

David Hilliard Williams

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Expertise

- Location-Based Services (LBS); SLAM
- GPS Systems; Network-Based Location Determination Systems
- Wireless 911 (E911); NG911 Technology, Processes, Operations, and Funding
- Internet of Things (IoT); Edge Computing; Real-Time Location Systems (RTLS)
- Non-Cellular/Indoor/Sensor-based Location Systems, including: RFID, Wi-Fi/WPS, BLE/Bluetooth, Beacon-based RTLS; NFC/DSRC; RF Fingerprint systems; Wearable systems; Hybrids/Combinations
- Expert Witness Litigation Support, Patent/Intellectual Property Services
- GPS/Cell phone Criminal and Civil Matter Forensics, using CDRs, RTT, PCMD, NELOS, EVDO, Geotab, Paraben, CellHawk, and Cellebrite
- Accident Reconstruction; Accuracy/Drift
- Internet of Things (IoT) Ecosystem (Sensors, Identification, Verification, Authentication, Interfaces, Edge, Network, Cloud, Data Network Management, Data Management, Analytics, Network Topologies, Integration)
- Location & IoT Data Privacy and Security; Location Sharing Policies, Systems/Methods; Device/User ID, Verification, Authentication
- Sensor Design; Sensor System Architecture and Interface Design; Sensor Fusion, Arrays
- Wireless Communications Standards, e.g. Bluetooth/BLE, Zigbee, Wi-Fi, WPAN, etc.
- Microcontroller Design, Sensor Controls Design, IoT Design/Systems Integration
- Channel, Bandwidth Management; Network Design; Path Loss Management
- Location Data Aggregation, Anonymizing
- LIDAR/Radar Data Sourcing; Crowdsourcing
- Indoor Positioning & App Ecosystem Design
- Short/Longer-range Positioning Technologies
- LBS and IoT Enterprise/Consumer Product & Technical Strategy, Design and Buy/Build
- Mobile Devices/Systems Power Management
- Artificial Intelligence (AI), Machine Learning, Virtual/Augmented Reality in Mobile Apps
- Internet of Things (IoT), Cellular IoT (LTE-M, NB-IoT), LAN/PAN (WiFi, BLE), LPWAN (Sigfox, LoRaWAN, Mesh (Zigbee, RFID), Consumer/Industrial/Commercial/Govt. IoT
- Home, Office, and Industrial Automation System Design and Integration; Control System Design, including Remote Management, Monitoring, and Control; User Interface Design (visible, audible, tactile, virtual, augmented, context-sensitive, GUI-based, directional, wearables, implants, holographic, others)
- Health, Wearables Monitoring & Tracking
- Safety and Security, Surveillance Systems, Home Energy Management Systems
- Contactless Payment Systems (Tokens, SEs), Smart Card/Wallet/Purse, Cookies
- Mobile Resource Management (MRM) Tracking and Management; Vehicle, Drone, Fleet/ELD/AOBRD, Worker/Driver, and Freight/Trailer & Asset Tracking/Mgmt.
- Telematics; ITS, Infotainment; Vehicle/Engine/ECM, PGN/SPN Tracking/Monitoring, V2V, V2I, V2N, Vehicle Networks, Ops, and Analytics Ecosystems including SAE standards (J1939, CAN, etc); Driver safety, AI Dashcams
- Connected Cars/Autonomous Vehicles (AV)
- Navigation Systems; PNDs; Geofencing; Route Optimization; Infotainment Apps/Interfaces
- Location-Based/Related Media (eg Ads, Video)
- 2D/3D Map Data, Digital Mapping, Media/Advertising Interfacing/Mgmt, GIS, & IoT IT
- Mobile Social/Business Networking Design
- Location/Context-Centric (Re)engineering
- Identifier-based Authentication, Verification
- SMART location, Home, Wearables; SMART Buildings, Cities; All forms of location-related alerts, notifications, alarms; Barcodes, QR Codes
- Context/Presence-Based LBS & IoT; AI-based location/context determination and utilization
- M2M, Smart Grid/Energy Systems Engr., Network, and IT Process Design Capabilities Assessment; Legacy & AI Geospatial Analysis
- LBS Big Data and Cloud Computing
- Blockchain and Cryptocurrency—Mobile Apps

Professional Summary

David Hilliard Williams is an internationally-known expert in the wireless/mobile location and Internet of Things (IoT) fields and President and Founder of E911-LBS Consulting and E911-LBS Forensics Engineering, LLC. He specializes in wireless and IoT-based product and technology development and implementation, as well as Intellectual Property (IP)/patent and forensics litigation services involving technologies such as Global Positioning Satellite (GPS) systems; Network-based location determination technologies such as TDOA, ECID, and AFLT; Wireless 911 (E911) and Next Generation 911; Real-Time Location Systems (RTLS) including Radio Frequency Identification (RFID) systems, Wi-Fi-based positioning systems (WPS), BLE/Beacon-based location systems, Bluetooth, Near Field Communications (NFC), and alternative RTLS (Ultrasound, Infrared); Wearable Tags/Sensor tracking systems; Zigbee/Mesh networks; Pattern Matching; and various hybrids and combinations, as well as a broad array of IoT sensors and other systems, network (wireline and wireless, all generations), user interface, and technology enablers for management, monitoring, tracking, and control purposes, including in remote control/distributed ecosystems and associated use cases.

Mr. Williams is expert in the full range of business and consumer location-based services (LBS) and IoT applications enabled by these technologies, including safety, security, and intruder detection/monitoring, energy management, vehicle/fleet tracking/management, telematics and vehicle/engine/component/driver monitoring and analytics, local search, navigation systems, presence/context-aware apps, mobile resource management, asset and freight management, wearable tags/sensors, financial/mobile wallet, mobile hospitality/POS systems, supply chain management, family tracking, mobile social and business networking, proximity-based entertainment and leisure, gaming, and intelligent transportation systems.

Mr. Williams has extensive expertise in all aspects of LBS and IoT delivery across the mobile and IoT ecosystems including enabling sensors, network communications, location determination technologies, geofencing design, map data, location data/database management, geospatial platform/Geographical Information Systems, GPS and other chipsets, data management, control system design, remote management/utilization of such control systems, and device, infrastructure and integration provider integration and management. Mr. Williams has developed and implemented industry-leading product and technology solutions for numerous LBS and IoT applications and markets and provides consulting and research services to some of the leading carriers and enterprises in the U.S., Asia, and Europe. His client list includes Apple, AT&T, BJ's Wholesale Club, Draft Kings, Ecobee, Ericsson, FedEx, GE, GM, Geotab, Green Mountain Grill, Google, Heil/3rd Eye, the Houston Police Department, HP/Aruba, Hyundai, the L.A. County District Attorney's Office (both prosecution and Public Defender offices), Launch Labs, Lyft, Macropoint, Motorola, Nextel, NAVTEQ, Overhead Door, Peschke, Prova, Qualcomm, Salesforce.com, Samsara, Samsung, Snap, Sprint, Target, Tegriss, Toyota, Twilio, Uber, Verizon Wireless, VIVINT, Volkswagen, Zillow, and ZIM.

Mr. Williams has successfully served as an expert for plaintiffs, prosecutors and defendants in patent, ITC, and criminal litigation (including assisting State Public Defender entities including California, Florida, Maryland, New York, and Tennessee), as well as both sides of

civil trade secrets, product liability, fraud, and other litigation. He has been deposed in over 75 matters, and has testified 15 times, including [successfully](#) in The Eastern District Court of Texas (winning both infringement and invalidity matters), and in [winning](#) in ITC Court. He has also testified in criminal court, such as State of Texas v. Salomon Campos Jr., and State of Tennessee v. David Swift, winning on behalf of the defendants. **In total Mr. Williams has provided expertise in matters involving over 225 patents and over 50 criminal and civil matters**, including homicide, arson, contract issues, trade secrets, and product liability, with well over 100 reports filed with the PTAB. His credentials in wireless/mobile/IT technologies and associated applications, infrastructure, systems, and enablers are established to the 1980s. Mr. Williams has testified in a variety of district and state courts, before the ITC, and internationally (Canada, Trinidad & Tobago).

Mr. Williams is expert in smart location technology issues in the Internet of Things (IoT), telematics, and connected/driverless car fields, particularly in their utilization of sensor, location and context information through the practical envisioning and design of: consumer/enterprise use matters and associated application and user interface design; sensor design and deployment strategies; process (re)engineering; IT integration; data aggregation, segmentation, analysis, and management; scalability; and security and privacy issues, requirements, collaboration structures, and ongoing management.

Further, Mr. Williams is expert on Big Data, data mining/analytics, the use of Machine Learning and Artificial Intelligence issues associated with location, context, and IoT data, as well as its potential usage in the criminal forensics field. Twelve (12) of Mr. Williams' patents utilize machine learning, digital agents, and various forms of artificial intelligence, including some utilizing virtual reality and augmented reality, as well as blockchain and cryptocurrency enablers.

With over forty (40) years in location, networking/communications, control, and information technology solutions design, selection, implementation and ongoing management, Mr. Williams has extensive experience in the activities and issues needed to get applications to market, including planning and design at the application, system, interface/integration, network, IT, operational and customer-facing levels. He has been published and quoted by leading magazines and newspapers about mobile services, including The New York Times, CBS News.com, The Columbus (Ohio) Dispatch, The Boston Globe, Computerworld, Directions Mag, Mission Critical Communications, Popular Mechanics, and RFID Journal. Mr. Williams has authored five books on wireless location, including *The Definitive Guide to IoT Sensors (In Development)*, *The Definitive Guide to GPS, RFID, Wi-Fi, and Other Wireless Location-Based Services (two versions, third in development)*, *The Definitive Guide to Wireless E911*, and (co-authored) *The Definitive Guide to Mobile Positioning and Location Management*. Mr. Williams has authored dozens of research reports, and tracks and analyzes leading companies in the LBS, IoT, and public safety industries particularly with respect to their product and technology strategies, competitive capabilities, and implementation issues. He is expert on all public policy and technology issues related to emergency services/public safety, location data privacy and security, and LBS and IoT privacy protection policies, systems, and support infrastructure. He opines on location privacy issues in various forums. He is the sole or named inventor on twelve (12) patents, with several more pending, involving mobile location and context, sensors, IoT, and various other technologies and associated

methods, including artificial intelligence (AI), digital agents, and machine learning. Mr. Williams is an expert in the emerging field of context-related AI ecosystems and numerous associated industry disruption applications and use cases.

Employment History

From: 2002 **E911-LBS Consulting; E911-LBS Forensics Engineering (2015+)**

To: Present

Position: *President and Founder*

Provides services across the entire wireless value chain, particularly with respect to technology and business strategic planning and product design, development, implementation, and ongoing management and operations, plus specialized services such IP/Patent litigation associated with Location Based Services and applications, GPS, E911, IoT, RTLS, RFID, Wi-Fi, NFC, BLE/Bluetooth, beacons, & other location technologies and associated ecosystems. Projects include:

- Provided expert witness, technical consulting, and research analysis services with respect to location-based services-related intellectual property/patent protection, licensing, and litigation (details in separate litigation support section).
- Provide forensics expertise in examination of mobile location-related events and associated data for civil and criminal matters (both prosecutor/plaintiff and defense entities). For example, served as mobile location communications networks and computer design expert in State of Tennessee vs. David Swift.
- Developed, implemented, managed, and marketed a portfolio of LBS applications and broader offers for leading North American wireless carrier. Responsible for all dimensions of product lifecycle and associated budgets. Work included the development and launch of several LBS applications including mobile social networking, family tracking, local search, 411 w/ location, and mobile worker, fleet, and asset management. Location technologies utilized include GPS, Wi-Fi positioning, RFID, Bluetooth, Cell ID (CID), ECID, and TDOA. Worked extensively with network engineering to troubleshoot/refine new location-determination infrastructure to address/improve location accuracy, privacy, and security issues.
- Conducted geofencing accuracy compliance analysis for ride-sharing company auditing their driver airport compliance record. Involved extensive use of JSON/GeoJSON records.
- Conducted comprehensive technical and intellectual property analysis of Real-Time Location Systems (e.g. RFID, Wi-Fi

Positioning, Bluetooth, Infrared/Ultrasound, Others) market for European client looking to assert location-related patents.

- Provided technical guidance for mobile payments/wallet startup utilizing RFID, NFC, and other technologies as key location enablers. Identified key issues and redeveloped successful patent application after initial USPTO rejection.
- Conducted technical and intellectual property analysis for Fleet Management/Telematics operator and service provider assessing potential infringement candidates.
- Conducted market research and developed market research on Telematics industry, both overall as well as tailored for specific auto manufacturers.
- Conducted analysis of location aggregation market for client interested in acquisition in that industry space.
- Ghost-wrote comprehensive study on Traffic data collection, processing, and reporting technologies, markets, and associated companies on behalf of ABI Research.
- Provided E911 consulting expertise in support of new spectrum regulatory approval and technical implementation issues for startup carrier.
- Managed the design, collection, and analysis of E911 infrastructure deployment of western region of major wireless carrier. Data collected focused on technical issues associated with TDOA (Time Difference of Arrival) technology implementation, and collection and reporting of location accuracy data for FCC reporting purposes.
- Developed the site map and primary content for the NAVTEQ (now HERE) Network for Developers (N4D) LBS web ecosystem – <http://developer.navteq.com>. Responsible for designing and managing the site map and overall content, identifying key contributors and materials, and utilizing a variety of fragmented information to develop broad and deep technical, digital media and business content to assist various expertise levels of application developers and business management to become intimately familiar with map data, GIS platforms, and LBS applications and underlying technologies and to provide the information and guidance to successfully develop and launch their LBS applications.

- Managed the development of the Nextel (now Sprint/T-Mobile) Location-Based Services strategy. Efforts included market and technical analysis of likely LBS offerings and integrating those findings with Nextel’s broader wireless voice and data strategies. Work included prioritizing applications based on focus group findings, business matter attractiveness, ease of implementation, impact on network infrastructure, and synchronization and integration with GPS terminal and E911 mandate rollout plans. Managed network engineering and consulting team to design network modifications to best support the additional demands of LBS applications and underlying bandwidth-consuming digital media content. Product strategy including researching and incorporating context-aware/presence concepts into product/device and network engineering plans.
- Developed navigation platform strategy for major international auto manufacturer. Assessed direction and technology requirements of in-car and portable navigation device (PND) technologies; developed strategy for in-car navigation platform.
- Developed numerous LBS company research reports using proprietary multi-point “report card” addressing numerous business and technology strategy dimensions and issues.
- Authored multiple books on wireless location, including *The Definitive Guide to IoT Sensors and IoT Use Cases (In Development)*, *The Definitive Guide to GPS, RFID, Wi-Fi, and Other Wireless Location-Based Services (2005/2009 versions, new version in development)*, *The Definitive Guide to Wireless E911*, and (co-authored) *The Definitive Guide to Mobile Positioning and Location Management*.
- Advised numerous small companies and startups such as i360Hygiene, LOCAID, Finder Technologies, Orion GPS, and XYVerify on LBS-related issues to enhance value propositions on business, product, and technology dimensions to enhance attractiveness to potential investors/acquisition candidates.

From: 2009 **AT&T Mobility**

To: 2010

Position: *Senior Product Manager – Enterprise LBS*

Led the development, implementation, and marketing of numerous enterprise location-based services across all sales, marketing, and operational channels. Work included responsibility for all dimensions of product lifecycle and associated budgets. Products managed included telematics, fleet/vehicle management, asset/freight management, and mobile resource management GPS/LBS apps on a

variety of platforms such as Telenav. Played key role in design of company-wide location services product and implementation roadmap.

From: 2007 **AT&T Mobility**
To: 2009
Position: *Consumer LBS Product Realization Manager (Consultant)*
Responsible for the design, development, implementation, and ongoing lifecycle management of several high-profile Consumer LBS applications and associated operational support. Overall application design and implementation responsibilities included AT&T FamilyMap, Loopt Mobile Social Networking, 411 with location, Slifter Local Search, and CaddyHawk Game systems. Work included design, troubleshooting, and implementation of AT&T location-related network, application, user interface, digital media and content delivery, and privacy infrastructure and associated issues such as accuracy and privacy (efforts resulted in patent co-invention).

From: 1993 **Accenture**
To: 2002
Position: *Associate Partner - Communications & High-Technology Strategy; Information & Technology Strategy practices*
Responsible for development of wireless location practice. Led development of business, technology, and product strategies for numerous communications and technology-centric companies looking to enter new markets. Specialized in new product design, development, and implementation, as well as network infrastructure design need to support next generation, high bandwidth-consuming digital media content and associated infrastructure. Efforts included assisting AT&T (re)enter local service, (then) Bell Atlantic launch long distance services, (then) GTE design and implement Intelligent Network and High Value Network services, Nextel (later part of Sprint, and now T-Mobile) develop their location-based services product strategy and enabling network and IT architectures, and Omnipoint (later part of T-Mobile) network integration strategy, as well as leading the design and implementation of voice and data communications networks and associated data management capabilities in numerous industries including communications, computer, transportation, hospitality/retail, energy, agriculture, and banking/financial services. Worked with utilities such as Ameren, Georgia Power, and Duke Energy to identify strategic opportunities utilizing technology and communications in utility-associated infrastructure and other capabilities.

From: 1991 **Booz Allen & Hamilton**
To: 1993
Position: *Senior Associate – Information Technology Practice*
Provided and led consulting services for communications industry and other Information Technology-intensive companies in

developing technology strategies for addressing new marketing opportunities and internal operational issues.

From: 1987 **Deloitte Consulting (Originally Touche Ross)**
To: 1991
Position: *Senior Manager*
Provided consulting services for technology-intensive companies in developing business and product strategies for addressing new marketing opportunities and internal operational issues.

From: 1983 **Hughes Aircraft Company**
To: 1985
Position: *Electrical Engineer – Radar Development*
Microcomputer and digital system design engineer on the F-15 fighter radar system as part of analog to digital platform conversion and associated tracking and control systems design. System involved designing multi-microprocessor-based systems to interface to/wide array of on-board, ground/carrier control, and other in-flight communications/control sensors/sensor arrays and systems.

Litigation Support Experience

Date: 2025-2026 **Baker Botts**
Matter: Samsung
Project: Providing Ex Parte Re-examination support on multiple patents involving beacons and geofencing in urban environments

Date: 2025-2026 **Jenner & Block LLP; Finnegan, Henderson, Farabow, Garrett & Dunner, LLP**
Matter: General Motors, Toyota
Project: Providing expert consulting, claim construction, and telematics and associated expertise in a variety of identification and verification vehicle infotainment and telematics-related patents. Deposition.

Date: 2025-2026 **Kirkland & Ellis LLP**
Matter: Confidential (Vehicle Telematics, AI Dash Cameras)
Project: Provided technology and comparative product benchmarking expertise with respect to AI-enabled dash cameras and associated vehicle safety and driver behavior monitoring, alerting, and correction. Report, Deposition. Testimony.

Date: 2024-2026 **DLA Piper**
Matter: Home Depot
Project: Providing technology/consulting expertise with respect to geofence-based advertising/marketing platforms. Report.

Date: 2024-2026 **Ellis & Winters**

- Matter: Launch Labs
Project: Providing expert consulting and expertise in IPRs involving advertising-related identifiers in a variety of media. Report, Deposition.
- Date: 2024-2026 **Percy Squire Co. LLP**
Matter: Peters Broadcasting Engineering
Project: Providing consulting and communications engineering expertise in breach of contract suit involving construction of cell towers. Report.
- Date: 2025 **Wolf, Greenfield & Sacks, P.C.**
Matter: Google
Project: Provide expert assistance and declarations in Ex Partes Reexamination of multiple patents involving mobile location access rights involving multiple devices.
- Date: 2019-2025 **Lynch Thompson LLP**
Matter: Heil/3rd Eye
Project: Provided technical/engineering expertise in trade secrets matter involving Internet of Things (IoT), RFID, Telematics, Vehicle Smart Sensors and Cameras, Big Data, and Edge computing for waste vehicle manufacturer. Report and Deposition.
- Date: 2023-2025 **Buchanan**
Matter: Google
Project: Providing expert consulting, support, and declarations for 6 patents/4 groups involving indoor/outdoor location, signal strengths, RF fingerprinting and grid point analysis; use of network calibration data in location determination; and incorporating path loss with calibration, fingerprinting, and location determination. Reports and Depositions.
- Date: 2024 **Tesser Grossman LLP**
Matter: Matthew Patterson
Project: Provided expert consulting, analysis, and expertise in trade secrets arbitration matter regarding truck stop mobile and backend systems. Report and Deposition.
- Date: 2023-2024 **Multiple**
Matter: The Tradition
Project: Provide expertise in analyzing location records in serial murder-related civil cases in senior living facilities. Report.
- Date: 2019-2024 **Law Offices of Ernesto Gamez, Jr., P.C.**
Matter: State of Texas vs Salomon (“Sonny”) Campos, Jr.
Project: Provided cell phone and Google Timeline forensics analysis on behalf of person accused of homicide. Testimony.

- Date: 2023-2025 **Fisher Broyles**
Matter: Tegriss
Project: Providing expert analysis and declarations for Patent Owner of innovative system for life safety-related equipment inspections, testing, and maintenance facing IPR before the PTAB. Report and Deposition.
- Date: 2023-2024 **Baker Botts**
Matter: Motorola
Project: Providing expert support, analysis, and declarations for IPR matters involving prioritization of communications messages in overtalk and similar situations. Report and Depositions (2).
- Date: 2022-2025 **Spragins, Barnett & Cobb**
Matter: State of Tennessee vs. David Swift
Project: Provided expert consulting, analysis, and testimony in murder and related charges case. Provided both mobile phone and computer-related forensics analysis of victim and accused. Found Not Guilty in murder-related charges (other charges dismissed). Testimony.
- Date: 2022-2025 **James Denison**
Matter: UTTO
Project: Providing expert consulting, analysis, and declaration for matter involving underground location determination. Report and Deposition.
- Date: 2021-2025 **Wittels Law**
Matter: Various Employees vs. NY Paving
Project: Providing Telematics/GPS/location-related expert consulting, analysis, and reports for class employment-related case regarding underpayment of hours worked. Report and Deposition.
- Date: 2023-2025 **Baker Botts**
Matter: Tile
Project: Providing expert consulting, support, analysis, declarations, and testimony for IPR matter for patent involving systems and methods for finding lost or stolen property. Report, Depositions (2) and Testimony.
- Date: 2023 **Greenberg Traurig, LLP**
Matter: Hyundai
Project: Provided expert consulting, support, and declarations regarding 3 IPR matters involving technologies associated with service information about/using external registration destination facility(s), map sizing and scaling, and navigation services involving waypoints, and route guidance.

Date: 2023 **Jenner & Block LLP**
Matter: Uber
Project: Provided expert consulting, support, and declarations for matter involving Taxi/ride sharing systems and methods. Report.

Date: 2022-2023 **Vorys**
Matter: BJ's Wholesale Club
Project: Provided expert consulting, support, and declarations for matters involving location-related in-store ordering, fulfillment, and customer service aspects of e/m-commerce services. Report and Deposition.

Date: 2023 **Finnegan, Henderson, Farabow, Garrett & Dunner, LLP**
Matter: Google
Project: Provided expert consulting, support, and declaration work involving using video to direct users to points of interest. Report.

Date: 2023 **Wilson Sonsini**
Matter: Rocateq
Project: Provided expert consulting, support, and declaration work involving geofencing and connected shopping cart technology and applications IP.

Date: 2023 **Finnegan, Henderson, Farabow, Garrett & Dunner, LLP**
Matter: Google
Project: Provided expert consulting, support, and declarations for IPR matters involving directions, video, smartwatches, and wearables/spatial orientation detection. Report.

Date: 2023 **Foley & Lardner LLP**
Matter: VIVINT
Project: Provided expert consulting, support, and declaration for IP matter involving location-based home monitoring. Report.

Date: 2023 **Baker Botts**
Matter: Textron
Project: Provided expert consulting, support, and declaration for IP matter involving geofencing techniques. Report.

Date: 2022-2023 **Kilpatrick Townsend & Stockton LLP**
Matter: Apple
Project: Provided expert consulting, support, and reports for IPRs, invalidity and non-infringement proceedings involving eight (8) patents involving sharing of location information between multiple devices for a variety of use cases. Six IPRs instituted. Reports and Depositions (2 depositions covering 6 IPRs).

- Date: 2022-2023 **Venable LLP**
 Matter: Verizon Wireless dba Cellco Partnership
 Project: Provided expert consulting, support, and declaration for IPR matters involving georeferencing and messaging techniques.
- Date: 2022-2023 **Arnold & Porter**
 Matter: Samsung (2 matters)
 Project: Provided expert consulting, reports and witness work on matters involving delivery of various media content utilizing geofences.
- Date: 2022-2023 **Hall Griffin**
 Matter: Ben's Asphalt
 Project: Provided technical expertise in assessing technical aspects of telematics breach-of-contract lawsuit.
- Date: 2022-2023 **Wolf, Greenfield & Sacks, P.C.**
 Matter: Snap
 Project: Providing expert consulting, support, and report for IPR matter involving social-based location, mapping, matching, and display technologies. Report and Deposition.
- Date: 2022-2023 **Dreifuss Bonacci & Parker**
 Matter: Pacific Controls Inc.
 Project: Providing expert consulting, report, and testimony regarding contractual dispute between Telematics Service Provider and equipment manufacturer. Report, Deposition and Testimony.
- Date: 2021-2022 **Greenberg Trauig**
 Matter: HP Enterprises, Aruba
 Project: Providing expert consulting, report, and testimony in support of non-infringement and invalidity analysis in EDTX matter involving beacons/beaconing technologies, methods, and associated systems. Reports and Depositions (2).
- Date: 2021-2023 **Keker, Van Nest & Peters LLP**
 Matter: Google, Ecobee, and VIVINT (v. Ecofactor) (WDTX)
 Project: Provided/ing expert consulting, report, and testimony in support of invalidity analysis involving HVAC remote monitoring and control and associated sensors, systems, and communications capabilities. Report, Deposition and Testimony.
- Date: 2021-2022 **Baker Botts**
 Matter: Lyft (multiple matters)
 Project: Providing expert consulting, support, and report for matters involving location-related applications technologies including GPS, Bluetooth, Wi-Fi positioning, RFID, and road sensors/readers. Reports and Depositions.

- Date: 2022 **Winston & Strawn LLP**
Matter: ZIM Integrated Shipping
Project: Provided expert consulting in EDTX invalidity and non-infringement case involving method and apparatus for shipping information patents.
- Date: 2020-2021 **Lowe Graham Jones**
Matter: Green Mountain Grill (IoT Connected Grill) (ITC Court)
Project: Provided expert consulting, report, and testimony in ITC case involving Internet of Things (IoT), remote monitoring and control, cloud services, and various short-range communications technologies. Involved non-infringement, DI, Invalidity, and Inventorship. Report, Deposition and Testimony.
- Date: 2021 **Munger, Tolles & Olson LLP**
Matter: Google
Project: Provided expert consulting and support for EDTX matter involving invalidity/non-infringement of NFC and related smart cards and payment systems and associated capabilities such as Secure Elements.
- Date: 2021 **Jackson Walker L.L.P.**
Matter: Prova
Project: Provide expert consulting, support, and report for IPR involving buyer verification/tracking and inventory management/tracking utilizing RFID technology.
- Date: 2020-2023 **Latham & Watkins LLP**
Matter: Overhead Door (OHD-Garage Door Manufacturer) (ITC Court)
Project: Provided expert consulting, report, and testimony in ITC case involving Internet of Things (IoT), remote monitoring and control, and various short-range communications technologies. Report, Deposition and Testimony in ITC court. Support in Customs and Enforcement.
- Date: 2020-2021 **Ropes & Gray LLP**
Matter: Target
Project: Providing expert consulting, support, and report for IPRs for several patents involving short-range communications technologies and associated identification and location determination methods and techniques including Bluetooth, RFID, and Wi-Fi. Reports and Depositions seven (7) involving nine (9) patents.
- Date: 2020-2022 **Baker Botts**
Matter: Draft Kings
Project: Providing expert consulting, support, and report for IPRs for several patents involving validating gaming customers location in

appropriate online gaming jurisdictions/geofencing. Reports and Reports and Depositions (2)

- Date: 2020 **Baker Botts**
Matter: Lyft
Project: Provided expert consulting, support, and report for IPRs involving Intelligent Transportation systems, geofences, and location technologies including GPS, Bluetooth, Wi-Fi positioning, RFID, and road sensors/readers. Report and Deposition.
- Date: 2020-2023 **Finnegan & Henderson**
Matter: Google (multiple)
Project: Providing expert consulting, support, and reports for IPRs involving user experience sharing, software registration, and device/user tracking involving a variety of location technologies.
- Date: 2018-2020 **Lawgivers (Trinidad and Tobago)**
Matter: A&V Oil and Gas
Project: Provided expert support, report, and testimony in arbitration matter involving government of T&T. Focused on (in)accuracies of GPS-based vehicle tracking system relative to a variety of key events. Report, Testimony at trial.
- Date: 2019-2020 **Perkins Coie**
Matter: Zillow
Project: Provided expert support, report, and deposition for non-Infringement matter for major real estate services firm and associated subsidiaries involving a wide array of location determination technologies on smartphones. Report and Deposition.
- Date: 2019-2020 **Baker Botts**
Matter: Lyft
Project: Provided expert support, report, and deposition in support of Claim Construction brief associated with non-infringement matter.
- Date: 2016-2021 **Sterne Kessler Goldstein Fox**
Matters: Google (Multiple matters); Google (Nest, Multiple matters)
Projects: Providing expert support, reports, and deposition for several IPRs of location/context-related patents on behalf of leading Internet services company utilizing a wide variety of communications and location technologies. Reports and Depositions.
- Date: 2013, **XYVerify (3)**
2019/2020 Patent Re-Submission and Approval; Patent Application Creation
Projects: (Re)wrote patent applications for LBS/financial verification system using multiple location determination methods including RFID, Bluetooth, WPS, and GPS. Efforts enabled patents to be approved

after initial rejection by USPTO.

Date: 2013-2026 **Civil and Criminal Forensics**
Matters: Various
Project: Provided/Providing cellphone, vehicle/telematics, specialty device, and computer-based location forensics expertise in over 50 criminal and civil matters involving numerous location determination technologies and associated applications and systems. Criminal matters include homicide, attempted murder, assault (multiple types), arson (building and land), armed robbery, breaking and entering, assault (various types), and property crime. Civil matters include trade secrets, product liability, accident liability, fraud, breach-of-contract disputes, and employment matters.

Applications/Platforms for criminal and civil forensics analysis include Airtags, cellular records, 911 records, Facebook/Instagram/Messenger/social media apps, Google/search, Google tracking apps (e.g. Timeline, others), telematics/vehicle tracking systems (e.g. Verizon Connect, others), specialty GPS (e.g. GPS ankle bracelets, specialty devices) surveillance and safety systems, smart home systems, aviation, vehicle infotainment systems, and connected cars, Expert/knowledgeable in numerous forensic technologies, tools, and accident/incident reconstruction methods including CDR, NELOS, PCMD, RTT, EVDO, Cellebrite, Paraben, Google Earth/Timeline, and Hawk Analytics/CellHawk, as well as specialized knowledge on iOS and Android smartphone location determination techniques and data collection, analysis, and management of all types including KML/KMZ, (Geo)JSON, CSV, (E)WKT/WKB, Shapefile, ESRI, and other GIS vector/raster systems, technologies, formats, and models.

Date: 2019 **Sterne Kessler Goldstein Fox**
Matter: Volkswagen
Project: Provided expert support for IPR involving Location-Based Messaging in automotive related use matter/environments.

Date: 2017-2018 **Finnegan & Henderson**
Matter: Fed Ex
Project: Provided expert support, consulting, reports, deposition, and trial testifying for infringement and district court invalidity proceedings on behalf of leading transportation/shipping company in The Eastern District Court of Texas. Report, Deposition and Testimony.

Date: 2017-2018 **Polsinelli**
Matter: Uber
Project: Provided expert support and reports for Trade Secrets matter involving major shared transportation provider. Report.

- Date: 2017-2018 **Renner Otto**
Matters: Macropoint; Timekeeping Systems Inc.
Projects: Providing consulting, expert services, report and deposition in invalidity matters for transportation and employee tracking patents. Report.
- Date: 2016-2018 **Paul Hastings (2 Matters)**
Matters: Samsung – Script Security Solutions, Iron Oak Technologies
Project: Provided expert services for Inter Partes Reviews (IPR) of multiple location, safety, and security patents on behalf of major telecommunications equipment and services provider, involving portable security systems and determining/deciding upon alternative communications networking paths.
- Date: 2016-2017 **European Firm**
Matter: Patent Infringement/Claim Chart Analysis
Project: Provided consulting, market analysis, and claim chart development for patent holder involving RTLS-related repeater technologies, particularly using WPAN/Zigbee networks.
- Date: 2016-2017 **Baker Botts**
Matter: Twilio
Project: Provided location/E911-related expert services, report, and deposition for IPR of mobile registration patent on behalf of Voice & Video, Messaging, and Authentication APIs provider. Consultation on Report, Deposition
- Date: 2016 **Los Angeles District Attorney’s Office**
Matter: People v. Dawud Abdulwali
Project: Provided expert services on location technologies used to identify and trace accused arsonist on behalf of L.A. District Attorney’s (Prosecutors) office. Report.
- Date: 2016-2017 **Fitzpatrick, Cella, Harper & Scinto**
Matter: Geotab
Project: Providing expert support, reports, and deposition for infringement defense of multiple asserted patents on behalf of fleet management/telematics provider in EDTX. Report and Deposition.
- Date: 2015-2016 **The Ogg Law Firm PLLC**
Matter: City of Houston Police Department
Project: Provided expert services/testimony regarding veracity of Automatic Vehicle Locator (AVL) systems in officer suspension matter. Report and Testimony.
- Date: 2015-2016 **Sterne Kessler Goldstein Fox**

- Matter: VIVINT
Project: Providing expert support, reports, and deposition for IPR involving several location-related patents for home security/energy company. Report and Deposition.
- Date: 2015 **Hogan Lovells**
Matter: Apple
Project: Provided expert support for multiple location-related patent Inter Partes Review (IPR) and infringement proceedings for leading mobile platform, applications, and services provider.
- Date: 2015 **Thompson Hine LLP**
Matters: Macropoint
Project: Provided expert support for patent litigation efforts involving fleet management devices, software, and services. Report and Report and Deposition.
- Date: 2013-2014 **Williams & Connolly**
Matter: State of Maryland
Project: Provided expert services in assessing validity of GPS tracking bracelet/system in parole violation matter. Report.
- Date: 2013-2014 **Cravath, Swaine & Moore**
Matter: Qualcomm
Project: Provided expert litigation support, technical consulting, and advisory services in Anti-Trust matter regarding location services technologies, platforms, and standards.
- Date: 2014 **Patterson Thuente Pedersen, P.A.**
Matter: Kaspersky Internet Security
Project: Provided expert litigation support and technical consulting in patent countersuit involving internet security services. Report.
- Date: 2014 **Sullivan & Cromwell LLP, others**
Matter: Peschke
Project: Provided expert support and technical consulting in location services infringement patent dispute involving interactive mapping applications. Report and Deposition.
- Date: 2012-2013 **Covington & Burling**
Matter: Samsung (ITC Court)
Project: Provided expert litigation support and technical consulting and advisory services in International Trade Commission matter.
- Date: 2011-2013 **Connolly Bove Lodge & Hutz**
Matter: Enovsys
Project: Provided expert litigation support and technical consulting and

advisory services for pursuit of LBS patent royalties and infringement settlements.

Date: 2011-2013 **Voxson**
Matters: Various
Project: Provided expert litigation support and technical consulting and advisory services for pursuit of E911 and LBS patent infringement royalties and settlements.

Date: 2010-2012 **Morrison & Foerster LLP**
Matter: Cellco Partnership (dba Verizon Wireless)
Project: Provided expert advisory and report services in support of IPR re-examination process of E911 and LBS patents. Reports.

Date: 2011-2012 **Dovel & Luner**
Matter: TrackBeam
Project: Provided market/technical consulting, expertise, and research analysis of LBS patents to identify potential licensing candidates.

Date: 2011 **SNR Denton**
Matter: Wavemarket
Project: Provided market and technical consulting and advisory services for defense of LBS patent lawsuits.

Date: 2010 **State of New Jersey**
Project: Provided wireless location consulting expertise in development of economic growth strategy for State of New Jersey.

Date: 2007-2008 **General Electric**
Project: Provided consulting research and guidance on LBS and E911 technology, GE-owned patents, prior artwork, technology direction.

Education

<u>Year</u>	<u>College/University</u>	<u>Degree</u>
1987	The University of Texas at Austin (1 st in graduating class)	MBA, Information Systems Management
1983	Purdue University, West Lafayette, Indiana (Top honors; Tau Beta Pi, Eta Kappa Nu)	BSEE, Digital System Design emphasis

Patents & Trademarks

- "Method and apparatus for providing mobile social networking privacy." (U.S. Patent Number 8,613,109, issued on December 17, 2013).
- "Systems and methods of using wireless location, context, and/or one or more communication networks for monitoring for, preempting, and/or mitigating pre-identified behavior." (U.S. Patent Number 10,477,342, Issued November 12, 2019).

- “Systems and methods for monitoring for and preempting pre-identified restriction violation-related behavior(s) of persons under restriction.” (U.S. Patent Number 10,497,242, Issued December 3, 2019).
- “Systems and methods for providing location-based security and/or privacy for restricting user access.” (U.S. Patent Number 10,555,112, Issued February 4, 2020).
- “Systems and methods for developing, monitoring, and enforcing agreements, understandings, and/or contracts.” (U.S. Patent Number 10,853,897, Issued 12/1/2020).
- “Systems and methods for monitoring for and preempting pre-identified restriction violation-related behavior(s) of persons under restriction.” (U.S. Patent Number 10,861,307, Issued December 8, 2020).
- “Systems and methods for monitoring for and lowering the risk of addiction-related or restriction violation-related behavior(s).” (U.S. Patent Number 11,388,546, Issued July 12, 2022).
- “Systems and methods for monitoring for and preempting the risk of a future occurrence of a quarantine violation.” (U.S. Patent Number 11,412,353, Issued August 9, 2022).
- “Dynamic and adaptive systems and methods for rewarding and/or disincentivizing behaviors” (U.S. Patent Number 11,636,941, Issued April 25, 2023).
- “Systems and Methods for Conducting/Defending Digital Warfare or Conflict” (U.S. Patent 12,096,308, Issued September 17, 2024)
- “Systems and methods for monitoring for and preempting the risk of a future occurrence of a quarantine violation” (U.S. Patent 12,289,654, Issued April 29, 2025)
- “Systems and methods for monitoring for and lowering the risk of addiction-related or restriction violation-related behavior(s).” (U.S. Patent Number 12,342,240, Issued June 24, 2025).
- “Systems and Methods for Proactively Preempting/Mitigating Anxiety-Related Behaviors and Associated Issues/Events” (U.S. Patent 12,470,894, Issued November 11, 2025).
- Numerous other patents pending, including involvement of AI power management and conservation, M2M behavioral avatars; content validation and rating systems, space agriculture and medicine, and various AI enablers. Three (3) Trademarks awarded.

Publications

Books:

1. The Definitive Guide to IoT Sensors (In development)
2. The Definitive Guide to AI-Enabled IoT Use Cases (In development)
3. The Definitive Guide to GPS, RFID, Wi-Fi, and Other Wireless Location-Based Services (2 versions, plus version in development)
4. The Definitive Guide to Wireless E911 (2004 and 2005 versions)
5. The Definitive Guide to Mobile Positioning and Location Management (Co-authored)

Articles/Quotations:

1. LinkedIn profile. December 2025. Impending Disaster: What if GPS Timing Goes Down?

2. Medium.com (Predict). January 31, 2023. “ChatGPT and Its Impact on Criminal Forensics (and Criminals)”
3. Medium.com. October 3, 2022. “What if GPS Fails?”
4. Location Data Privacy posts/blog. Ongoing at www.E911-LBS.com.
5. Linked In. March 3, 2020. “Facial Recognition: Good, Bad, or Ugly?”
6. The Columbus Dispatch. February 17, 2017. “Experts: GPS monitors couldn’t save OSU student’s life”
7. E911-LBS.com. May 2012. “The Pacifier Generation – How Wireless is Impacting Our Society”
8. Nbizmag.com. Summer 2008. “How Will the Convergence of LBS Technologies Affect Business?”
9. Directions Magazine. November 30, 2005. “The Deadline for the E911 Mandate Approaches... Where Do Things Stand?”
10. Computerworld. May 23, 2005. “Beyond The Supply Chain: The Impact of RFID on Business Operations and IT Infrastructure”
11. RFID Journal. June 12, 2005. “IT’s Impact on RFID”
12. Directions Magazine. July 29, 2004. “The Strategic Implications of the Wal-Mart RFID Mandate”
13. Directions Magazine. February 25, 2004. “RFID-Hot Technology with Wide-Ranging Applications”
14. WirelessDevNet.com. 1/30/2003. “It’s The (Location-Based) Applications – Stupid!”

Languages/Tools

- Grok, ChatGPT, Gemini/Flow, VEO, other AI tools
- C/C++, Java, Basic, Cobol, Fortran, Pascal, APL, Assembly, Python, Others
- CDRs, including NELOS, PCMD, RTT, EVDO; Cellebrite, Paraben, Google Earth/Timeline, Hawk Analytics/CellHawk, various Telematics-related applications/systems such as Geotab, as well as specialized knowledge on iOS and Android smartphone location determination techniques.
- AI-enabled forensics analysis (emerging area).
- Analysis of geofence warrant.
- Data collection, analysis, and management of all types including KML/KMZ, (Geo)JSON, CSV, (E)WKT/WKB, Binary, Shapefile, ESRI, and other GIS vector/raster systems, technologies, formats, and models.

Associations and Achievements

- IEEE, NENA, APCO. Certified in Emergency Management Response (CERT)