

EUGENE LISCIO, P.ENG.

ai2-3d

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Woodbridge, ON L4L8A4
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Professional Summary

Registered Professional Engineer (P. Eng.) with over 17 years of combined experience using 3D digital techniques for measurement, analysis, and visualization. Owner of ai2-3d, a consulting company targeted toward providing measurement/mapping, analysis and 3D reconstruction services utilizing laser-based equipment such as total stations, Lidar scanners, structured light scanners and photogrammetry techniques. Adjunct Professor at the University of Toronto Mississauga in the Forensic Sciences Program and Adjunct Professor at Laurentian University. Developer of Recon-3D iPhone scanning app.

Personal skills and Competencies

Total Station Mapping
3D Laser Scanning
Photogrammetry
Forensic Animations
Digital 3D modeling

Crime Scene Reconstruction
3D Printed Models
Virtual 3D Models
3D Shooting Event Reconstructions
Digital Video and Image Metric Analysis

Software

PhotoModeler
MetaShape
3D Zephyr
CloudCompare
Faro Scene 2022

FARO Zone 3D
Rhino 3D Version 7
3D Studio Max 2022
Hemospat (Bloodstain Pattern Analysis)
iINPUT-ACE

Hardware:

Faro Laser Scanners
Sokkia Total Station 530R3

Artec Eva & Spider Scanners
Phantom 4 Drone, DJI Mavic Mini

Recent Courses, Lectures and Training Provided by Eugene Liscio

Regular lecturer and international training on 3D laser scanning, photogrammetry & other 3D technologies:

- Mar 2023-Association for Crime Scene Reconstruction-Trajectory Workshop, North Carolina
- Oct 2022-International Association of Bloodstain Pattern Analysts, San Diego, CA
- May 2022-Congresso Nacional De Criminalistica, Brazil, Presentation on 3D Technologies for BPA
- May 2022-Ontario Forensic Investigators Association, Niagara Falls, Canada, Trajectory Workshop
- Oct 2021-Australia New Zealand Forensic Science Society, 3D Bloodstain Presentation
- Feb 2020 - IAFSM Basic Laser Scanner Certification Course, Nashville, TN
- Oct 2019 - IABPA, Workshop and Presentation, Chicago, IL
- Oct 2019 - California Association of Criminalists, Workshop and Presentation, Ontario, CA
- Sep 2019 - Santa Rosa County Sheriff's Office, FARO Zone 3D Training
- Jun 2019- International Association of Bloodstain Pattern Analysts, Paris, France
- May 2019-Ontario Forensic Video Analysts Association, Muskoka, Canada
- April 2019-IAFSM Basic Laser Scanner Certification Course, Dutch Police, The Netherlands
- Dec 2019- IAFSM Basic Laser Scanner Certification Course, Fort Worth, TX
- Nov 2018-Korean National Police Agency Forensic Conference, Seoul, Korea
- Oct 2018 - Scene 7 Advanced Training, Toronto, Canada
- Oct 2018-IABPA - Presentations and Workshops, Ottawa, Canada
- Sep 2018-Canadian Firearms Symposium, Toronto, Canada
- May 2018- Ontario Forensic Investigators Association, Niagara Falls, Canada
- May 2018-Ontario Forensic Video Analysts Association, Niagara Falls, Canada
- Mar 2018- Association of Crime Scene Reconstruction, Tacoma
- June 2017-Toronto Police Forensic Identification Conference, Toronto, Canada

Recent Training for Police Agencies and Organizations:

- Nov 2022-Brantford Police, ON
- Nov 2022-Hamilton Police, ON
- Oct 2022-Sudbury Police, ON
- Oct 2022-Durham Regional Police, ON
- Dec 2021 Sarnia Police, Sarnia, ON
- Nov 2021 Timmins Police, Timmins ON
- JUN 2021-Hamilton Police Services, ON
- OCT 2020-Laboratoire de sciences judiciaires et de médecine légale, Montreal, QC
- OCT 2020-Hamilton Police Services, ON
- MAR 2020-Victoria Police, BC
- SEP 2019-Santa Rosa County Sheriff's Office, FL
- JUN 2019-Niagara Falls Police, ON
- Apr 2019-Durham Regional Police, ON
- Mar 2019-Highland Heights, KY
- Dec 2018-IAFSM Certification Course, TX
- Apr 2018-FBI, Michigan
- Oct 2018-Milpitas, CA
- Sep 2018-Charlottetown, PEI
- Jul 2018 – Regina Police, SK
- June 2018-Denver Police
- Mar 2018-Santa Rosa Police, FL
- Feb 2018- Kent Police, WA
- Feb 2018-Joliet Police, IL
- Jan 2018-Webster Police, TX
- Dec 2017 FBI, Michigan
- Oct 2017- Nicholasville, KY
- Mar 2018-Military Police, Sao Paulo, Brazil
- Mar 2018-Brazilian Federal Police, Brasilia, Brazil
- Jun 2017-Jackson County Sheriff's Office
- Feb 2017-Macomb County, MI
- Feb 2017-Rochester Police
- Oct 2016-Gila River Police, AZ

Recent Training Received:

- Oct 2022-International Association of Bloodstain Pattern Analysts, San Diego, CA
- JUN 2021 – Canadian Society of Forensic Science, Virtual Conference
- Feb 2020 – iINPUT-ACE Forensic Video Analysis Workflow Training, Tempe, AZ
- Jul 2019 – iINPUT-ACE Investigator Course, Peel Regional Police, Mississauga, ON
- May 2019- Basic Bloodstain Pattern Recognition Course, Mississauga, ON
- Jan 2019 – iINPUT-ACE Traffic Investigator Seminar, Roseville, CA
- Oct 2018 – IABPA, Ottawa, Canada
- Sep 2018 – Canadian Firearms Symposium, Toronto, ON
- Mar 2018 – ACSR, Tacoma, WA
- Nov 2017 – IAFSM Clandestine Grave Workshop, Atlanta, GA
- Sep 2016 – IABPA, Fabrics Workshop, Salt Lake City, Utah
- Sep 2015 – IABPA, HemoSpat Workshop, Fort Worth, TX
- Jan 2014 – FARO, Train the Trainer Certificate, Lake Mary, FL
- Jan 2013 – FARO, Laser Scanner, Training Certification, Lake Mary, FL
- Jun 2013 – Shooting Incident Reconstruction, Lincoln, NB
- Feb 2012 – Canadian Firearms Safety Training, Mississauga, ON
- Feb 2011 - Panoscan Training, Panoramic Camera, Hamilton, ON
- Nov 2010 - FARO Laser Scanner Training, Detroit, MI
- Jul 2010 - Photogrammetry Training for Elcovision 10, Online Training
- Jul 2009 - Extended Total Station Training, Mississauga, ON
- Jul 2008 – Sokkia Robotic Total Station Training, Mississauga, ON
- Sep 2007 - PhotoModeler Collision Investigation, Seattle, WA

Peer Reviewed Publications/Texts/Articles

1. Accuracy of impact angle determinations from bullet holes in drywall panels Adrian Santangelo, Eugene Liscio & Kimberly Nugent, Canadian Society of Forensic Science Journal, March 2023, <https://doi.org/10.1080/00085030.2023.2169478>
2. Damage Characteristics of Fabrics Created by TASER Probes, Wanying Cao HBS, Eugene Liscio P.Eng, Hannah Elizabeth Ruffo HBS, Corrin Marie Doucette, Yu Ran Zhou BSc, Journal of Forensic Sciences, January 2023, DOI: 10.1111/1556-4029.15206
3. Assessing the viability of the iNPUT-ACE Camera Match Overlay Tool for use in suspect height analysis, Angela Olver, H.B.Sc., Eugene Liscio, P.Eng., Identification Canada, Volume 45, No 3, September 2022
4. Contributed Chapter 21B, Crime Scene Photogrammetry, Pages, 435-443, Handbook of Forensic Photography, Weiss, Sandy. CRC Press, Taylor and Francis Group, 2022
5. Determining the Accuracy of Area of Origin for Impact Patterns Found on Horizontal Surfaces., Reynolds J, Liscio E., J Assoc Crime Scene Reconstr. 2022;26:1-14.
6. Guidelines for the Use of Terrestrial Lidar Scanners in Criminal Justice Applications. March 2022. Member of NIJ Funded Team which developed these guidelines. https://forensiccoe.org/guidelines_terrestrial_lidar_scanner/
7. Inter observer errors of cast-off stains using FARO zone 3D, Eugene Liscio, Quan Le, Forensic Science International 330 (2021) 111098, Nov 2021
8. Accuracy of Linear Measurements using Google Maps in FARO Zone 3D for Forensic Reconstruction of Outdoor Scenes, Eugene Liscio, Quan Le, Ryan Rider, & Tilo Voitel, J Assoc Crime Scene Reconstr. 2021;25:11-23.
9. Behaviours of various clothing under CCTV images with infrared night vision, Jihwa Lim, Eugene Liscio, Identification Canada, Volume 44, No 2, June 2021
10. Determining the accuracy and errors of estimating a shooter's position based on cartridge case ejection patterns Andrew Lo, Eugene Liscio, Forensic Science International 328 (2021) 111045, October 2021
11. A Large-Scale Study of Bloodstain Ellipse Marking, Eugene Liscio, Craig C. Moore, JBPA, Volume 36, Number 3, September 2021
12. Defining Patterns and Behaviours of Forward Spatter Gunshot Misting, Eugene Liscio, Bianca Ledo, Forensic Sci. 2021, 1(2), 86-101; <https://doi.org/10.3390/forensicsci1020009>
13. The lead-in method for bullet impacts in metal panels, Eugene Liscio, Jaeoun Park, Forensic Science International, July 2021, 326 (2021) 110914
14. Inter-Observer Error for Area of Origin Analysis Using FARO Zone 3D, Gareth Griffiths, Eugene Liscio, Helen Guryn, Quan Le, Dean Northfield, Graham.A.Williams, Science and Justice, March 2021, <https://doi.org/10.1016/j.scijus.2021.02.006>
15. A comparison of reverse projection and PhotoModeler for suspect height analysis, Liscio, Eugene, Guryn, H., Le, Q., Olver, A., Forensic Science International, Volume 320, March 2021, 110690
16. Automated Reconstruction of Cast-off Blood Spatter Patterns based on Euclidean Geometry and Statistical Likelihood Scott McCleary, Eugene Liscio, Kris De Brabanter, Daniel Attinger, Forensic Science International, December 2020, 110628

17. The Effects of Camera Resolution and Distance on Suspect Height Analysis Using PhotoModeler Olver, Angela, Guryn, Helen, Liscio, Eugene
18. Angle of impact determination from bullet holes in a metal surface
Eugene Liscio, Rabbia Imran, *Forensic Science International* 317 (2020) 110504
19. Accuracy of Digital Ellipse Marking for Bloodstain Pattern Analysis
Moore, C., Liscio, E. *JBPA*, Volume 35, Number 3
20. Evaluating the Morphological and Metric Sex of Human Crania Using 3-Dimensional (3D) Technology
Berezowski, V., Rogers, T. & Liscio, E. , *Int J Legal Med* (2020). <https://doi.org/10.1007/s00414-020-02305-0>
21. Accuracy of Area of Origin Analysis on Textured, Wallpaper Surfaces, Gareth Griffiths, Eugene Liscio, P.Eng. & Dean Northfield, *JBPA*, Volume 35, Number 1, March 2020
22. The Accuracy and Repeatability of Reconstructing Single Bullet Impacts Using the 2D Ellipse Method, Miguel Walters, H.B.Sc.; and Eugene Liscio, P.Eng. *J Forensic Sci*, 2020, doi: 10.1111/1556-4029.14309
23. Observations and Analysis of Controlled Cast-Off Stains, Liscio, E., Patrick Bozek, Helen Guryn, & Quan Le, *Journal of Forensic Sciences*, 2020, doi: 10.1111/1556-4029.14301
24. Determining the Suitability of 3D Laser Scanning for Forensic Footwear Impression Analysis in Sand, Rodrigues, Charmaine and Liscio, Eugene. *Identification Canada*, Volume 42, No. 1, March 2019
3D Area of Origin Tools with Handheld 3D Data. Le Q, Liscio E. *J Assoc Crime Scene Reconstr.* 2019;23:1-10.
25. Determining the Suitability of 3D Laser Scanning for Forensic Footwear Impression Analysis in Sand, Rodrigues, Charmaine and Liscio, Eugene. *Identification Canada*, Volume 42, No. 1, March 2019
26. Accuracy and Reproducibility of Bullet Trajectories in FARO Zone 3D, Liscio, Eugene, Le, Quan and Guryn, Helen. *Journal of Forensic Sciences*, 2019.
27. A Comparative Study between FARO Scene and FARO Zone 3D for Area of Origin Analysis., Quan Le and Eugene Liscio, *Forensic Science International*, Volume 301, August 2019, Pages 166-173
28. 3D Documentation of a Clandestine Grave: A Comparison Between Manual and 3D Digital Methods, Victoria Berezowski MSc, Jason J. Keller & Eugene Liscio. *J Assoc Crime Scene Reconstr.* 2018;22:23-37.
29. Three Dimensional Models Generated by Drone Photogrammetry and by Laser Scanner, Tran, Isabel, Liscio, Eugene, *Identification Canada*, Volume 41, June 2018.
30. The Accuracy and Inter-Examiner Reliability of Point-of-Origin Analysis of Bloodstain Patterns Using 3D Laser Scanning Technique, Chen, Yongu (Sara), Liscio, Eugene. *Identification Canada*, Volume 41, March 2018.
31. Accuracy and Repeatability of Trajectory Rod Measurement Using Laser Scanners, Eugene Liscio, 1,2 P.Eng.; Helen Guryn, 1 H.B.Sc.; and Daniella Stoewner, 1 H.B.Sc. *J Forensic Sci*, 2017 doi: 10.1111/1556-4029.13719
32. Assessing Structured Light 3D Scanning using Artec Eva for Injury Documentation during Autopsy., Sivanandan J, Liscio E., *J Assoc Crime Scene Reconstr.* 2016;21:5-13.
33. 3D Bloodstain Pattern Analysis on Complex Surfaces using The FARO Focus Laser Scanner, International Association of Bloodstain Pattern Analysts, Nathan Kwan, Eugene Liscio and Tracy Rogers, December 2016.
34. Accuracy and Repeatability of the Laser Scanner and Total Station for Crime and Accident Scene Documentation, David Dustin & Eugene Liscio, P. Eng. *J Assoc Crime Scene Reconstr.* 2016;20:57-67.
35. Using a 3D Laser Scanner to Determine the Area of Origin of an Impact Pattern, Dubyk, M., Liscio, E. *Journal of Forensic Identification* 66 (3), 2016 \ 259.
36. A Comparison of the Terrestrial Laser Scanner & Total Station for Scene Documentation, Liscio E, Hayden A, Moody, *J Assoc Crime Scene Reconstruction.* 2016;20:1-8.

37. A Comparison of Bullet Trajectory Rod Measurement Methods, Eugene Liscio, Identification Canada, Volume 39, No. 3, September 2015.
38. 3D Wound Reconstruction using Photogrammetry, Sheryl Spigelski, Eugene Liscio, Identification Canada, Volume 38 No 4 December 2015
39. The Use of 3D Scanning and Comparison Method in the Identification of Shovel Impressions in Soil, Ou Bai & Eugene Liscio, Identification Canada, Volume 38, June 2015.
40. A Preliminary Validation of the Use of 3D Scanning for Bloodstain Pattern Analysis, Eugene Liscio et al., Journal of Bloodstain Pattern Analysis, December 2015 Issue.
41. The accuracy of laser scanning technology on the determination of bloodstain origin, Rebecca Lee & Eugene Liscio, Canadian Society of Forensic Science Journal, November 2015.
42. Suspect Height Estimation Using Laser Scanning Technology, Monique Johnson & Eugene Liscio. (Journal of Forensic Sciences, July 2015).
43. Calculating Point of Origin of Blood Spatter Using Laser Scanning Technology, Nashad Hakim & Eugene Liscio. Journal of Forensic Sciences, March 2015.
44. Guide to Capturing Photographs of Bloodstains for 3D Measurement, International Association of Bloodstain Pattern Analysts, Newsletter, March 2009

Court Testimony/Deposition:

Case: US vs. Lt. Becker : Military Court, Chievres Army Base, Chievres, Belgium, NCIS Case #: 12OCT15-EUNA-00309-7HNA, Judge: Colonel Keane, Testimony on April 26, 2022

Case: Her Majesty the Queen v. Thomas Stevens. Ontario Court of Justice, Information #: 21-302007
Judge: His Honour A. Perron, Testimony on November 17, 2021

Case: Sean Moore v. City & County of San Francisco et al., Deposition over Zoom Meeting on December 14, 2020, Case No.: 3:18-cv-00634-SI

Case: Regina vs. James Henry Wise – Superior Court of Ottawa, OPP# SP14087774
Judge: Justice Kevin Phillips, Testimony Date: November 30, 2020

Case: Regina vs. Dosangh, Raja Singh – Superior Court of Guelph, Case #CR-18-00000552-0000
Judge: Justice Lemon, Testimony Date: July 10, 2019

Case: US vs Dianna Lalchan - Superior Court for the District of Columbia, Case # 2013 CF1 004987
Judge: Ronna L. Beck, Testimony Dates: March 20-21, 2019

Case: People v. Charles Merritt - San Bernardino County Superior Court, Case# FV11404194 / 071304411
Judge: Michael Smith, Testimony Dates: March 12, 2019

Case: South Carolina v. Michael Colucci - Berkeley County General Sessions Court, Case Number: 2016-GS-2603, Deadra L. Jefferson, Circuit Court Judge, Testimony Dates: December 5, 2018

Case: United States vs L.R. Swartz - US District Court for State of Arizona, Tucson, Case Number: CR15-1723 TUC RCC(DTF), Judge: Raner C. Collins, Testimony Date: Nov. 14-15, 2018

Case: United States vs. J. Astarita - United States District Court, Oregon, Portland Div. , Case Number: 3:17-cr-00226-JO, Judge: Robert. E. Jones, Testimony Dates: August 7, 2018

Case: United States vs. J. Astarita - United States District Court, Oregon, Portland Div. , Case Number: 3:17-cr-00226-JO, Judge: Robert. E. Jones, Daubert Hearing Testimony Dates: May 24, 2018

Case: Stamatopoulos vs Harris - Ontario Superior Court of Justice, Case Number: CV-05-CV283449-0000
Judge; Madam Justice Copeland, Testimony Dates: April 17-18, 2018

Case: United States vs L.R. Swartz, -US District Court for State of Arizona, Tucson, Case Number: CR15-1723 TUC RCC(DTF) Judge: Raner C. Collins, Testimony Date: April 12, 2018

Case: State of Colorado vs. Robert Ray - Arapahoe County District Court, Colorado, Case Number: 06CR0697, Judge: Michelle A. Amico, Testimony Date: October 24, 2017

Case: South Carolina v. Michael Slager - Charleston County General Sessions Court, Case number: 2015-GS-10-03466, Judge: Clifton Newman, Testimony Date: November 23, 2016

Case: R. vs James Forcillo - Ontario Superior Court, Toronto, Canada, Judge: Edward Then, Testimony Date: October 27-29, 2015

Case: Ayers v. Billy Shane Harrison - Civil Action No. 2:10-CV-32-RWS, Federal Court, Gainesville, Georgia
Judge: Richard W. Story, Testimony Date: February 7, 2014

Case: Glynnis Salisbury ats Orin Litman - Court File No. 00-768, Superior Court of Justice, Hamilton, Canada,
Judge: Justice Kent, Testimony Dates: October 21st, 2013

Case: State of Indiana vs. David R. Camm - Case No. 74C01-1210-MR-000184, Spencer County Circuit Court, Indiana, Judge: Johnathan Dartt, Testimony Dates: October 1st, 2013

Case: Matthews ats Martinez - Case # CV-00-2301, Superior Court, Brantford, Canada, Judge: Justice Arrell, Testimony Dates: April 28-29, 2008

Work History

Sep 2022-Present

Laurentian University, Adjunct Professor. Mentor and advisor to students in both graduate and undergraduate research topics. Lecturer and advisor.

May 2022 – Present

Developer and owner of Recon-3D iPhone scanning application. Involved in the development, design, testing and support of the application. Provide support to customers, marketing, research, and testing.

Jan 2012 - Present

University of Toronto, Mississauga, Forensic Sciences Program

Adjunct Professor for FSC406H, Introduction to 3D Crime Scene Mapping & Reconstruction.

This course deals with three-dimensional documentation, analysis, and visualization of evidence at crime and accident scenes. Mentor and advisor to several students in both graduate and undergraduate research topics.

Jan 2005 – Present

Owner, ai2-3D, Woodbridge, Ontario

Provide accurate 3D measurement services using 3D scanners, total stations, and photogrammetry. Also provide 3D modeling, reconstructions, animations, and illustrations. Training for law enforcement in 3D Scanning, Photogrammetry, 3D Reconstructions and 3D Visualization.

Jul 2001 – Nov 2007

Husky Injection Molding Systems Ltd., Bolton, Ontario

Project Manager, PET Systems. Responsible for providing applications analysis and technical support to clients. Act as liaison to Engineering and Manufacturing to ensure scope of supply has been met. Review of all measurement, testing and inspection results for acceptance and certification of equipment. Coordinate efforts of team members to ensure successful completion of projects.

Aug 1998 – Jun 2001

GEMCOR, West Seneca, New York, USA

Sales/Service, - Gemcor Support and Services Technologies

Manufacturer of large-scale aerospace equipment for companies such as Boeing, NASA, Aerospatiale. Applications and design suggestions for new model machines. Resolve technical issues in field.

Jul 1995 – Aug 1998

McDonnell Douglas Canada Limited, Toronto, Ontario

Materials and Process Engineering Department - Engineering Metrology Laboratory

Investigate materials/process problems and recommend disposition. Testing, measurement, and calibration of equipment. Research new materials and methods to improve current processing.

Assign chemical analysis and mechanical property tests in the development of new materials/processes.

Education

Sep 1996 - Dec 1997 Humber College, Toronto, Ontario, Canada
Certificate in Quality Assurance, Honours
Date of Completion: December 1997.

Sep 1991 - May 1995 Ryerson Polytechnic University, Toronto, Ontario, Canada
Bachelor of Engineering, Aerospace Engineering
Thesis Project: Drivmatic Riveting Process for Aerospace Assembly
Graduation Date: June 1995.

Professional Organizations

Professional Engineers Ontario
Member since October 1995, License #90456476

Association of Firearm and Tool Mark Examiners
Member since October 2021, Member #8003

International Association of Forensic Security and Metrology (IAFSM)
Past-President (Elected President September of 2012-2016),
Member since January 2010

International Association of Bloodstain Pattern Analysts
Member since October 2016, Member #4473

Association of Crime Scene Reconstruction
Member since March 2018, Member # 1040

Canadian Society of Forensic Science
Member since June 2021

Organizational Scientific Area Committee (OSAC)
Affiliate Member of CSI Group and Invited Guest for BPA Group
May 9-13, 2022

Languages

Conversational Portuguese, Italian and French