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CS 499

Journal 5: Emerging Technology

Two emerging technologies that interest me are AI agents and Augmented Reality. Both of these technologies are impacting the industry currently and will in the future. AI agents are powered by large language models and other decision-making frameworks. They are developed to interpret prompts, analyze data sources, and execute complex workflows without human intervention. “Enterprises deploy AI agents to automate routine tasks—such as customer support triage, report generation, and scheduling—achieving significant gains in efficiency and cost reduction” (Fallmann, 2025).

Augmented Reality (AR) works by overlaying visuals like 3D models, annotations, or interactive interfaces with a user’s smart device or wearable technology. AR has uses in areas that range from entertainment to industrial applications. AR allows users to bring video games to life and helps surgeons save lives. “Companies are actively developing AR tools to assist in complex surgeries and to train medical professionals” (Grand View Research, 2025).

From a computer science standpoint, “AI agents are driving new frontiers in algorithm design, reinforcement learning for goal-driven behavior, safety-aware autonomous planning, and distributed multi-agent coordination” (Stave et al., 2025). This aligns with my career interests of working with AI and agentic system development. Agentic systems can be developed for a variety of applications and for personal and professional use, I see this as a benefit for me and my future career. AR will expand the ability of developers by giving them access to full displays that can be customized to their preferences. This will greatly benefit computer science by reducing the amount of equipment required and lowering the initial burden for individuals trying to enter the field. AR will be a benefit in my career by being another tool for me to use and help increase my productivity.

Societally, AI agents will be able to perform tasks for individuals in areas that are underrepresented or difficult to reach. This means these individuals will have access to services they otherwise would not be able to, which is an improvement for society. AI agents also pose a threat to the workforce as well. They will be able to perform certain tasks that will inevitably replace humans. Although this does pose a risk to society it’s not the first time a technology has been developed that has replaced humans, switchboard operators and some factory positions are a small example of positions lost to new forms of technology. AR has the potential to revolutionize education with interactive simulations. This benefit would be for early education in urban areas with limited resources but also has potential with higher and advanced education. With rising health epidemics doctors would be able to receive constantly updated training simulations. AR does have some drawbacks; it could potentially be a distraction and ultimately draw users away from reality into the world of AR. With people becoming more distant and divided by the day this would be just one more thing to push people further from basic interactions.

I have completed the three categories of my enhancement plan. The enhancements made for category one: Software Design and Engineering have allowed me to demonstrate my skills through structured development of my Travlr project, focusing on modularity, maintainability, and clear documentation. With category two: Algorithms and Data Structures I showed how I am able to optimize algorithms and implement logic while maintaining clarity and efficiency. With category three: Databases, I’ve improved my ability to design normalized schemas, integrate secure queries, and manage CRUD operations through practical enhancements. With these enhancements I have completed the five course outcomes. To finish the course, I need to complete my ePortfolio and the self-assessment. After completing these final items, I hope to have succeeded in successfully completing the course.

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| Checkpoint | Software Design and Engineering | Algorithms and Data Structures | Databases |
| Name of Artifact Used | Travlr web app | Travlr web app | Travlr web app |
| Status of Initial Enhancement | Completed, refactored for better modularity, adjusted UI for added pages | Completed, implement new logic for search queries and integrated search feature into UI | Completed, booking schema created, added API endpoints for booking, created and integrated registration and login |
| Submission Status | Submitted | Submitted | Submitted |
| Status of Final Enhancement | Completed, ready to upload | Completed, ready to upload | Completed, ready to upload |
| Uploaded to ePortfolio | Uploaded | Uploaded | Uploaded |
| Status of Finalized ePortfolio | Completed | Completed | Completed |

Works Cited

Fallmann, D. (2025, April 24). *Why enterprises must embrace Ai Agents*. Forbes. https://www.forbes.com/councils/forbestechcouncil/2025/04/24/the-ai-agent-revolution-why-enterprises-must-embrace-the-next-tech-breakthrough

Grand View Research. (2025). *Augmented reality market size, share & trends report 2030*. Augmented Reality Market Size, Share & Trends Report 2030. https://www.grandviewresearch.com/industry-analysis/augmented-reality-market

Stave, J., Kurt, R., & Winsor, J. (2025, May 22). *Agentic AI is already changing the workforce*. Harvard Business Review. https://hbr.org/2025/05/agentic-ai-is-already-changing-the-workforce