

Mr. Walker Weiss is a Senior Technologist and Team Leader with Engineering Systems Inc. (ESi), and serves as the Regional Office Manager (ROM) for the Ames, Iowa office. He earned a Bachelor of Science degree in Mechanical Engineering from Iowa State University. Mr. Weiss specializes in the development of technical visualizations and demonstrative exhibits for litigation, engineering analysis, and client communication.

Mr. Weiss has extensive experience in three-dimensional modeling, animation, and visualization, utilizing Autodesk 3ds Max and related software platforms to create compelling and technically accurate demonstrative evidence for use in mediation, arbitration, and trial. His expertise includes camera matching and photogrammetric reconstruction, reverse engineering from laser scan and CT scan data, CAD modeling, and the development of scientifically grounded visual aids that communicate complex engineering concepts to technical and non-technical audiences. He is experienced in integrating engineering analysis, survey data, imagery, and three-dimensional laser scanning to produce accurate and effective visual representations of events, products, and environments.

Education

BS, Mechanical Engineering. Iowa State University. 2019

Positions Held

Engineering Systems Inc., Ames, Iowa

- Regional Office Manager, 2026 – Present
- Team Leader, 2024 – Present
- Sr. Technologist, 2023 – Present
- Technologist, 2021 – 2023

Afinitas, New Hampton, Iowa

- Mechanical Engineer, 2019 – 2021

Contact Information

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ESi Ames

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Areas of Specialization

- Animation
- Engineering & Scientific Visualization
- Demonstrative Aids & Exhibits
- Camera-Matching
- Scan data processing
- 3D CAD Modeling

Continuing Education

- **Traffic Crash Reconstruction for Engineers** – Northwestern University Center for Public Safety, 2024
- **Drone Training** – DroneU (CO), 2024

Project Experience

Camera Matching and Motion Analysis: Train-Vehicle Collision

- Corrected lens-distortion in surveillance footage documenting the incident.
- Processed laser scan data of accident site and involved vehicles.
- Matched a virtual camera to surveillance footage by identifying shared reference points between the scan data and video imagery.
- Utilized the calibrated virtual camera to analyze vehicle motion and calculate speeds throughout the event sequence.
- Produced animations and visualizations depicting the collision sequence from multiple perspectives.

Vehicle Accident Reconstruction

- Processed 3D laser scan and drone survey data to create an accurate, textured model of the accident site.
- Applied camera-matching techniques to align photographs and physical evidence, including tire marks and roadway features, within the 3D environment.
- Incorporated vehicle event data recorder (EDR) information to accurately represent vehicle speed and dynamics.
- Created an optimized 3D model with improved geometry, textures and visual fidelity.
- Produced animations and renderings from multiple viewpoints for litigation support and case presentation.

Reverse Engineering

- Converted high-resolution laser scan data into parametric CAD geometry using SolidWorks.
- Developed engineering models for finite element analysis (FEA) and failure evaluation.

Biomechanical Visualization and Character Positioning

- Created a 3D representation of an industrial facility using laser scan data and scene photographs.
- Positioned an anatomically-proportioned human model to recreate body postures and movements described in testimony and documentation.
- Generated visual exhibits illustrating the interaction between character model and site equipment for technical reporting.