**5-1 Journal: Computer Science Trends and Artifact Update**

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CS-499: Computer Science Capstone

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1. **What is the significance of each trend?**  
   AI in cybersecurity and the Internet of Things are two emerging trends in computer science. AI technologies are being integrated into security frameworks (Goodman, 2025). This is significant because AI can be used to improve current cybersecurity tools and reduce the chance of breaches. The Internet of Things (IoT) can be broadly described to include everything that connects to the internet (Burgess, 2018). The current IoT trend is devices that can connect to each other (Burgess, 2018). This is significant because the IoT allows devices to communicate across different networks, keeping everything connected more than ever (Burgess, 2018).
2. **How will each trend change the field of computer science?**  
   AI in cybersecurity will change the computer science field by providing added security (Achanta, 2025). AI requires machine learning, and the data isn’t always uniform or accurate. This can cause a change in the quality of the data that is used in ML models (Achanta, 2025). The Internet of Things will change the computer science field by driving technological advancements and innovation (Jebur & Al-Khafaji, 2024). IoT can greatly impact and improve many different industries (Jebur & Al-Khafaji, 2024).
3. **How will each trend change the experience of consumers, workers, or citizens?**  
   AI in cybersecurity can better protect consumers, workers, and citizens from cyber attacks and breaches (Goodman, 2025). It can quickly detect and stop an attack, limiting the damage (Goodman, 2025). The IoT can change the experience of consumers, workers, and citizens by connecting various devices to each other (Burgess, 2018). The IoT can bring about smart homes, cities, and industries, and improve experiences (Jebur & Al-Khafaji, 2024).
4. **How will each trend fit in with your career interests or aspirations?**  
   I am interested in databases which need cybersecurity to keep the data safe from attacks. AI in cybersecurity can increase efficiency and outsmart sophisticated attacks (Goodman, 2025). The Internet of Things creates a huge amount of data, and that data will need to be kept somewhere (2024). Both trends have an impact on databases.
5. **Which course outcomes have you achieved so far, and which ones remain?**  
   I have achieved all course outcomes.

**Status Checkpoints**

| **Checkpoint** | **Software Design and Engineering** | **Algorithms and Data Structures** | **Databases** |
| --- | --- | --- | --- |
| **Name of Artifact Used** | **Artifact name:** Project 2 Dashboard  **Origin:** CS-340 Client Server Development | **Artifact name:** Project 2 Dashboard  **Origin:** CS-340 Client Server Development | **Artifact name:** Project 2 Dashboard  **Origin:** CS340 Client Server Development |
| **Status of Initial Enhancement** | Enhancement completed. | Enhancement completed. | Enhancement completed |
| **Submission Status** | Submitted to Brightspace. | Submitted to Brightspace. | Submitted to Brightspace. |
| **Status of Final Enhancement** | Pending integration of feedback. | Pending integration of feedback. | Pending integration of feedback. |
| **Uploaded to ePortfolio** | Planned but not completed yet. | Planned but not completed yet. | Planned but not completed yet. |
| **Status of Finalized ePortfolio** | Planned but not completed yet. | Planned but not completed yet. | Planned but not completed yet. |

References

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Burgess, M. 2018. *What is the Internet of Things?* Wired.

<https://www.wired.com/story/internet-of-things-what-is-explained-iot/>   
 Goodman, C. 2025. *AI in Cybersecurity: Transforming Threat Detection and Prevention*.

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Jebur, Mithal & Al-Khafaji, Nawras. (2025). *Review the Role of IoT in Computer*

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