

**Foundation – Smartbridge AI for
Cyber Security with IBM Qradar
Global – Ethnus Mern Full Stack**

A REPORT

submitted by

Pushya Saie Raag Enuga (21BCE5092)

in partial fulfillment for the award

of

B. Tech. Computer Science and Engineering

School of Computer Science and Engineering



VIT[®]
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

April 2024



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School of Computer Science and Engineering

DECLARATION

I hereby declare that the project entitled “**Foundation – Smartbridge AI for Cyber Security with IBM Qradar and Global – Ethnus Mern Full Stack**” submitted by me to the School of Computer Science and Engineering, Vellore Institute of Technology, Chennai Campus, Chennai 600127 in partial fulfilment of the requirements for the award of the degree of **Bachelor of Technology – Computer Science and Engineering** is a record of bonafide work carried out by me. I further declare that the work reported in this report has not been submitted and will not be submitted, either in part or in full, for the award of any other degree or diploma of this institute or of any other institute or university.

Signature

Pushya Saie Raag Enuga (21BCE5092)



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School of Computer Science and Engineering

CERTIFICATE

The project report entitled “**Foundation – Smartbridge AI for Cyber Security with IBM Qradar and Global – Ethnus Mern Full Stack**” is prepared and submitted by **Pushya Saie Raag Enuga (Register No: 21BCE5092)**. It has been found satisfactory in terms of scope, quality and presentation as partial fulfilment of the requirements for the award of the degree of **Bachelor of Technology – Computer Science and Engineering** in Vellore Institute of Technology, Chennai, India.

Examined by : Dr. Ganesh N and Dr. Joshan Athanesious J

Examiner – Dr. Ganesh N

Examiner – Dr. Joshan Athanesious J

Foundation – Smartbridge AI for Cyber Security with IBM Qradar



Externship Certificate

This is to certify that Pushya Saie Raag Enuga has successfully completed the externship program on AI for Cyber Security with IBM Qradar from 21 August 2023 to 21 November 2023 and fulfilled the project work requirements.

Certificate ID: Ext-AICS-2023-73905

December 20, 2023

Issued Date



Jayaprakash. Ch

Program Manager, SmartInternz

Global – Ethnus Mern Full Stack

<Codemithra />™



CERTIFICATE OF INTERNSHIP COMPLETION

This is to certify that

Pushya Saie Raag Enuga

bearing Reg. No. : 21BCE5092 has successfully completed

MERN Full Stack Internship Program

from Aug 2023 to Nov 2023

Dec 8, 2023

Date of Issue

100 Hours

Duration

Badrinath Lingaraju

Badrinath Lingaraju

Chief Executive Officer, Ethnus

Certificate ID: ZHMBXHC5 [Validate at <https://ethnus.com/certverify>]

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LIST OF ABBREVIATIONS

Abbreviation	Expansion
VIT	Vellore Institute of Technology
Smartbridge	EdTech Platform for Young Engineers
SmartInternz	Project based learning and Remote internship platform
Ethnus	Training Organisation to make students Industry Ready.
Cybersecurity	A popular programming language and platform.
MERN	An acronym for a JavaScript stack consisting of MongoDB, Express.js, React, and Node.js.
AI	Artificial Intelligence

ABSTRACT

This report presents a comprehensive review of two industrial courses completed at VIT Chennai: the Smartbridge AI for Cyber Security with IBM Qradar course and the MERN Full Stack course by Ethnus. The courses aimed to provide students with an in-depth understanding of full-stack development using contemporary technologies and frameworks.

The Smartbridge AI for Cyber Security with IBM Qradar course focused on leveraging artificial intelligence techniques to address cybersecurity challenges. Topics such as machine learning algorithms, anomaly detection, and threat intelligence were covered within the context of cybersecurity.

The MERN Full Stack course focused on MongoDB, Express.js, React, and Node.js to build modern web applications.

Throughout this report, the courses are evaluated in terms of course content, teaching methods, instructor expertise, and overall effectiveness. The experiences and key learnings from each course are discussed, highlighting both strengths and areas for improvement. A comparison of the two courses is provided to offer insights into the differences in teaching styles, course structure, and learning outcomes.

Overall, both courses contributed significantly to the understanding of full-stack development and provided practical experience through hands-on projects. This report concludes with reflections on how the courses have enhanced academic and professional skills, as well as recommendations for future improvements.

1 INTRODUCTION

The rapid advancement of technology and the increasing demand for skilled professionals in the field of software development have led to a growing emphasis on hands-on learning and industry-relevant training. As a student pursuing a degree in Computer Science and Engineering at VIT Chennai, I had the opportunity to enroll in two industrial courses designed to enhance my skills in full-stack development.

The first course, Smartbridge AI for Cyber Security with IBM Qradar, provided a comprehensive introduction to leveraging artificial intelligence techniques to address cybersecurity challenges. The course covered machine learning algorithms, anomaly detection, and threat intelligence within the context of cybersecurity.

The second course, MERN Full Stack by Ethnus, focused on a modern JavaScript stack comprising MongoDB, Express.js, React, and Node.js. This course provided in-depth training on creating dynamic, interactive web applications using the latest technologies and frameworks.

The purpose of this report is to provide a thorough review of these courses, examining their structure, content, teaching methods, and overall effectiveness. Through experiences in each course, insights into their strengths and weaknesses, as well as their impact on academic and professional growth, will be offered. Additionally, this report includes a comparison of the two courses and concludes with recommendations for future improvements..

2 Course Descriptions

2.1 Foundation - Smartbridge AI for Cyber Security with IBM Qradar

The Smartbridge AI for Cyber Security with IBM Qradar course laid a strong foundation in leveraging artificial intelligence techniques to address cybersecurity challenges. It provided an in-depth exploration of machine learning algorithms, anomaly detection, and threat intelligence within the cybersecurity context.

The syllabus covered fundamental concepts and techniques essential for understanding and applying AI in cybersecurity. Students learned to analyze and classify security threats using machine learning models, enhancing their ability to detect and respond to cyber attacks effectively.

The course was structured with a combination of theoretical lectures, hands-on labs, and practical exercises. Instructors utilized various teaching methods, including live demonstrations and group discussions, to reinforce learning and foster practical application of AI in cybersecurity scenarios.

2.2 Global - MERN Full Stack by Ethnus

The MERN Full Stack course by Ethnus focused on the MERN stack, a modern JavaScript-based stack consisting of MongoDB, Express.js, React, and Node.js. The syllabus provided comprehensive coverage of each component, starting from an introduction to MongoDB, a NoSQL database, and progressing to Express.js for back-end development.

Students were introduced to React, a widely-used front-end library, for building dynamic user interfaces. The course concluded with an exploration of Node.js, a powerful runtime environment for developing scalable server-side applications.

Emphasizing a project-driven approach, the course encouraged students to apply their knowledge to real-world applications. Teaching methods included hands-on projects, coding challenges, and collaborative assignments to deepen understanding and enhance problem-solving skills.

3 Learning Experience

3.1 Foundation - Smartbridge AI for Cyber Security with IBM Qradar

My experience in the Smartbridge AI for Cyber Security with IBM Qradar course was overall positive. The course provided a strong foundation in leveraging artificial intelligence techniques for addressing cybersecurity challenges. The instructors were knowledgeable and provided clear explanations of complex concepts.

The practical labs and exercises allowed me to apply my learning to real-world scenarios, which was instrumental in solidifying my understanding of the subject matter. However, at times, the pace of the course was challenging, especially when covering advanced topics within a limited timeframe.

Despite these challenges, the course significantly enhanced my understanding of cybersecurity and introduced me to new AI tools and techniques that will be invaluable in my future career.

3.2 Global - MERN Full Stack by Ethnus

The MERN Full Stack course provided a highly interactive and engaging learning experience. It introduced me to the modern JavaScript stack, which is widely used in the industry today. The hands-on projects and coding challenges helped me develop a strong grasp of the technologies involved.

The instructor was experienced and provided valuable insights into industry best practices. Collaborating on projects also improved my teamwork and communication skills. The course's emphasis on practical application was particularly beneficial, as it allowed me to build a portfolio of projects demonstrating my skills.

While the course was well-structured, the experience was enriching and provided me with a comprehensive understanding of the MERN stack.

CONCLUSION

The Foundation - Smartbridge AI for Cyber Security with IBM Qradar and the MERN Full Stack course by Ethnus offered different approaches to full-stack development, each with its own strengths and areas for improvement.

The Smartbridge AI for Cyber Security with IBM Qradar course provided a comprehensive introduction to leveraging artificial intelligence techniques for addressing cybersecurity challenges. It was beneficial for students seeking a strong foundation in AI and its applications in cybersecurity. The course's structure balanced theory with practice, although the pace could be challenging at times and the course content could be dense.

The Ethnus course focused on the MERN stack, offering a modern and practical approach to full-stack development. It was well-suited for students interested in working with the latest JavaScript technologies and building dynamic web applications. The course's project-driven approach fostered hands-on learning.

In terms of teaching methods, both courses offered a mix of lectures, coding exercises, and projects. However, the Ethnus course emphasized collaborative projects, which helped improve teamwork skills.

Overall, both courses contributed to my understanding of full-stack development and equipped me with practical skills for future professional endeavors. Depending on a student's career goals and interests, either course can be a valuable addition to their educational journey. As for me, the MERN Full Stack course is the favorable choice that aligns with my future goals and interests, while also providing me with a better understanding of the subject matter.

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APPENDIX I

Syllabus

Smartbridge AI for Cyber Security with IBM Qradar

1. Cybersecurity Landscape
2. Kali Linux
3. MobaXterm
4. Qradar SIEM
5. AI Companion
6. Prompt Engineering
7. API integration
8. Python

Ethnus MERN Full Stack

1. HTML/HTML5
2. CSS3
3. BootStrap
4. JavaScript
5. MongoDB
6. ExpressJS
7. React
8. NodeJS

Projects -

Smartbridge AI for Cyber Security with IBM Qradar – Daily Cybersecurity Exercises , Quizzes and Projects were given weekly and a Major Project was given at the end of course. There were a total of 10 projects to choose from and each team consisting of upto 4 members could choose one.. Consolidated Performance in all made us eligible for the certificate.

Ethnus Mern Full Stack – Weekly Assignments was given for us to do individually and then a final collaborative project was given which in our case was a project management platform and review of the project made us eligible for the certification.

Certificates -

- Certificates for both the courses are being attached in the report.