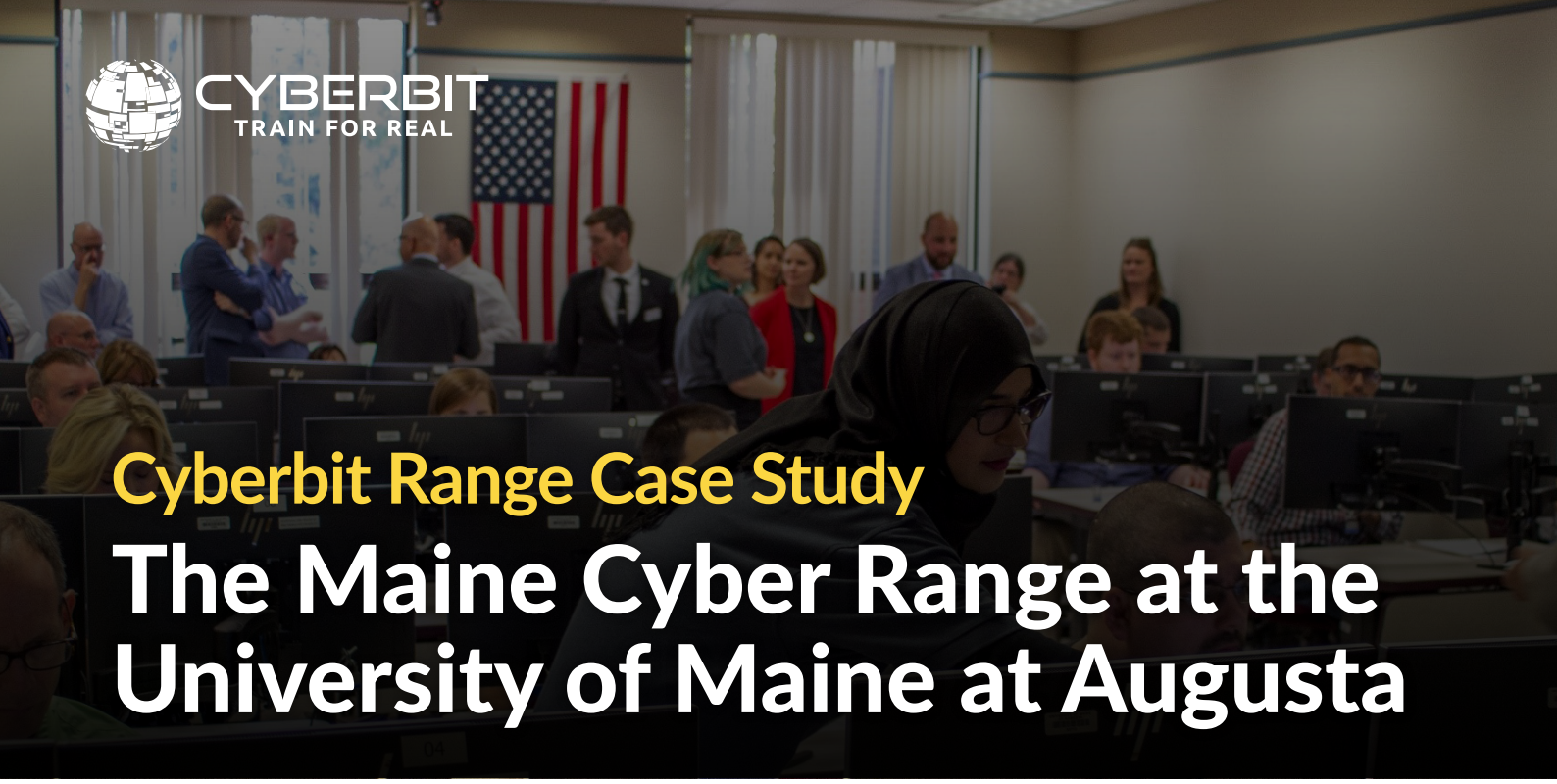


CYBERBIT
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Cyberbit Range Case Study

The Maine Cyber Range at the University of Maine at Augusta

Overview

The University of Maine at Augusta (UMA) partnered with Cyberbit to launch the Maine Cyber Range in 2019, with the mission of enhancing cybersecurity education as well as increasing the number of fully prepared students entering the cybersecurity workforce. This mission extends to educating and supporting all universities within the University of Maine System including colleges and municipalities as well as public and private businesses in Maine and across New England as part of the Maine Cybersecurity Center. The Maine Cyber Range serves an enrolled program of 300 students, attracting students from outside Maine alongside training to industry professionals.

UMA's Motivations for Opening the Maine Cyber Range

1. **Enhance UMA's Academic Cybersecurity Program –** Hands-on experience is essential to effective learning and knowledge retention. UMA decided to embrace the approach of hands-on simulation in order to provide an experience that resembles the ones that students will encounter during their professional career and prepare them to be a successful and contributing member of the workforce from day-one.

2. **Build UMA positioning –** Establish UMA as the local cybersecurity hub while engaging new student prospects and retaining the existing student population.

3. **Address New England Cybersecurity Skill Shortage –** With over 16,000 open cybersecurity positions in New England, UMA intended to increase the number of prepared students entering the cybersecurity workforce and support other colleges and universities in New England.

4. **Train InfoSec Teams Across New England –** Focusing mainly around large organizations, midsize businesses, local, state and federal government agencies, UMA has become the go-to training center to upskill the existing cybersecurity workforce in New England.

Choosing the Cyber Range Approach and Vendor

UMA explored several approaches:

Building a Cyber Lab In-House

This option was rejected for several reasons:

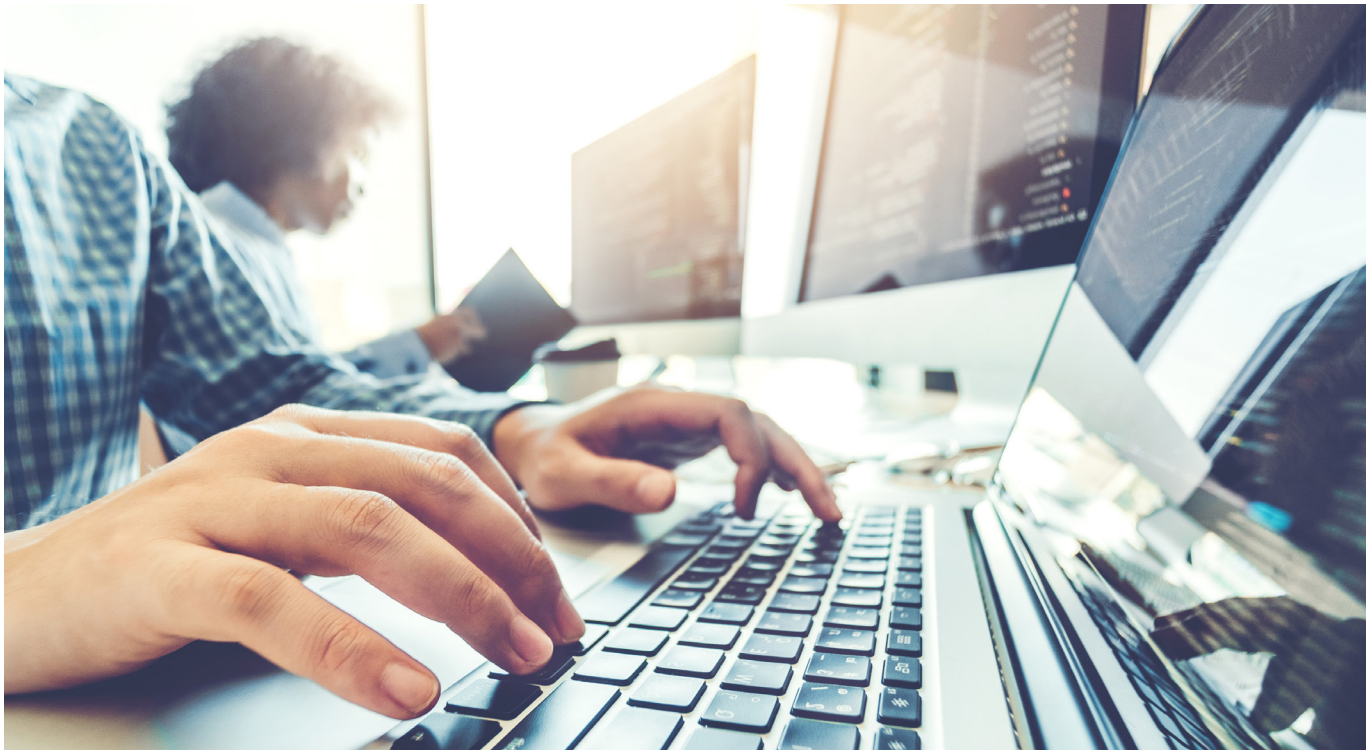
- Not Worth the Investment: Setting up, maintaining and operating a self-built range would be labor intensive and not cost effective.
- Hyper-Realism Difficult to Achieve: Achieving the level of realism and simulation desired would not be possible.
- Lack of Flexibility: Setting up, resetting, and customizing cyber range sessions may take several hours or even days.
- No New Exercises: Creating new exercises in-house would take a very long time and would not produce the desired quality.
- Lack Instructor Feedback Tools: A self-built lab would lack additional capabilities such as student assessment and recording.

3rd Party Gamified Cyber Ranges

Light "gamified" solutions did not provide the desired cyberattack experience that cybersecurity professionals would need. While they offered entry level knowledge by means of hands-on "mini labs" and challenges, they only provided snapshots of an attack and static exercises. The gamified solutions seen by UMA did not provide the complete simulation of a live cyberattack in a virtual SOC, across the entire cyber kill chain, which would allow students and practitioners to experience the complete and intense incident response process. These solutions also did not offer the option to use commercial security tools.

Cyberbit – Live Cyberattack Simulator in a Virtual SOC

UMA chose to pursue the approach of live cyberattack simulation in a virtual SOC, which most closely resembles the work environment in a corporate security operations center. UMA believes that the hyper-realistic approach would prepare learners in the most optimal way for the challenges they will encounter when responding to real-world incidents. Cyberbit provides the optimal learning environment delivering the most realistic, live experience, alongside a wide range of exercises, ranging from entry-level and individual student skill building exercises, to advanced, team-based exercises.





The Maine Cyber Range Today

Transforming the Academic Program

The Maine Cyber Range opened in August 2019 and quickly became a state-wide success story. The Maine Cyber Range provides hyper-realistic training to both UMA students and the rest of the University of Maine System. UMA uses Cyberbit Range to educate its 300 students with hands-on sessions within their B.Sc. courses as well as UMAs recently launched Master of Science Program in Cybersecurity.

The four focus areas of the academic program are Cyber Forensics, Information Assurance, General Focus, and Network Security Analyst Courses. The goal of the program is to produce graduates that are ready to work from day one with hands-on experience and sufficient theoretical background. Cyberbit Range provides UMA with the opportunity to teach classes they were not equipped to teach including courses in Incident Response and Network Forensics.

Industry Training

Cyberbit Range enabled UMA to achieve its goal of becoming a regional cybersecurity hub. The institution has not only created the leading academic cybersecurity program in Maine but has entirely repositioned the institution as the go-to cyber training center in the state, drawing industry leaders from Maine and New England to engage their teams in live cyberattack simulation. Some of the roles trained are IT, Cybersecurity, Law Enforcement, Incident Responders, Continuity of Operations, and Cybersecurity Educators.

Some of the courses, services, and activities offered or in planning are:

- Team Range Training
- Executive Training
- Security Awareness Training
- Security Skills Assessment
- Incident Response Procedure/Playbook Evaluation
- Security Assessment Team Services
- Individual Skill Development
- Red Team Training
- Advanced Cybersecurity Training
- Large Scale Exercises
- Capture the Flag (CTF)

Workforce Development

UMA has engaged with the state to initiate workforce development courses, and cyber operations training to regional vocational technical centers. These include mid-career transitions for individuals in search of a new position in cybersecurity, and personal upskilling courses, aiming to increase the individual's employability.



Maine Cyber Range Session

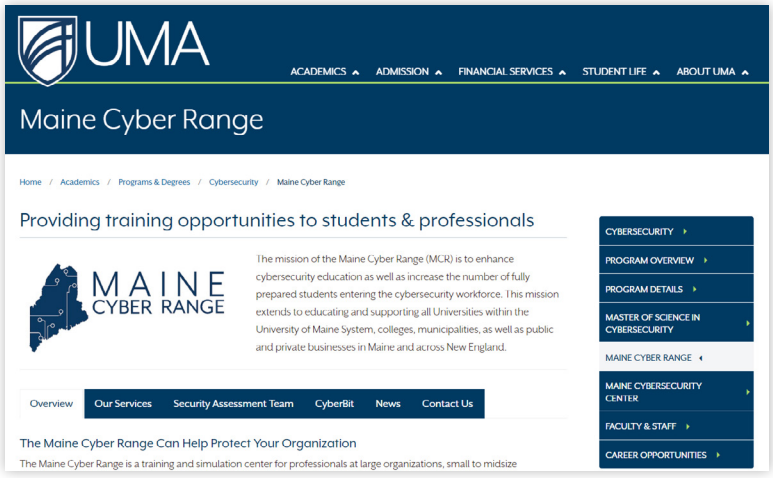
Competitions

UMA runs the Cyber Moose Competitive Cybersecurity Team for students. Team members compete nationwide and work together to improve their knowledge and skills. Team members challenge themselves in defensive and offensive puzzle-based, capture-the-flag style competitions, which are closer to workplace experience over that of formal education by stressing application over theory. Preparation & participation in competitions provide real-world scenarios that will be helpful in becoming well-trained experts and improving individual skills sets.

Cyberbit and UMA are now planning SOCathon events, a Cyberbit proprietary marketing event format, enabling customers to run competitions between enterprise SOCs using Cyberbit Range. Cyberbit provides UMA with a fully packaged event format out of the box. More info about Cyberbit SOCathons can be found on Cyberbit's SOCathon page.

UMA Cyber Range Staff

The UMA Cyber Range is run by Dr. Henry Felch, Associate Professor of Cybersecurity and Computer Information Systems. UMA staff, including professors and students, serve as instructors and received a 3-day "Train the Trainer" course from Cyberbit. Upon course completion, participating trainers can easily operate Cyberbit Range and deliver cyber range sessions to students and peers independently. Instructors are optional for Cyberbit Cloud Range customers, as learners can also join in self-guided training without the need for an instructor. UMA is in the process of hiring a business development manager for industry training.



Accreditation

UMA's Cybersecurity Bachelor's Degree Program was designated as a National Center of Academic Excellence (CAE) by the NSA and DHS in May 2019 and is the only bachelor's degree in Maine with this accreditation.





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Management Testimonial



Cyberbit Range provides the most realistic cyber range platform I've seen since I'm teaching cybersecurity.

Dr. Henry Felch,
Associate Professor of Cybersecurity and Computer Information Systems
University of Maine at Augusta

Watch Dr. Felch Provide His Thought on Cyberbit Range

Student Testimonials

The Cyber Range has been an incredible tool that has allowed my skill sets to improve far beyond what I thought possible in a purely academic setting. The fusion of real-world skills coupled with hands on work has brought my confidence and abilities to new levels.

Mike Doerr – UMA Student

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Samuel Livingston – UMA Student

Being a UMA Cybersecurity freshman and getting exposure to an immersive training program like Cyberbit is valuable for two reasons. As a freshman, it helps me see real world applications of the methods and tools I am learning in my classes. The second, and most important aspect is that I can list Cyberbit training on my resume. This will show potential employers that I have experience in a security-operations setting and I have exposure to what threats look like and how to guard against or recover from them. Having this experience will help me bridge the skills gap that many people have after graduating. Really appreciate having this opportunity at my school.

Jenn Moody – UMA student

The Cyber Range allows you to get actual hands-on training that's not as limited as you would in a static lab environment. You are able to play around with leading software in the industry on a live network instead of just loading packet captures or logs. Moreover, you can see an attack happen in real time and see how the SOC software reacts to that threat. It helps you immerse yourself in the scenario and see it as a simulation rather than a lab where you are just following a script that tells you everything you have to do. You really feel like you're in the middle of the action!

Pierre Laot – Recent Graduate Current MCR Cybersecurity Engineer

Overall Results and Benefits

Since its opening, the launch of the Maine Cyber Range powered by Cyberbit Range has resulted in several key benefits:

- Increased Student Enrollment and Retention: Student enrollment in the cybersecurity program has increased even attracting students from outside the state. The program now includes over 300 students, students from outside of Maine, and industry practitioners
- Establish UMA as Cyber Leaders: UMA is now seen as the innovative regional cyber center for New England with the Maine Cyber Range.
- Stronger Relationships: Relationships with state, government and local industry have deepened with UMA becoming a strategic training partner.
- Address the Local Cyber Skills Gap: Fill empty or underskilled positions by providing local industry with better qualified and trained cybersecurity graduates.



Sen. Angus King Provides Thoughts on Cyberbit Range


THE WALL STREET JOURNAL.

World U.S. Politics Economy Business Tech Markets Opinion Life & Arts Real Estate WSJ. Magazine

PRO CYBER NEWS

Companies Use Cyber Ranges to Practice Security Skills

Mastercard built a range to experiment with offensive and defensive measures

Wall St. Journal on Advanced Cyber Range Training

ABOUT CYBERBIT™

Cyberbit provides hands-on cybersecurity education and training and addresses the global cybersecurity skill gap through its world-leading cyber range platform. Colleges and universities use Cyberbit Range to increase student enrollment and retention, train industry organizations, and position their institution as regional cybersecurity hubs by providing simulation-based learning and training. The Cyberbit Range platform delivers a hyper-realistic experience that immerses learners in a virtual security operations center (SOC), where they use real-world security tools to respond to real-world, simulated cyberattacks. As a result, it prepares students for their careers in cybersecurity from day-one after their graduation and reduces the need to learn on the job. Cyberbit delivers over 100,000 training sessions annually across 5 continents. Customers include Fortune 500 companies, MSSPs, system integrators, higher education institutions and governments. Cyberbit is headquartered in Israel with offices in the US, Europe, and Asia.

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