

Building Cybersecurity AI Expertise: A Tiered Approach at ECPI University

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Introduction

- AI is transforming cybersecurity by detecting threats and automating responses.
- The industry needs cybersecurity professionals with AI expertise.
- ECPI University has developed a tiered AI curriculum to meet this demand.

Why AI in Cybersecurity?

Rise in AI-driven cyber threats.

Need for AI-enhanced threat intelligence.

Growing role of automation in cybersecurity.



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Overview of the Tiered AI Curriculum

Five-tiered AI learning structure.

Integrated into cybersecurity courses.

Hands-on, practical experience at every level.

Level 1:

Cybersecurity AI Use Cases

Level 2:

Cybersecurity AI Prompting

Level 3:

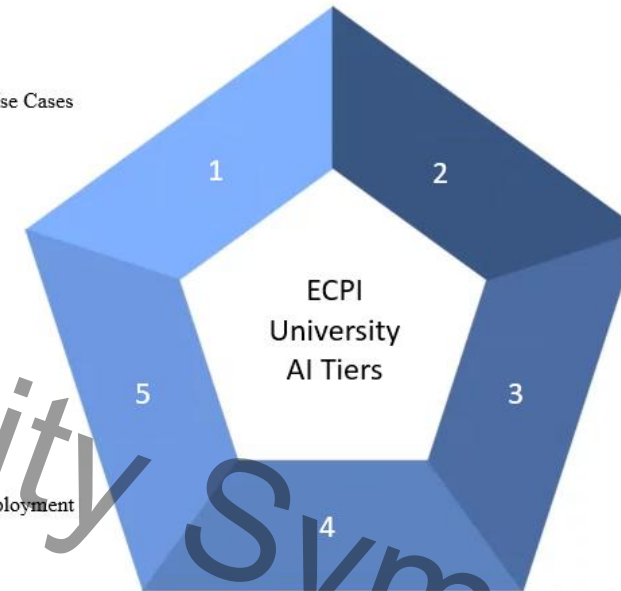
Cybersecurity AI Tools

Level 4:

Cybersecurity AI Model Design

Level 5:

Cybersecurity AI Deployment





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Cybersecurity AI Use Cases

Introduces real-world AI applications in cybersecurity.

Covers malware detection, anomaly detection, and ethical considerations.

Integrated into introductory cybersecurity courses.



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Cybersecurity AI Prompting

- Teaches prompt engineering for log analysis and automated incident response,
- Enhances efficiency in handling cybersecurity incidents.
- Delivered through specialized learning modules.

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Cybersecurity AI Tools

- Hands-on practice with AI-enabled security tools.
- Includes AWS Security Hub, CrowdStrike, and SIEM platforms.
- Embedded in practical lab exercises.

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Cybersecurity AI Model Design

- Guides students in building and training AI models.
- Uses Jupyter Notebooks for machine learning applications.
- Incorporated into advanced security analytics courses.



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- Offers real-world experience in AI-driven cybersecurity implementation.
- Covers cloud-based and on-premise deployment strategies.
- Culminates in capstone projects demonstrating practical application.

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Integration into Cybersecurity Courses

- AI levels are embedded in core cybersecurity curriculum.
- Ensures students develop AI skills alongside traditional cybersecurity expertise.
- Prepares students for real-world cybersecurity challenges.

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Alignment with CAE-CD Objectives

- Supports CAE-CD knowledge units and competencies.
- Aligns with industry certifications (AWS Cloud Practitioner, CompTIA Security+).
- Ensures students graduate workforce-ready with AI-powered cybersecurity skills.

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Workforce Readiness & Industry Demand

- Why employers seek AI-skilled cybersecurity professionals.
- Examples of AI-based cybersecurity roles and hiring trends.
- Testimonials from industry partners on the value of AI-trained graduates.

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Addressing the AI Cybersecurity Skill Gap

- Challenges in integrating AI into cybersecurity programs.
- Solutions ECPI University has implemented.
- Future improvements and curriculum advancements.

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Future Directions in AI & Cybersecurity

- Emerging AI trends in cybersecurity.
- Potential research opportunities and advancements.
- Expanding AI education to address future industry needs.

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Call for Collaboration

- Engaging with the CAE-CD community.
- Opportunities for research, industry partnerships, and curriculum enhancement.
- Open invitation for feedback and contributions.

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Conclusion & Q&A

- Recap of ECPI's AI-driven cybersecurity curriculum.
- How this initiative supports the cybersecurity workforce.
- Open the floor for audience questions and discussion.