



Joel Panock, LSIT, MSEE

CEO, Principal Engineer, M.S. ECE

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Registration

Land-Surveyor-in-Training, CA No 8695

FAA – Part 107 UAS REMOTE PILOT No. 4168624

Professional Background

Mr. Panock has over 22 years of mapping, surveying, and 3D modeling using AutoCAD technologies. He has extensive experience working with laser scan data/LiDAR using primarily Leica Geosystems software. Mr. Panock has developed a multitude of automation tools and algorithms for 3D modeling which allow real-time analysis as well as aid in production and photogrammetry. Mr. Panock has 14 years of forensic engineering, animations and litigation support experience specifically for expert witness purposes including reconstruction and mapping from photogrammetry, laser scanning, and 3D analysis. He has produced numerous court animations, exhibits and presentations for accident reconstruction, wildland fire origins, visibility analysis, officer involved shootings, wrongful death and catastrophic injury cases. Mr. Panock holds a Masters in Electrical and Computer Engineering as well as an Land Surveyor- in-Training (LSIT) certification passing the NCEES Fundamental in Surveying exam.

Engineering Experience

As an engineer, Mr. Panock has developed multiple 3D visualization platforms to produce end-user products for displaying complex geographic and structural data easily interpreted by the viewer/user. Mr. Panock built a real-time game engine platforms for land developers to virtually walk around their proposed subdivision. Mr. Panock's responsibilities included product development, management of a production staff, and delivery of media products for clients. Mr. Panock developed and employed multiple automation tools to handle the repetitive tasks for assisting production of animation, modeling, texturing and rendering of 3D visualization products. Automation tasks include rigging, and analyzing for automotive and physical models, bullet trajectory models, camera ray tracing and imaging analysis among others. Mr. Panock has been conducting surveying and mapping support, photogrammetric control, topographic/engineering design and boundary surveys for the past 9 years

Forensic Experience

Mr. Panock has been involved in providing professional surveying and mapping, litigative consultation services on forensic investigations for creating spatially accurate basemapping and demonstrative exhibits for accident reconstructions, officer involved shootings, wildfires, explosions, viewshed analyses, line of sight analyses, workplace injury, catastrophic injury and wrongful death cases.

SILVERADO FIRE LITIGATION, Case Number: 30-2021-01195715-CU-MTCXC Superior Court, Orange County, California – Mr. Panock was designated as an expert witness to analyze and process forensic LiDAR scans of the area of origin of this 2020 urban wildfire. Duties included video and photo analysis, terrestrial photogrammetry, integration of airborne and terrestrial LiDAR, from which basemapping and creation of exhibits were generated. The Silverado Fire burned approximately 13,390 acres destroyed 1 structure and 2 minor structures.

Washington Department of Natural Resources v. Avista Corporation, et al. (Boyd's Fire Incident) – Mr. Panock supported the forensic investigation to conduct terrestrial LiDAR near the origin area. Duties included LiDAR scanning, analysis, photogrammetry, integration of airborne and terrestrial LiDAR from which visibility analysis, and a photorealistic drive-thru animation driving north and south bound on highway 20 in Kettle Falls, Washington with photogrammetrically reconstructed trees along the roadside. Duties included conducting terrestrial LiDAR along the roadway near the subject tree and origin area, 3D modeling and animation. Extensive close-range terrestrial photogrammetry and LiDAR were employed to accurately reconstruct the subject tree and surrounding trees.

Shane Blakely, et al. v. Avista Corporation, a Washington corporation; et al., Lead Case No. 22-2-00968-32 in the Superior Court of the State of Washington in and for the County of Spokane (Babb Fire Incident) – Mr. Panock provided technical services to conduct forensic LiDAR of the areas of origin. Duties included GPS control, LiDAR scanning, photogrammetry, integration of airborne and terrestrial LiDAR, from which visibility analysis, basemapping, exhibits and a walk-thru animation were generated. Extensive close-range terrestrial photogrammetry and LiDAR were employed in the reconstruction of the diseased Ponderosa pine subject tree that struck an energized overhead power line during Labor Day weekend of 2020. The tree had been cut into dozens of pieces before LiDAR was conducted. The Babb Road-Malden Fire burned nearly 15,000 acres and destroyed 80% of the small towns of Malden and Pine City, Washington.

Sheila Aguilar, et al. v. Los Angeles Department of Water and Power, et al., Creek Fire Litigation, Lead Case No. 18STCV03092, Superior Court for the State of California, County of Los Angeles, Central District Mr. Panock served as the primary technical analyst for the Creek Fire origin investigation, focusing on the correlation of surveillance video with LiDAR-based visibility analysis. Following field data collection, he integrated terrestrial and airborne LiDAR, photogrammetry, GPS control, and surveillance-camera imagery to reconstruct camera viewpoints and evaluate lines of sight to the suspected origin areas. Mr. Panock developed extensive viewshed analyses and animations that revealed critical conflicts with the prior federal government analysis and provided the technical breakthrough that led to reevaluation of the initial determination and identification of the actual area of origin. His work also included basemapping, technical exhibits, and visualizations used to clearly demonstrate the findings. The 2017 Creek Fire burned nearly 16,000 acres and destroyed 123 structures in Kagel Canyon and the Angeles National Forest north of Sylmar, California.

Marcus Le v. Hawaiian Electric Company, Inc., et al., CIVIL NO. 19-1-0352-03 (JPC) in the Circuit Court of the First Circuit, State of Hawaii – Mr. Panock led the technical reconstruction and visualization effort for this matter. The work focused on determining the historical foliage of a lychee tree relative to overhead electrical power lines using first-responder photographs taken at the time of the incident. He reconstructed the tree and surrounding conditions as they existed approximately three and a half years before the field investigation. His work included terrestrial LiDAR scanning, photographic analysis, close-range photogrammetry, detailed tree reconstruction through photogrammetric resection, 3D modeling of the ladder and the plaintiff's position within the tree, range-of-motion and

power-line proximity analysis, basemapping, trial exhibits, and fly-through animation depicting vegetation-clearance distances. The resulting reconstruction and visual exhibits clearly demonstrated the spatial relationships and incident conditions and contributed significantly to the successful outcome of the case.

Coordination Proceeding Special Title (Rule 3.550) SOUTHERN CALIFORNIA FIRE CASES, Judicial Council Coordination Proceeding No. 4965, Superior Court of the State of California for the County of Los Angeles (Thomas Fire Incident) – Mr. Panock provided technical services through CBC Geospatial Consulting, Inc., in connection with the investigation of the Anlauf Canyon and Koenigstein origin areas in Ventura County, California. His work included GPS control, terrestrial LiDAR scanning, aerial and terrestrial photogrammetry, integration of airborne and terrestrial LiDAR data, surveillance-video synchronization and analysis, spatial analysis, basemapping, exhibit preparation, and animation. He correlated synchronized security-camera footage from locations extending as far away as Oxnard with terrestrial photogrammetry and LiDAR-based line-of-sight analysis. This integration of video evidence and spatial data enabled the electrical flashes to be analyzed across multiple viewpoints and accurately located within the Anlauf Canyon origin area.

Camp Fire Incident, Butte County, CA – As part of CBC Geospatial Consulting, Inc.'s team, Mr. Panock performed forensic LiDAR and photogrammetric work involving the incident's origin area, including the subject transmission tower and nearby overhead transmission alignments. His work included GPS control, terrestrial LiDAR scanning, aerial and terrestrial photogrammetry, fire-direction indicator documentation, data processing and analysis, basemapping, exhibit preparation, and animation. The Camp Fire burned approximately 153,000 acres, destroyed more than 18,000 structures, and resulted in 85 civilian deaths.

Education

MS, Electrical and Computer Engineering, University of California, Irvine, CA, 2004
BS, Electrical and Computer Engineering, University of Rochester, Rochester, NY, 2002

Scholarships:

2002 MICRO Fellowship
2003-2004 Multiple teaching assistantships at UC Irvine for Digital Signal Processing, Electrical Engineering for Biomedical Engineers, VHDL and LABVIEW

Special Training

- *Leica Scan Station Laser Scanning Training – Grass Valley, CA, 01/13 (3 days)*
- *Leica Traverse Training – San Ramon, CA, 08/14 (1 day)*
- *CTI NACVA Expert Witness Bootcamp – Phoenix, AZ – 01/14 (3 days)*
- *Seakexperts.com How to Be an Effective Expert Witness at Deposition and Trial – Clearwater Beach FL 04/25/24-04/26/24 (2 days)*

Work History Feb'26 to Present

JP Forensics, LLC. – Grass Valley, CA – CEO, Principal Engineer,
Provide terrestrial LiDAR scanning, photogrammetry, UAV data collection, 3D modeling, and reconstruction services for complex forensic investigations. Perform field documentation, technical processing, spatial analysis, mapping, CAD drafting, scripting and workflow

automation, animation, and video production in support of wildland fire origin and cause investigations, tree reconstruction, accident reconstruction, wrongful death cases, and officer-involved shootings. Develop custom tools and automated workflows to improve data processing, analysis, quality control, and production of technical exhibits. Create clear, defensible visual evidence to help clients and experts understand the causes and circumstances of catastrophic events

*DEC '17 to
Present*

CBC Geospatial Consulting, Inc. Sacramento, CA, Engineer,

Field Surveying and office processing/analysis including terrestrial LiDAR, conventional total station surveying, GPS, and UAV drone piloting, 3D modeling and mapping/drafting using AutoCAD technologies, animation, photogrammetry, and video production. Concentration on forensics for wildland fire origin & cause mapping, tree reconstruction, and accident reconstruction. Laser scanning, photogrammetry, 3D modeling and reconstruction work have been utilized in multiple cases where it proved critical for determining cause of catastrophic events.

*SEP '07 to
Present*

JP Landtech Grass Valley, CA, Principal /3D Expert Consultant,

Sole Proprietorship where work includes creation of 3D animations, simulations and analysis tools, as well as mapping products and 3D and digital assets. Projects have included 3D visualization products for land developers, creating before and after conditions which could be switched in real time, 3D modeling for forensic animation companies, among others.

*10/12 to
08/17*

Precision Simulations, Inc. – Grass Valley, CA, Director of 3D Services,

Production of 3D animations including 3D modeling, animating, texturing, lighting, rendering and post processing for all PSI deliverable products and services. Terrestrial LiDAR for spatially accurate 3D models and simulations, management of each laser scan set up execution and post processing of data, including building 3D models based on scan data. Development of applications for proprietary algorithms for Forensic recreation and the 3D working model including visibility analysis, real time measurements, shadow studies and kinematics automation among others.

*01/11 to
01/12*

Total Immersion – Los Angeles, CA, Creative Pre-Sales Engineer,

Develop, conceptualize and pitch, sell and assist production of Augmented Reality (AR) solutions for mobile, web and dedicated platforms for a vast array of industries including entertainment, sports, government, automotive and residential to name a few. Build and maintain application to handle complete sales cycle data from concept generation to final contract output in standardized templates for projects including a multi-tiered project handling and organization. Managed the relationship between sales/clients and production team by determining creative ways to use technology while fitting client's budget and needs.

*06/09 to
12/10*

Earth Construction & Mining – Garden Grove, CA, Project Manager/Estimator,

Responsible for management of construction projects from start to finish. Handled IT support, 3D computer modeling and estimating, client/vendor communications and negotiations, project planning and scheduling, financial tracking and billing, media creation

for permits and government agencies, and website content development and preparation of drafting documents for proposed and final as built submitted drawings.

06/04 to
09/07

Developers Research – Irvine, CA, Director of 3D Technology,

Created the 3D Simulation and Rendering Department, exploiting high resolution orthographically rectified aerial photography draped onto existing topography and built proposed elevations, architectural plans, landscaping and structural details, built virtual reality applications for land developers. Responsible for product development, production of all simulation and media projects. Managed team of 3D artists. Client projects included obtaining developers project approval by planning commission, and sales of new properties.

**Peer
Reviewed
Papers**

B Butler, C Fries, J Panock, M Jorden, and J Melinek., "Catching A Bullet: Gunshot Wound Trajectory Analysis Used To Establish Body Position. Images in Forensic Pathology" - Academic Forensic Pathology, Vol. 4 no. 6, pp 739-745 December 1, 2016
<https://pmc.ncbi.nlm.nih.gov/articles/PMC6474491/>