

Zach Ezzell, PhD

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I'm a curious, design-minded engineer with a focus on graphics systems and C++. My experience as an engineer and leader spans desktop, web, and a variety of engines and frameworks.

Education

2012. Ph.D. Computer Engineering. University of Florida.

2012. M.S. Computer Engineering. University of Florida.

2006. B.S. Digital Arts and Sciences. University of Florida.

Work Experience

Engineering Manager (Graphics and Geometry). Aurora Solar.

4/2023 - 11/2025. Led team (7 engineers at max size) that owned the core engine and algorithms driving Aurora's web-based CAD tools. Guided multiple features from inception to ship. Created prototypes to inform technical evolutions. Collaborated cross-functionally and with senior leadership on feature and technical roadmaps. Led team with empathy through challenging times (solar industry downturn, multiple rounds of layoffs).

Senior Software Engineer (Graphics). Aurora Solar.

6/2021 - 4/2023. Implemented 3D UI and new rendering modes. Added testing infrastructure to improve quality and speed of graphics tests. Improved performance of pages with multiple CAD views. Served as tech lead and advised on feature and technical roadmaps. Languages: JavaScript, TypeScript, C++, GLSL.

Senior Software Engineer (Graphics and Charting). MathWorks.

5/2017 - 5/2021. Expanded MATLAB's charting infrastructure. Designed novel chart layout algorithms and user-facing APIs. Led long-term cross-functional effort to improve chart visual design. Languages: C++, MATLAB.

Software Engineer (Rendering). MathWorks.

5/2015 - 5/2017. Improved infrastructure for MATLAB's desktop and web renderers. Optimized rendering and interacting with large datasets (10x speed and memory improvement). Implemented GPU-based hit testing. Languages: C++, JavaScript, GLSL, MATLAB.

Chief Technology Officer. NeuroNet Learning (Startup).

3/2013 - 5/2015. Managed developers and animators building NeuroNet's educational games. Defined user experience and coded core modules for product suite. Developed R&D game that tracked player movement using the Kinect. Languages: C#, C++, HLSL.

Research Assistant. University of Florida.

8/2008 - 12/2012. Built software for various funded research projects involving simulation and visualization. See www.zachezzell.com for more.

Select Publications

Ezzell Z and Fishwick P A (2017). Building dynamic 3D visualizations through ontology-guided interactions with domain knowledge and simulation models. *Journal of Simulation*. Palgrave MacMillan.

Ezzell Z (2012). A unified human interaction-based theory and framework for simulation modeling and visualization design. PhD Thesis. University of Florida.

Ezzell Z, Fishwick P A, Cendan J (2011). Linking simulation and visualization construction through interactions with an ontology visualization. *Proceedings of the 2011 Winter Simulation Conference*.

Ezzell Z, Fishwick P A, Lok B, Lamptang S, Pitkin A (2011). An ontology-enabled user interface for simulation model construction and visualization. *Journal of Simulation*. Palgrave MacMillan.