

MODULE 5 Computer Science Trends and Artifact Update

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As I stated in the previous module, I plan to expand my knowledge of real-time software systems, so I found the article about the future of video games very interesting. The one topic that interests me the most is physically based rendering (PBR), which includes advanced lightning, particle effects, procedural generation to create detailed environments and dynamic visual effects. I studied OpenGL rendering in the Graphics and Visualization course, but with PBR, developers can achieve more advanced level of realism.

Another trend that interests me is 3D printing. I find it fascinating to create three-dimensional objects from a CAD model or a digital 3D model. And as I learned from my research, the future of 3D printing is 4D printing. In 4D printing, 3D shapes can morph into different forms in response to environmental stimulus such as ultraviolet light. This interests me because my first education is as metallurgical engineer, and we studied a lot about different metals and composite materials, their properties and structures. This technology is still in early stages, but it is expected to revolutionize various industries, including healthcare, aerospace, construction and manufacturing.

Status Checkpoints for All Categories

Checkpoint	Software Design and Engineering	Algorithms and Data Structures	Databases
Name of Artifact Used	Artifact name: Travlrs MEAN stack application Origin: CS 465 Full Stack Development	Artifact name: Travlrs MEAN stack application Origin: CS 465 Full Stack Development	Artifact name: Travlrs MEAN stack application Origin: CS 465 Full Stack Development
Status of Initial Enhancement	Enhancements completed	Enhancements completed	Enhancements completed
Submission Status	Submitted with feedback from the instructor	Submitted with feedback from the instructor	Submitted with feedback from the instructor
Status of Final Enhancement	Need to finish front-end, style forms, buttons with CSS	Completed	Completed
Uploaded to ePortfolio	Uploaded to GitHub, need to write the README file	Uploaded to GitHub, need to write the README file	Uploaded to GitHub, need to write the README file
Status of Finalized ePortfolio	Planned but not yet completed	Planned but not yet completed	Planned but not yet completed

References

3D Printing. (2025, June 24). In Wikipedia. https://en.wikipedia.org/wiki/4D_printing

4D Printing. (2025, July 15). In Wikipedia. https://en.wikipedia.org/wiki/3D_printing

Bradshaw, R. (2023, June 30). *The Future of Video Gaming: Technologies That Will Transform Our Experiences*. APOLLO TECHNICAL <https://www.apollotechnical.com/the-future-of-video-gaming/>