



Derek Machens

CURRICULUM VITAE

Precision Analytics LLC | Co-owner

Cellular technology and geolocation analysis | Expert testimony

PROFESSIONAL SUMMARY

Derek Machens is co-owner of Precision Analytics LLC. His work includes cellular records and geolocation analysis, mapping, synchronized evidence presentations, and expert testimony for prosecutors.

He has specialized in cellular technology investigations and geolocation analysis since 2015 and completed more than 166 hours of advanced training in cellular networking, radio frequency technology, historical cellular records interpretation, and geolocation analysis. He has participated in hundreds of real-time cellular tracking operations and historical cellular investigations involving homicides, murder-for-hire plots, kidnappings, assaults, robberies, carjackings, organized criminal activity, and complex federal violent crime investigations involving multiple defendants.

Machens has been qualified as an expert witness in cellular technology and geolocation analysis in federal and state courts. He is a detective in the St. Louis County Police Department Criminal Intelligence Unit and a federally deputized FBI Violent Crime Task Force Officer.

PROFESSIONAL EXPERIENCE

Precision Analytics LLC

Co-owner | Cellular records analysis, geolocation mapping, evidence presentations, and expert testimony.

St. Louis County Police Department

Office of the Chief of Police Criminal Intelligence Unit | January 2019 to present

Detective and federally deputized FBI Violent Crime Task Force Officer.

Designated departmental cellular technology specialist responsible for historical cellular analysis and real-time tracking operations.

Provides investigative support and technical expertise for violent crime, fugitive, and missing persons investigations involving cellular technology and geolocation data.

Uses PenLink, TraX, provider records, geofence warrant returns, and related investigative technologies.

Division of Special Operations Special Response Unit | January 2015 to January 2019

Neighborhood Enforcement Team Leader. Conducted real-time cellular geolocation operations supporting fugitive apprehension and violent crime investigations; integrated cellular geolocation and social media investigative methods into fugitive apprehension operations.

Division of Patrol | June 2010 to January 2015

Assigned to North County, City of Jennings, and City of Fenton Precincts.

St. Louis County and Municipal Police Academy | January to June 2010

EDUCATION

B.A., Criminal Justice | Blackburn College | 2009

EXPERT TESTIMONY

State of Missouri v. Emonne Dillon, Case No. 23-SL-CR03538-01, St. Louis County, MO (2024)

State of Missouri v. Raymond Hardge, Case No. 23 SL-CR03565, St. Louis County, MO (2025)

United States v. Ronald Perkins, Case No. 4:23-mj-09272 (2025)

State of Illinois v. Timothy Dubois Jr., Case No. 2023CF000534, Madison County, IL (2026)

State of Missouri v. Carl Walker Jr., Case No. 24SL-CR01507-01, St. Louis County, MO (2026)

RELEVANT SPECIALIZED TRAINING

LexisNexis - Criminal Investigations Using Cellular Technologies

LexisNexis - Fugitive Mission Planning and Cellular Investigation

LexisNexis - Leveraging Mobile Device Data in Exigent Situations

LexisNexis - Criminal Investigations Using Cellular Technologies – Subject Matter Expert (Call Detail Record and Geolocation Analysis)

LexisNexis – Utilizing Vehicle Data to Enhance Vehicle Investigations

NW3C – Connected Vehicle Investigations

Google Geofencing and Geolocation

PenLink Cellular Analysis

TECHNICAL PROFICIENCIES

Historical call detail record (CDR) analysis; real-time cellular tracking; tower and area dump analysis; timing advance analysis; geofence warrant analysis; pen register / trap and trace interpretation; cellular provider records interpretation; radio frequency and cellular network concepts.

PROFESSIONAL INSTRUCTION

Provided instruction and training to local and state law enforcement agencies, prosecutors, and juvenile offices regarding historical cellular records analysis and geolocation investigations.

AWARDS

Medal of Valor Recipient

Distinguished Service Citation for Valor

Two Meritorious Service Citations

Eight Chief's Commendations

Seven Awards of Excellence

St. Louis Metropolitan Police Department Commissioner's Letter of Commendation

Two Awards for Distinguished Service from the Office of the United States Attorney for the Eastern District of Missouri