr, B,2024).

Ensuring that all people have equal access to Generative AI technologies will play a critical role in preventing the aggravation of inequalities. This combine funding of several programs that put in place not only outcomes but also facilities in disadvantaged places. Moreover, diversity can be an advantage during the development processes and help people become more inclusive and neutral. Beneficial implementation of AI in education should try to enrich the learning environment for every student and give an equal chance to all students, regardless of their origins (library collections-search.westminster.ac.uk, n.d.).

4.1. Conclusion

In conclusion, Generative AI tools allow for the novel strategic line to be implemented in education and professional training, but their implementation should be comprehensive, correct, and equitably used. Through actively participating in these technologies, ensuring the honesty in the academic field, and placing the priority on the inclusivity, we can take the most advantage of the Generative AI in the solving the issues.

4.2. References

1. Marr, B. (2024). Generative AI in Practice: 100+ Amazing Ways Generative Artificial Intelligence is Changing Business and Society. [online] Google Books. John Wiley & Sons. Available at: https://www.google.lk/books/edition/Generative_AI_in_Practice/Bv7yEAAAQBAJ?hl=en&gbp v=0 [Accessed 11 Apr. 2024].
2. library-collections-search.westminster.ac.uk. (n.d.). https://library-collections-search.westminster.ac.uk/discovery/fulldisplay?docid=alma997497843403711&context=L&vid=44WST_INST:WST_VUA&lang=en&search_scope=MyInst_and_CI&adaptor=Local%207520Search%20Engine&tab=ALL&query=any. [online] Available at: https://library-collections-search.westminster.ac.uk/discovery/fulldisplay?docid=alma997497843403711&context=L&vid=44WST_INST:WST_VUA&lang=en&search_scope=MyInst_and_CI&adaptor=Local%207520Search%20Engine&tab=ALL&query=any [Accessed 10 Apr. 2024].