Michael Nranian

Expert in Intellectual Property & Product Liability

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Education

Wayne State University
MS Electrical Engineering, 1991
BS Electrical & Computer Engineering, 1993
BS Chemical Engineering, 1984
Juris Doctor, 1999

University of Michigan
MBA, 2002

Qualifications: **Six Sigma Black Belt – American Society for Quality & International Quality Federation; Licensed Professional Engineer; Certified Project Management Professional; Eagle Scout; Accident Reconstruction – Northwestern University; Active Secret Security Clearance; Certified Information System Security Professional CISSP, Security+, Network+, SANS 566 Security Controls GIAC, Certified Authorization Professional - Cyber System Security Engineer, Admitted to State Bars of Michigan & Texas, U.S. Supreme Court, United States Patent and Trademark Office**

INTELLECTUAL PROPERTY SERVICES AND EXPERIENCE INCLUDE:

- **Evaluation of patent infringement/non-infringement, and patent validity/invalidity, including America Invents Act, and 101, 102, 103, 112 and prior art arguments including analyses under literal infringement and the under the doctrine of equivalents. Prosecution history estoppel.**
- **Development of claim charts for Markman hearings, ITC & federal cases, Inter Partes reviews. Expert reports, depositions, hearing and trial testimony.**
- **Technology standards boards and licensing authorities, antitrust/DOJ, technology development and transfer, patents, trademarks, trade secrets, copyrights, data rights, trademark infringement/dilution, unfair competition/trade, false/deceptive advertising Lanham Act, Class Actions, etc.**
- **Georgia-Pacific factors analyses for determining reasonable royalty for plaintiff or defense. Willful infringement arguments.**
- **Development and Analysis of Markman briefs, claim charts, conducting prior art searches, and the analyses of patent file wrappers.**
- **Discovery and motion practice, summary judgment proceedings, evidentiary hearings, motions in limine, opposition and reply briefs.**
- **Patent Cooperation Treaty Applications, U.S. applications, international filings. Post-Grant Review, Inter Partes Review, Patent Trial & Appeal Board.**
- **Prior art/patentability research in technical literature, publications, product specifications, and dissertations to analyze validity and obviousness.**
- **Litigation support and technology education in patent disputes, Federal Cases, ITC cases, & re-examinations, derivation proceedings, prior user rights.**
- **Represent clients in all aspects of electrical, chemical, software, computers, microprocessors, & automotive components/systems for all aspects of intellectual property/litigation. Cellular, telecommunication, GPS/navigation, mobile, telematics, info/data/transmission, Human Machine Interfaces, etc.**
- **Deposition, hearing and trial experience in state and federal jurisdictions throughout the United States.**
  Cases include: Magna v. TRW; Bradley v. Fontaine Trailer; ATI; Remy v. WAI (ITC); Horizon v. Continental (IPR); Stratos v. Volvo; IQASR v. Wendt; Mobileye v. Picutup; Karma v. Lordstown; Speedguage v. Inthinc; Voxx v. JSI; Magna v. SMR; (MPEG); Stragent v. Volvo; Dorman v. Paccar & mul other cases

PRODUCT LIABILITY SERVICES AND EXPERIENCE INCLUDE:

- **Direct participation in more than 300 litigation cases with in-depth evaluations of multiple high-dollar claims and lawsuits. Forensic Analyses.**
- **Expert witness reports, inspections, accident reconstruction, photographs, occupant kinematics & injury causation, component and system analyses.**
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- **All areas of discovery, preparing and/or obtaining sets of requests for production, interrogatories, requests for admissions. E-discovery.**
- **Preparation of other witnesses prior to their depositions and trial testimonies, including all potential cross-examination questions. Forensic Analyses.**
- **Product Liability Law, indemnification, injury thresholds and regulatory requirements, including all FMVSS interpretation/compliance.**
- **Optical/vision systems, warning systems, forward collision/lane departure warning, medical devices, wheelchairs, and handicap assistance devices.**
- **Automotive, truck (including tractor-trailer) systems, sensing systems, including all crash recorders (Direct design experience in these modules for over 20 years). Accident reconstruction and analysis of crash pulse information. Electrical, electronic, electro-mechanical components and systems.**
- **Design validation plans and reports, failure modes and effects analyses, product prove-out, design verification, reliability/durability analyses/assessment.**
- **Analysis of component defects including seats, seatbelts, curtains, airbags, roof crush, structure, doors, all modes of sensors, crashworthiness.**
- **Electrical systems and architecture, fire cause and origin, lidar/radar, sensors, camera/optical/vision, warning & diagnostic system & fault code analyses.**
- **Insurance law, no fault insurance law, subrogation. Automotive domestic/international OEMs, customers, suppliers, manufacturing, operations.**
- **Field Analysis of Product Liability Issues and the Implementation of Design Changes to Reduce Exposure. Forensics. Analysis of Alternative Designs.**
- **Regulatory pre-emption arguments, express, implied, or fact-specific analyses. Workplace safety/standards/polices, Fall Protection, - OSHA, ANSI, etc.**
- **Depositions, Expert Testimony, Trial Testimony.** *FCA v. Lear, Delphi - Please see Judicial Experience/Testimony History on website (too much to list here).*

Summary of Professional Experience

Principal - AUTOMOTIVE DESIGN ANALYSIS, South Lyon, MI - Technical consulting practice conducting objective, expert analysis, research, and investigation of all aspects of Intellectual Property; Patents, Products and Technologies; and Product Liability, defect investigation, Regulatory compliance. Forensic Analyses.
TARDEC/TACOM - U.S. Army, Warren, MI – Cyber Security- Computer Engineer Direct. IP - Invention disclosures/patents/contracts. (GTA & Alion contractual).
Associate, Intellectual Property - Vivacqua Law, Ann Arbor, MI - Represent clients in all intellectual property aspects of electrical, chemical, software, and automotive.
Principal Systems Engineer – TACOM - U.S. Army, Warren, MI - Conduct Systems Engineering/ Manage Cross-Functional Teams. DoD contracts. Consult via Raytheon
Risk Analysis/Decision Analysis Lead - General Dynamics, Sterling Hts., MI - Decision analysis, trade studies, systems engineering, risk analysis, & mitigation.
Intellectual Property Litigation Associate, Dechert LLP, Austin, TX - Represent clients in all aspects of electrical, chemical, software, and computers involving all aspects of intellectual property, including licensing, USPTO matters, joint development agreements, contracts, opinion work, infringement analyses, standards boards, copyrights, trade secrets, & antitrust issues. Discovery, motion practice, trial/ settlement procedures. Cases include Lucent/MPT v. Gateway MPEG proceedings, Apple Computer-Lucent Licensing negotiations, Tendler v. Onstar, and Acer/Gateway v. Hewlett Packard International Trade Commission litigation.
Design Analysis Engineer/Technical Specialist/Engineering Manager, FORD, Dearborn, MI - Technical analysis of vehicles, systems, components, and diagnostics. Act as corporate representative and expert witness; testify in trials and depositions. Conduct accident investigations and prepare expert witness reports and responses to requests for discovery. Expert in FMVSS, ECE, regulatory, due-care, corporate standards, warnings, SAE and NHTSA publications, information for NHTSA inquiries, recalls, notices, vehicle diagnostic, OBDII interfaces, vehicle bus interfaces, communication protocols, human machine interface, analysis/interpretation of electrical components, system information stored in electronic crash sensors, diagnostic modules, system modules. Lead design, development, testing, and implementation of advanced-technology passive/active restraint systems. Conducted numerous (hundreds) crash, sled, and component tests. Developed design verification plans & reports, failure modes & effects analyses, product & production validation plans, and then develop the products & systems to meet these requirements. Quality control/assurance.
Senior Project Engineer, General Motors, Troy, MI - Design, development, testing, and release of electrical system, software/algorithm, sensing, and airbag and airbag suppression systems for all GM truck lines. FMVSS, ECE, corporate specifications and design standards, FMEA, DVPR, control plans, and Due-Care requirements.
Senior Project Engineer, AlliedSignal, Sterling Hts., MI - Managed European, Pacific Rim, & domestic programs. Design and development of electrical systems & components, airbag modules, sensors, and airbag systems. Developed statements of work and comprehensive system design/test requirements, contracts/subcontracts.

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ADDITIONAL INFORMATION

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- **Automotive, truck (including tractor-trailer) systems, sensing systems, including all crash recorders (Direct design experience in these modules for over 20 years). Accident reconstruction and analysis of crash pulse information. Electrical, electronic, electro-mechanical components and systems. Computer, algorithm, software, analyses. Occupant sensing and Out-of-position sensing and injury mitigation.**
- **Design validation plans and reports, failure modes and effects analyses, product prove-out, design verification, reliability/durability analyses/assessment.**
- **Analysis of component defects including seats, seatbelts, load limiters, pretensioners, curtains, airbags, roof crush, structure, doors, all modes of sensors, crashworthiness. Occupant position sensing, Occupant Out-of-position sensing, and injury mitigation systems & strategies.**
- **Workplace safety standards, practices, policies. Fall Protection, - OSHA, ANSI, etc. Inertia mechanisms, harnesses. Safety/machine guards.**
- **Electrical systems and architecture, fire cause and origin, lidar/radar, sensors, camera/optical/vision, warning & diagnostic system & fault code analyses. Human machine interfaces, controls, displays, warnings, diagnostic. Data/information/parameter storage & retrieval.**
- **Insurance law, no fault insurance law, subrogation, class actions. Automotive domestic/international OEMs, customers, suppliers, manufacturing, operations. NHTSA Complaints and Responses. FMVSS, IIHS, Sled and Barrier testing and analyses. Injury assessment.**
- **Field Analysis of Product Liability Issues and the Implementation of Design Changes to Reduce Exposure. Analysis of Alternative Designs.**
- **Regulatory pre-emption arguments, express, implied, or fact-specific analyses.**
- **Depositions, Expert Testimony, Trial Testimony.** *Recall cases-FCA v. Lear, Delphi; MPC v. Standex & numerous other Product Defect cases - Please see Judicial Experience/Testimony History on (Next Page - too much to list here).*

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JUDICIAL APPEARANCES AND TESTIMONY HISTORY (PAGE 1 OF 4)

Depositions

- Kupovits v. Wright & Fillipis, Oakland County Circuit Court, Michigan, August 23, 2000
- Paisner v. Chonus, Superior Court of New Jersey, October 9-10, 2000
- Brown v. Ford, Greenup Circuit Court, Greenup, Kentucky, April 3, 2001
- Davis v. Ford, United States District Court, District of Nevada, January 9, 2002
- Estate of Edward Thompson, Lisa Bryant v. Ford, United States District Court, Eastern District of Tennessee, March 7, 2002
- Dotson v. Ford, United States District Court, Western District of Virginia, July 26, 2002
- O'neal and Johnson v. Ford et al, Circuit Court of Warren County, Mississippi, August 29, 2003
- Galam et al v. Ford et al, Los Angeles County Superior Court, September 22, 2004
- Lindop/Billich v. Ford, Santa Clara County Superior Court, San Jose California, March 17, 2005
- Davis v. Ford, Contra Costa County Superior Court, Martinez, California, March 31, 2005
- Davis v. Ford, Contra Costa County Superior Court, Martinez, California, May 26, 2005
- Sister Guadalupe Gonzalez v. Ford et al, Superior Court of California, County of Los Angeles, July 13, 2005
- Davis v. Ford, Contra Costa County Superior Court, Martinez, California, July 28-29, 2005
- Carney (Wisnewski) v. Darrin Ray Cochran, Dennis Cochran, and Ford, Circuit Court of Kanawha County, West Virginia, August 17, 2005
- Davis v. Ford, Contra Costa County Superior Court, Martinez, California, September 7, 2005
- Sister Guadalupe Gonzalez v. Ford et al, Superior Court of California, County of Los Angeles, September 13, 2005
- Cox v. Ford et al, 14th Judicial District Parish of Calcasieu Louisiana, October 21, 2005
- Mancha et al v. Ford et al, 23rd Judicial District Wharton County, Texas, November 3, 2005
- McCoy v. Ford et al, Court of Common Pleas County of Richland, South Carolina, November 8, 2005
- Davis v. Ford, Contra Costa County Superior Court, Martinez, California, November 17, 2005
- Shannon/Lynthacum v. Ford, General Court of Justice, Superior Court Division, County of Richmond, North Carolina, January 12, 2006
- Walker v. Ford, United States District Circuit Court of the 17th Judicial District, Southern District Broward County, Florida, February 2, 2006
- Cook v. Ford, Marion County Superior Court, County of Marion, State of Indiana, July 11, 2006.
- Elliot v. Ford, United States District Court, District of Arizona, September 20, 2006.
- In the Matter of Certain Starter Motors and Alternators, Inv. No. 337-TA-755, United States International Trade Commission, Washington, D.C., August 31, 2011
- Zachery Bradley, et al v. Fontaine Trailer Company, Inc., Case No. 3:06 CV 0062 (WWE), United States District Court District of Connecticut, September 27, 2011
- Mobileye, Inc. v. Picutup Corp., et al, Case No. 12 CV 1994, United States District Court Southern District of New York, August 28, 2012
- Cody Cormier, et al v. Tammy Threatts, et al 15th Judicial District Court Parish of Acadia State of Louisiana, Docket No. 2009-10199, Div. B, April 8, 2014
- Sunday Brumfield, Individually and as Tutrix of the Minors Shane Brumfield and Dalton Brumfield, v. Dana Shell, Ford Motor Company, Mississippi Farm Bureau Casualty Insurance Company, City of Baker, City of Baton Rouge, 20th Judicial District Court for the Parish of East Feliciana, State of Louisiana, Docket No. 39,092 Division B, May 15, 2014
- Toyota Motor Corp., Petitioner, v. Leroy G. Hagenbuch, Patent Owner, Case IPR2013-00483, Patent 8,014,917, Administrative Patent Judge Jameson Lee, USPTO-PTAB July 8, 2014
- CHRISTINA M. DAVIS, individually and on behalf of her minor child, BRANDON DAVIS, Plaintiff, v. Isuzu Motors Limited, a foreign corporation; Isuzu Motors America, LLC, a California limited liability company; Suburu of Indiana Automotive, Inc., an Indiana corporation, f/n/a Suburu-Isuzu Automotive, Inc.; Ronnie O. Underwood and Jane Doe Underwood, husband and wife, and Does 1-100, Inclusive, Defendants, In and for the County of Navajo, In the Superior Court of the State of Arizona, NO. CV201000098, August 21, 2014
- Vehicle Interface Technologies, L.L.C. v. Ford Motor Company, L.L.C., United States District Court for the District of Delaware, C.A. No. 12-1284-RGA, August 27-29, 2014
- Vehicle Interface Technologies, L.L.C. v. Jaguar Land Rover North America, L.L.C., United States District Court for the District of Delaware, C.A. No. 12-1285-RGA, August 27-29, & September 3, 2014
- Toyota Motor Corp., Petitioner, v. Leroy G. Hagenbuch, Patent Owner, Case IPR2013-00638, Patent 8,014,917, Administrative Patent Judge Jameson Lee, Michael W. Kim, & Adam V. Floyd, USPTO-PTAB September 19, 2014

JUDICIAL APPEARANCES AND TESTIMONY HISTORY (PAGE 2 OF 4)

Depositions

- CHRISTINA M. DAVIS, individually and on behalf of her minor child, BRANDON DAVIS, Plaintiff, v. Isuzu Motors Limited, a foreign corporation; Isuzu Motors America, LLC, a California limited liability company; Suburu of Indiana Automotive, Inc., an Indiana corporation, f/n/a Suburu-Isuzu Automotive, Inc.; Ronnie O. Underwood and Jane Doe Underwood, husband and wife, and Does 1-100, Inclusive, Defendants, In and for the County of Navajo, In the Superior Court of the State of Arizona, NO. CV201000098, September 22, 2014
- Toyota Motor Corp., Petitioner, v. Leroy G. Hagenbuch, Patent Owner, Case IPR2014-00123 Case IPR2014-00124, Patent 8,532,867, Administrative Patent Judge Jameson Lee, Michael W. Kim, & Adam V. Floyd, USPTO-PTAB September 30, 2014
- Ford Motor Company, BMW of North America LLC, v. Vehicle Operation Technologies, LLC Patent Owner, Case IPR2014-00594, Case IPR2014-00600, Case IPR 2014-00601, Case IPR2014-00602, Case IPR2014-00603 U.S Patent No. 7,145,442 Vehicle Operation Display System, Administrative Patent Judges Glenn J. Perry, Brian J. McNamara, & Bart A. Gerstenblith USPTO-PTAB, April 7, 2015
- Steven Newbern and Claudia Newbern Plaintiffs, v. Ford Motor Company and Stephen Ronald McGee Defendants, Court of Common Pleas for the Ninth Judicial Circuit, State of South Carolina, C/A No. 2013-CP-2928, April 30, 2015
- TRW Automotive US LLC, Petitioner, v. Magna Electronics Inc., Patent Owner Case IPR2014-01010 Patent 7,533,998 B2, Administrative Patent Judges James P. Calve, Michael J. Fitzpatrick, & Barry L. Grossman, USPTO-PTAB, May 19, 2015
- Sunday Brumfield, Individually and as Tutrix of the Minors Shane Brumfield and Dalton Brumfield, v. Dana Shell, Ford Motor Company, Mississippi Farm Bureau Casualty Insurance Company, City of Baker, City of Baton Rouge, 20th Judicial District Court for the Parish of East Feliciana, State of Louisiana, Docket No. 39,092 Division B, May 21, 2015
- Steven Newbern and Claudia Newbern Plaintiffs, v. Ford Motor Company and Stephen Ronald McGee Defendants, Court of Common Pleas for the Ninth Judicial Circuit, State of South Carolina, C/A No. 2013-CP-2928, July 29, 2015
- Magna Electronics Inc. Plaintiff, v. TRW Automotive Holdings Corp; TRW Automotive US LLC; and TRW Vehicle Safety Systems Inc. Defendants – United States District Court for the Western District of Michigan - Civil Action No. 1:12-cv-00654, Civil Action No. 1:13-cv-00324, Honorable Paul L. Maloney, July 7, 2015
- Margaret Scholan, as guardian for Meta Scholan and Bailey Scholan, Plaintiff, vs. Toyota Motor Corporation, a foreign Corporation, Toyota Motor Sales USA, a foreign Corporation, and Daytona BR-GD, Inc. d/b/a Daytona Toyota, a Florida corporation, Defendants; Circuit Court Seventh Judicial Circuit in and for Volusia County Florida- Case No. 2013-31068 CICI Division 31, August 5, 2015
- TRW Automotive US LLC, Petitioner, v. Magna Electronics Inc., Patent Owner; Cases IPR2014-01497 Patent 8,531,278, IPR2014-01499 Patent 8531279; Administrative Patent Judges Jamison Lee, Barry L. Grossman, & Bart A Gerstenblith, USPTO-PTAB, September 15, 2015
- Velocity Patent, LLC, Plaintiff, v. Mercedes USA, LLC; Mercedes-Benz U.S. International, Inc., & FCA US, LLC, Defendants, Case Nos. 1:13-cv-08413, Case Nos. 1:13-cv-08419 , United States District Court for the Northern District of Illinois Eastern Division, Case Nos. 1:13-cv-08419 Judge John W. Darrah Magistrate Judge Michael T. Mason, February 1, 2016
- Dorman Products, Inc., Plaintiff, v. Paccar Inc., Defendant, Civil Action No. 2.13-cv-06383-JD, United States District Court for the Eastern District of Pennsylvania, April 8, 2016
- Gayle N. Robbins, Plaintiff, v. Ford Motor Company, Defendant, Case No. 415cv01360hea, United States District Court, Eastern District of Missouri, Eastern Division, August 16, 2016
- Unified Patents Inc, Petitioner v. American Vehicular Sciences, LLC Patent Owner, IPR2016-00364 Patent 9,043,093, Administration Patent Judges Benjamin D. M. Wood, Jennifer Meyer Chagnon, Timothy J. Goodson, USPTO-PTAB, October 14, 2016
- FCA US, Plaintiff, v. Lear Corporation, Defendant/Third Party Plaintiff, v. Delphi Connection Systems US, Inc., f/k/a FCI Automotive USA, Inc., DPH Holdings Corp. and Delphi Automotive LLP, Third Party Defendants, Case No. 15-146773-CK, State of Michigan, In the Circuit Court for the County of Oakland, Hon. James M. Alexander, October 25, 2016
- Autoliv ASP, Inc.; Nihon Plast Co., LTD.; Neaton Auto Products Manufacturing Inc.; Takata Corp.; TK Holdings, Inc.; Toyoda Gosei Co. Ltd.; Hyundai Mobis Co., Ltd.; Mobis Alabama, LLC; and Mobis Parts America LLC, Petitioner, v. Amercan Vehicular Sciences, LLC, Patent Owner, IPR2016-01790 Patent 9,043,093 Administration Patent Judges Trevor M. Jefferson, Jennifer Meyer Chagnon, and Scott C. Moore, USPTO-PTAB, August 29, 2017
- Autoliv ASP, Inc.; Nihon Plast Co., LTD.; Neaton Auto Products Manufacturing Inc.; Takata Corp.; TK Holdings, Inc.; Toyoda Gosei Co. Ltd.; Hyundai Mobis Co., Ltd.; Mobis Alabama, LLC; and Mobis Parts America LLC, Petitioner, v. Amercan Vehicular Sciences, LLC, Patent Owner, IPR2016-01794 Patent 9,043,093 Administration Patent Judges Trevor M. Jefferson, Jennifer Meyer Chagnon, and Scott C. Moore, USPTO-PTAB, August 30, 2017

JUDICIAL APPEARANCES AND TESTIMONY HISTORY (PAGE 3 OF 4)

Depositions

- Magna Electronics Inc. Plaintiff v. Valeo Inc., Valeo S.A.; Valeo GMBH, Connaught Electronics Ltd., Valeo Schalter und Sensorem GMBH, Valeo North America, Inc., Defendants, United States District Court for the Eastern District of Michigan, Case No. 2:13-cv-11376 Honorable Avern Cohn, October 1, 2018.
- Michael Ogden, Plaintiff, v. McCarthy Leonard Kaemmerer Owen, McGovern Striler, & Menghini LC, Andrew B. Leonard, Brian McGovern, and James Owen, Defendants, In the Circuit Court of St. Louis County, State of Missouri, Cause No. 11SL-CC00005 Division No. 4. November 9, 2018.
- Magna Mirrors of America, Inc. Plaintiff v. Samvardhana Motherson Reflectec Group, et al. Defendants, United States District Court for the Western District of Michigan Southern Division, Case No. 1.17-CV-77 Honorable Robert J. Jonker, August 6, 2019.
- Katherine King, Plaintiff, v. James Bowden, Cassandra Fudge, Tonya Lenore Samuel, First Student Transport, LLC, First Transit, Inc., First Student, Inc., Defendants, State of Michigan, In the Circuit Court for the County of Oakland, Civil Action Case No. 2018-166480-NI, Hon. Phyllis C. McMillen, September 23, 2019
- Procon Analytics, LLC Plaintiff/Counterclaim Defendant, v. Spireon Inc., Defendant/Counterclaim Plaitiff, United States District Court Eastern District of Tennessee at Knoxville Case No. 3:19-cv-00201, Hon. Judge Reeves, August 18, 2020.
- Miniature Precision Components, Inc., Plaintiff, v. Standex Electronics, Inc., Defendant, United States District Court Eastern District of Wisconsin, Case No. 2:18-cv-01838, November 24 and December 4, 2020
- Parabit Systems, Inc., Plaintiff, vs. Synergistics, Inc., Millenium Group, Inc., Island Master Locksmith Inc., IML Security, Gregory I. Goldman, Cathy T. Goldman, Steven R. London, Marc Seidenberg, and John Does I-III, Defendants, United States District Court Eastern District of New York, Case No. 19-cv-888 (BMC), February 2, 2021
- Motherson Innovations Co., LTD., Petitioner, v. Magna Mirrors of America, Inc., Patent Owner, IPR2020-00777 U.S. Patent No. 10,261,648, Administration Patent Judges Sally C. Medley, Jessica C. Kaiser, Scott E. Bain, USPTO-PTAB, February 26, 2021.
- Continental Automotive Systems Inc., Petitioner, v. Horizon Global Americas Inc., Patent Owner, IPR2021-00320 U.S. Patent No. 8,789,896 IPR2021-00321 U.S. Patent No. 9,758,138, Administration Patent Judges Barry L. Grossman, Scott B. Howard, Matthew S. Meyers, USPTO-PTAB, November 9, 2021.
- Continental Automotive Systems Inc., Petitioner, v. Horizon Global Americas Inc., Patent Owner, IPR2021-00322 U.S. Patent No 10,040,437 B2, Administration Patent Judges Barry L. Grossman, Scott B. Howard, Matthew S. Meyers, USPTO-PTAB, November 10, 2021.
- StratosAudio, Inc., Plaintiff v. Volvo Car USA, LLC, Defendant, United States District Court for the Southern District of Texas Waco Division, Case No. 6:20-cv-01129-ADA, July 13-14, 2022.
- Karma Automotive, LLC, a California limited liability company, Plaintiff, vs. Lordstown Motors Corp., an Ohio corporation, et al., Steve Burns, an individual, Darren Post, an individual, Rich Schmidt, an individual, Roger J. Durre, an individual, Hong Xin Huan (AKA "George" Huan), an individual, Beo Qin, an individual, Stephen Punak, an individual, Christopher Kim, an individual, Dan Zhihong Huang, an individual, Punak Engineering, Inc., a California corporation, and Does 1 through 50, inclusive, 15 Defendants, United States District Court for the Central District of California Case No: 8:20-cv-02104 Judge James V. Selna, August 26, 2022.
- Stragent LLC, Plaintiff, v. Volvo Car USA, LLC, Defendant, United States District Court for the District of Deleware, Case No. C.A. No. 1:22-cv-00293-JDW, May 4-5, 2023.
- Electrolysis Prevention Solutions LLC, Plaintiff, v. Daimler Trucks North America LLC, Defendant, United States District Court Western District of North Carolina NORTH CAROLINA Charlotte Division Case No.: 3:21-cv-00171-RJC-DCK, Judge Robert J. Conrad Jr. June 29, 2023.
- Shawn Syon, Personal Representative of the Estates of Mary T. Syron, Deceased, and Maureen Therese Syron-Wood, Deceased, Plaintiffs, -vs- Ford Motor Company, a foreign corporation; and Suburban Ford of Oakland County- Waterford, LLC, a Michigan limited liability company, jointly and severally, Defendants. In the Circuit Court for the County of Oakland, State of Michigan. Honorable Kwame L. Rowe, Case No.:22-195510-NP. February 7, 2024.
- LKQ Corporation and Keystone Automotive Industries, Inc., Plaintiffs/Counterclaim Defendants, vs. KIA America, Inc., and Kia Corporation, Defendants/Counterclaim Plaintiffs. In the United States District Court for the Northern District of Illinois Eastern Division. Case No.: 1:21-cv-03166. February 14, 2024.

JUDICIAL APPEARANCES AND TESTIMONY HISTORY (PAGE 4 OF 4)

Hearings

- Paisner v. Chonus, Superior Court of New Jersey, June 28, 2000
- O'neal and Johnson v. Ford et al, Circuit Court of Warren County, Mississippi, October 9, 2003
- Parabit Systems, Inc., Plaintiff, vs. Synergistics, Inc., Millenium Group, Inc., Island Master Locksmith Inc., IML Security, Gregory I. Goldman, Cathy T. Goldman, Steven R. London, Marc Seidenberg, and John Does I-III, Defendants, United States District Court Eastern District of New York, Case No. 19-cv-888 (BMC), Patent Markman Hearing February 16, 2021
- R. Lee MCelroy, IV et al. v. Paul Wilson Streater et al. Case No.: 50-2019-CA-016073, Valeria Marchi et al. v. Paul Wilson Streater et al. Case No.: 50-2019-CA-008018 In the Circuit Court of the Fifteenth Judicial Circuit for Palm Beach County, Florida Civil Division Honorable Gregory M. Keyser, August 18, 2023.

Trial Expert Testimonies

- Schicksnider v. Ford, 17th Judicial District Court, Parish of Lafourche, Louisiana, October 30, 2003
- Schach v. Ford and Bridgestone/Firestone, United States District Court, Middle District of Pennsylvania, May 5-6, 2004
- Colton v. Ford, General District Court for City of Newport News Virginia, Southeastern District of Virginia, January 12, 2005
- Laing v. Ford, 19th District Court Dearborn, Michigan, March 10, 2005
- Edwards v. Ford, 7th Judicial District Court Parish of Concordia Vidalia, Louisiana, May 2, 2005
- Walker v. Ford, United States District, Circuit Court of the 17th Judicial District Southern District, Broward County, Florida, March 8, 2006
- Sunday Brumfield, Individually and as Tutrix of the Minors Shane Brumfield and Dalton Brumfield, v. Dana Shell, Ford Motor Company, Mississippi Farm Bureau Casualty Insurance Company, City of Baker, City of Baton Rouge, 20th Judicial District Court for the Parish of East Feliciana, State of Louisiana, Docket No. 39,092 Division B, June 2-3, 2015
- Margaret Scholan, as guardian for Meta Scholan and Bailey Scholan, Plaintiff, vs. Toyota Motor Corporation, a foreign Corporation, Toyota Motor Sales USA, a foreign Corporation, and Daytona BR-GD, Inc. d/b/a Daytona Toyota, a Florida corporation, Defendants; Circuit Court Seventh Judicial Circuit in and for Volusia County Florida- Case No. 2013-31068 CICI Division 31, November 3, 2015
- FCA US, Plaintiff, v. Lear Corporation, Defendant/Third Party Plaintiff, v. Delphi Connection Systems US, Inc., f/k/a FCI Automotive USA, Inc., DPH Holdings Corp. and Delphi Automotive LLP, Third Party Defendants, Case No. 15-146773-CK, State of Michigan, In the Circuit Court for the County of Oakland, Hon. James M. Alexander, April 28, 2017
- Magna Mirrors of America, Inc., Plaintiff, v. Samvardhana Motherson, Reflectec Group Holdings Limited, et al., Defendants, Case No. 1:17-cv-77, United States District Court Western District of Michigan Southern Division, Hon. Jane M. Beckering. Trial - December 6-13, 2022. Trial testimony December 9, 2022

Michael Nranian

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Education & Qualifications

University of Michigan — **MBA**, *with high distinction*, 2002

Wayne State University — **MS**, Electrical Engineering, *GPA 3.71/4.0*, 1991

BS, *summa cum laude*, Electrical and Computer Engineering, 1993

BS, *with distinction*, Chemical Engineering, 1984

JD, *GPA 3.61/4.0, Order of the Coif*, 1999

Six Sigma Black Belt – American Society for Quality and International Quality Federation

Licensed Professional Engineer

Certified Project Management Professional

Eagle Scout

Certified Information System Security Professional CISSP

Security+

Network+

SANS 566 Security Controls GIAC

Certified Authorization Professional - Cyber System Security Engineer

Accident Reconstruction – Northwestern University

Active Secret Security Clearance

Admitted to practice to United States Patent and Trademark Office,
US Supreme Court, and State Bars of Michigan & Texas

Summary of Professional Experience

Principal - AUTOMOTIVE DESIGN ANALYSIS South Lyon, MI - Technical consulting practice conducting objective, expert analysis and investigation of Intellectual Property (patents, prior art, copyrights, trademarks, unfair competition, trade secrets, etc.). Clarification of prior art in technical literature, publications, product specifications, and dissertations to analyze validity and obviousness. Specification and claim analysis of scientific and engineering patents. Analysis under America Invents Act and all 101, 102, 103, 112 and other arguments. Product and technology analysis, patent portfolios, patentability research. Litigation support, patent infringement/non-infringement, patent validity/invalidity, and technology education in patent disputes, claim charts, patent reexaminations. Federal and state jurisdictions, International Trade Commission (ITC) proceedings. Product Liability (including component defect allegations, vehicle crashes and occupant kinematics/injury causation) for automotive and other industries. Expert analyses of crash recorders, and electrical systems, including fault codes, crash pulse, and all recorded information. Truck, commercial, and recreational vehicles, electrical, electronic, telematics, mobile communications, and numerous other components/systems.

TARDEC/TACOM - U.S. Army, Warren, MI – Cyber Security Computer Engineer CISSP Certified Information System Security Professional
Direct. IP-Develop technologies for DoD, draft invention disclosures/patents (contract).

Associate, Intellectual Property - Vivacqua Law, Ann Arbor, MI - Represent clients in all intellectual property aspects of electrical, chemical, software, and automotive.

Principal Systems Engineer – TACOM - U.S. Army, Warren, MI - Conduct Systems Engineering. Manage Cross-Functional Teams. DoD contracts Consult via Raytheon

Risk Analysis/Decision Analysis Lead - General Dynamics, Sterling Hts., MI - Decision analysis, trade studies, systems engineering, risk analysis, & mitigation.

Intellectual Property Litigation Associate, Dechert LLP, Austin, TX - Represent clients in all aspects of electrical, chemical, software, and computers involving all aspects of intellectual property, including licensing, USPTO matters, joint development agreements, contracts, opinion work, infringement analyses, standards boards, trade secrets, & antitrust issues, copyrights. Discovery, motion practice, trial/ settlement procedures. Cases include Lucent/MPT v. Gateway MPEG proceedings, Apple Computer-Lucent Licensing negotiations, Tendler v. Onstar, and Acer/Gateway v. Hewlett Packard International Trade Commission litigation.

Design Analysis Engineer/Technical Specialist/Engineering Manager, FORD, Dearborn, MI - Responsible for technical analysis of vehicles, systems, and components, including airbags, seat belts, and automotive electrical systems and diagnostics. Contribute to continuous improvement of existing products and the design/development of new products through extensive field analysis and reporting of product performance. Evaluate vehicle component defect allegations, vehicle crashworthiness. Act as corporate representative and expert witness; testify in trials and depositions. Conduct accident investigations and prepare expert witness reports and responses to requests for discovery. Extremely knowledgeable in electrical systems, electromechanical components, as well as overall restraint systems and vehicle crashworthiness for all front and side impacts and rollover. Determination of vehicle electrical system architecture and performance, electrical component analysis, BEV, accident reconstruction, occupant kinematics, and body structure performance. Extremely knowledgeable in FMVSS, ECE, regulatory and corporate standards, warnings, as well as obtaining SAE and NHTSA publications, and obtaining information related to NHTSA inquiries, recalls, and notices. In-depth experience in vehicle diagnostic, OBDII interfaces, vehicle bus interfaces, class II and serial communication protocols, and the analysis and interpretation of electrical components, system information stored in Electronic Crash Sensors, Diagnostic Modules, software programming & algorithm methods/processes, computers, microprocessors, and other automotive system modules.

Senior Design Engineer FORD, Dearborn, MI - Lead design, development, testing, and implementation of advanced-technology passive/active restraint systems. Managed body engineering and restraint engineering, and electrical system projects for truck and car platforms. Extensive product development & program management experience. Six Sigma Black Belt; very knowledgeable in Design for Manufacturing, DOE, QC, and QA techniques. In depth experience in establishing system management plans, critical guidelines, corporate standards, design standards, specifications, test requirements, Subsystem Design Specifications, Product Verification Specifications, control plans, system and component level FMEAs, DVPRs, ISO and QS standards, Business Operating Systems, Quality Operating Systems, process reengineering, and lean manufacturing. Conducted numerous (hundreds) crash, sled, and component tests. Developed design verification plans and reports, failure modes and effects analyses, product and production validation plans, and then developed the products and systems to meet these requirements. Developed and integrated electrical and sensing systems, restraint & inflatable restraint systems, sensing systems, airbag & canopy systems, and components for front, side, & rollover, FMVSS, ECE, SAE, due-care, and corporate requirements. Developed electrical system architectures, including CAN, LIN, MOST, Byteflight, IDB1394, Flexray, Bluetooth, etc.

Design Engineer- Developed sensing, airbag and restraint systems for Ford/Mercury Car and Truck programs.

Senior Project Engineer, General Motors, Troy, MI - Design, development, testing, and release of electrical system, sensing, and airbag and airbag suppression systems for all GM truck lines. FMVSS, ECE, SAE, corporate specifications and design standards, FMEA, DVPR, control plans, and Due-Care requirements.

Senior Project Engineer, AlliedSignal, Sterling Hts., MI - Managed European, Pacific Rim, & domestic programs. Design and development of electrical systems & components, airbag modules, sensors, and airbag systems. Developed statements of work and comprehensive system design/test requirements, contracts/subcontracts.

Summary- TARDEC/TACOM U.S. Army Research and Development Center, Warren, MI – Cyber Security Team Leader Direct November 2016 to Present. Intellectual Property Development - Chief Scientist's Office – Contractual - February, 2010-July, 2016; Vivacqua Law, Ann Arbor, MI - Associate, October 2009- February, 2010; Raytheon, General Dynamics, TACOM, Warren & Sterling Hts., MI - Risk and Decision Analysis/Principal Systems Manager, February 2008- October, 2009 - Fixed Duration Contractual; Dechert LLP, Austin, TX - Intellectual Property Litigation Associate, February, 2007- December, 2007; Ford Motor Company, Dearborn, MI - Design Analysis - Technical Case Manager, February, 1999- February, 2007, Ford Motor Company, Dearborn, MI, Design Engineer, October, 1995- February, 1999 & July, 1985- July, 1992; General Motors Truck Engineering, Troy, MI - Senior Project Engineer, September, 1993- October, 1995; AlliedSignal Automotive, Sterling Heights, MI - Senior Project Engineer, Program Manager July, 1992 – September, 1993

MICHAEL NRANIAN
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ADDITIONAL INTELLECTUAL PROPERTY INFORMATION:

I have deposition, hearing and trial experience in state and federal jurisdictions throughout the United States. Additional areas of experience include:

- Evaluation of patent infringement/non-infringement, and patent validity/invalidity, including America Invents Act & 101, 102, 103, 112 and prior art arguments. Analyses performed under literal infringement and the doctrine of equivalents. Prosecution History Estoppel.
- Development and Analysis of claim charts for Markman hearings, ITC cases, & federal cases, and Inter Partes reviews.
- Expert reports, depositions, hearing and trial testimony.
- Intellectual property, including technology standards boards and licensing authorities, antitrust/DOJ, technology development and transfer, patents, trademarks, trade secrets, trademark infringement/dilution, unfair competition/trade, false/deceptive advertising, Lanham Act, copyrights. Analyses of designs for Trade secrets miss-appropriation.
- Contracts negotiation, contract drafting/interpretation, and IP related clauses, licensing indemnification, business financial impact assessments, valuation & potential ROI. Georgia-Pacific factors analyses for determining reasonable royalty for plaintiff or defense. Willful infringement arguments. Goodwill damages. Class actions.
- Developing and analyzing Markman briefs, conduct prior art searches, and the analyses of patent file wrappers.
- Contracts, licenses, joint development agreements, statements of work. Summary judgment proceedings, evidentiary hearings, motions in limine, opposition & reply reports, briefs, claim charts.
- Analysis and assessment of industry trends - followed by working with product development activities, program managers, and cross-functional teams for new product innovation and to implement strategic design changes and the development of new products.
- Commercialization of innovations and intellectual property. Assessment of the engineering development/product development necessary and likelihood of innovations and/or patented inventions to become commercial products.
- Patent Cooperation Treaty Applications, U.S. applications, & international filings. Post-Grant Review, Inter Partes Review. Patent Drafting, Prosecution, and USPTO Office Action responses.
- Clarification of prior art in technical literature, publications, product specifications, and dissertations to analyze validity and obviousness.
- Specification and literature analysis of scientific and engineering patents.Product and technology analysis, patent portfolios, patentability research.
- Litigation support and technology education in patent disputes, claim charts, patent reexaminations, derivation proceedings, prior user rights.
- Technology Contracts, Freedom of Operation and Infringement Analyses. Technology Standards Groups and Licensing Authorities.
- All Aspects of Discovery and Disclosure Requirements, e-Discovery, Discovery Policy and Strategy. Document Production and Accurate/Consistent Response Preparation. Trial and Settlement Procedures.
- Flesh out and convey the novel and innovative arguments for new technologies and inventions, and understand and convey technical similarities and differences for infringement analyses.
- Design Validation Plans and Reports, Failure Modes and Effects Analyses, product prove-out, design verification, reliability and durability analyses.
- Represent clients in all aspects of electrical, chemical, software, source code/algorithm methods/processes, computers, microprocessors, & automotive components & systems involving all aspects of intellectual property litigation. Safety systems, accident avoidance, telematics/telecommunications, mobile cellular information data transmission (transmitters/receivers), traffic/weather, communication protocols, radio optical satellite wireless mediums, GPS, navigation, monitoring/surveillance/security/tracking systems, camera/vision/optical systems, fleet management systems, Bluetooth, smartphones, truck/commercial/recreational vehicles, construction/excavation, electrical/electronic, diagnostics. Human machine interfaces/displays, diagnostics, warnings. Data/ storage/retrieval. Workplace safety.

CASES INCLUDE

- Mobileye v. iOnRoad
- Karma v. Lordstown
- Parabit v. Millenium Locksmith
- Voxx v. Johnson Safety Inc.
- Bosch v. Autel
- Stragent v. Volvo
- Continental v. Horizon
- Remy v. WAI et al (ITC)
- Speedguage v. Inthinc
- Dorman v. Paccar (Design Patents)
- Magna Mirrors v SMR Motherson
- Hagenbuch v. Toyota (IPR)
- Magna v. TRW
- StratosAudio v. Volvo Cars USA

Also involved in other cases as technical expert consultant

MICHAEL NRANIAN

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ADDITIONAL PRODUCT LIABILITY EXPERIENCE INFORMATION:

I have directly participated in more than 300 litigation cases providing overall technical and legal case management from notice through trial if necessary, including working with trial counsel, development of case and trial strategy, dispute resolution, and in-depth evaluations of multiple high-dollar lawsuits and claims. I have extensive experience in analyzing and assessing litigation risks. I have direct experience in all areas of discovery and motion practice as well as trial and settlement procedures. I understand the importance of accurate and consistent discovery and I have overseen and prepared hundreds of sets of responses to requests for productions, interrogatories, and requests for admissions. I have deposition, hearing and trial experience in state and federal jurisdictions throughout the United States. I have extensive experience in providing litigation and counseling support to national clients. I have extensive experience in analyzing and assessing claims and then working with product development activities and leading cross-functional teams to implement the necessary design changes to continuously improve products and designs and reduce overall exposure. I have direct experience in summary judgment proceedings, evidentiary hearings, motions in limine, as well as the related opposition and reply documents. I have prepared numerous expert witness reports, and have served as the expert witness and/or corporate representative in depositions, hearings, and trials, in state and federal jurisdictions throughout the United States for product liability cases. I have prepared and prepped other witnesses prior to their depositions and trial testimonies, including all potential cross-examination questions. Complete Forensic Analyses and Investigations.

Additionally, through these experiences, I have developed strong working knowledge of the following areas, among others:

- Product Liability Law, Automotive Defense, Indemnification. Forensic Analyses.
- Injury Thresholds as Related to Statutory Bars. Injury causation. Kinematic analyses.
- Medical devices, wheelchairs, motorized wheelchairs, controllers, and handicap assistance devices.
- Workplace safety/standards, Fall Protection, - OSHA, ANSI, etc. Inertia mechanisms, webbing, harnesses, forensics.
- Regulatory Requirements, including all FMVSS, ECE, SAE, Due-Care, Product Prove-out Interpretation/Compliance.
- Automotive and Truck (including Tractor-Trailer) systems, commercial recreational vehicles, construction equipment.
- Sensing systems, including all crash recorders (Direct design experience in these modules for over 20 years).
- Programming and algorithm development and verification to meet system requirements.
- Design Validation Plans and Reports, Failure Modes and Effects Analyses, product prove-out, design verification, reliability and durability analyses.
- Electrical, electronic, electro-mechanical, camera/vision, weight/occupant sensing, components and systems. Software, source code, algorithm, processes and methods. Quality control/assurance.
- Analysis of component defects including seats, seatbelts, pre-tensioners, load limiters, curtains, airbags, roof crush, structure, doors, and all modes of sensors. FMVSS and IIHS testing. Sled & Barrier & Crash testing. Forensic Analyses.
- Analysis of alternative designs, as well as design and product prove-out assessment and field analysis.
- Occupant kinematics & injury causation. Occupant detection and Out-of-position occupant detection & injury mitigation.
- Accident reconstruction and analysis of crash pulse information. Parameter and data analyses.
- Electrical systems and architecture, diagnostics, fault codes, forward collision warning, lane departure warning, collision warning, autonomous braking/cruise control, tire pressure monitoring, blind spot detection.
- Fire cause and origin (chemical/electrical). Fuel systems.
- Diagnostic system and fault code analyses, audio/visual warning systems, fail safes, labels, vehicle/operator performance
- Insurance Law, No Fault Insurance Law, Subrogation, Class Actions, NHTSA complaints & responses.
- Automotive OEMs, Customers, Suppliers, Manufacturing, Operations in domestic, European and Asian environments.
- Depositions, Expert Testimony, Trial Testimony, and Witness Preparation.
- Field Analysis of Product Liability Issues and the Implementation of Design Changes to continuously improve products.
- Support for development of Trial Strategies, Trial and Motion Practice, Dispute Resolution, Negotiation, and Settlement.
- All Aspects of Discovery and Disclosure Requirements, e-Discovery, Establishment of Discovery Policy and Strategy.
- Document Production and Accurate/Consistent Response Preparation.
- Pre-emption arguments, express, implied, or fact-specific analyses.
- Represent clients in all aspects of electrical, chemical, software methods/processes, computers, microprocessors, source code, programming, and controllers. Automotive components and systems. Safety systems, accident avoidance, telematics/telecommunications, mobile cellular information data transmission (transmitters/receivers), traffic/weather, communication protocols, radio optical satellite wireless mediums, GPS, navigation, monitoring & surveillance, security/tracking systems, camera/vision/optical systems, fleet management systems, Bluetooth, smartphones, truck, recreational, and commercial vehicle systems, construction/excavation, electrical/electronic, diagnostics, etc.

ADDITIONAL AUTOMOTIVE PRODUCT DEVELOPMENT EXPERIENCE INFORMATION:

Ford Motor Company

Responsible for vehicle safety systems, ensuring legal and certification targets are achieved. Clarify requirements, resolve issues, and conduct certification testing. Identify legal and certification targets, and translate targets into build requirements. Monitor engineering development activities to ensure compliance, and assess and mitigate risks to program and system design, development, cost, and timing benchmarks. Interpret certification and regulatory requirements and communicate these to engineering teams. Perform data analysis, write reports, and monitor test and program plans. Conduct technical and legal analysis of vehicles, systems, and components, including airbags, inflatable curtains, seat belts, sensing systems, and system diagnostics and interpretation. Extensive trial and deposition testimony experience as corporate representative and expert witness. Extensive experience in the expert analysis of Ford, General Motors, and other domestic, European, and Pacific Rim crash recorders. (Direct design experience in these modules for over 20 years), Programming and algorithm source code development and verification to meet system requirements. Direct design experience in the development and verification of performance of algorithm and programming in these modules. Interpretation and analysis of the information stored in the memory of these systems and the correlation to field events and accident reconstruction Completed Northwestern Accident Reconstruction. Perform research on legal, regulatory, and technical issues and then recommend, plan, and follow through to improve systems. Very familiar with document production, and support of discovery and motion practice as well as trial and settlement procedures. Consultant to outside counsel in litigation involving customers, suppliers, and other third parties. Serve as the corporate representative and expert witness in litigation. Complete Forensic Analyses. Analyses of vehicle and component defect allegations. Extremely knowledgeable in overall restraint systems and vehicle crashworthiness for all front and side impacts and rollover. Determination of vehicle crush, BEV, accident reconstruction, occupant kinematics, and body structure performance. Extremely knowledgeable in FMVSS, ECE, regulatory and corporate standards, homologation, warnings, as well as obtaining SAE and NHTSA publications, and obtaining information related to NHTSA inquiries, recalls, and notices. Perform accident investigations, accident reconstructions, prepare expert witness reports, and testify in trials and depositions. Respond to requests for discovery in litigation. Direct experience in dealing with NHTSA inquiries, transport of Canada, and the interpretation of automotive regulatory requirements. Forensic Analyses and Investigations.

Direct experience in design, development, testing and release of SIR sensing and electrical systems, sensing algorithm development, sensing and airbag strategy, seatbelt/restraint systems and components, vision systems, airbag modules, airbag suppression systems, occupant and infant/child seat sensing, Occupant detection and Out-of-position occupant detection & injury mitigation, steering wheel, sheetmetal, structure, trim, front side and rollover sensing systems and front and side airbag/inflatable curtain systems. Extensive interface with suppliers, and manufacturing. Respond to consumer and plant issues related to electrical and safety systems. Develop the procedures for conducting electromagnetic interference testing. Wrote and published the system level Design Verification Plan and Report for prove out of both foreign and domestic safety systems. This includes all testing requirements for sensors, electrical, seats, and airbags, for corporate, European, and Federal Motor Vehicle Safety Standards.

Wrote and Published the Ford Motor Company Airbag Sensor and Electrical Design Standards, Airbag Sensor Design Manual, and Product Specifications. Directly responsible for the design validation and product verification of airbag sensor systems and airbag modules, inflatable curtains on the Mustang, Taurus, Explorer, Expedition, Escort, Focus, F-Series, Lincoln and Mark carlines. In depth experience in front, side, and rollover sensor system algorithm development and validation. In-depth experience in vehicle electrical system design and architecture - CAN, LIN, MOST, Byteflight, IDB1394, Flexray, Bluetooth, etc. In-depth experience in vehicle diagnostic, OBDII interfaces, vehicle bus interfaces, class II and serial communication protocols, and the analysis and interpretation of restraint system information stored in Electronic Crash Sensors, Restraint Control Modules, Sensing Diagnostic Modules, and other restraint & inflatable restraint system modules. Performed modeling and analysis to develop structural modifications, sensor locations/calibrations, and airbag module parameters to ensure these systems meet government regulations and design standards. Developed new electrical system protection and routing to maintain Supplemental Inflatable Restraints electrical system integrity during crash and over long-term vehicle life. Extensive experience in training and mentoring design, development, and test engineers as well as production and manufacturing personnel.

Conducted numerous crash, sled, and component tests. Managed body engineering and restraint engineering projects. Extensive experience in optimizing front, side, rollover, restraint, inflatable restraint, sensing, sensor algorithms, vehicle structure, interior seat and trim, IP, steering wheel, electrical diagnostic, passenger classification, and overall vehicle safety system performance to meet overall cost, timing and performance objectives. Developed design verification plans and reports, comprehensive statements of work, safety system management plans, failure modes and effects analyses, product and production validation plans, and then developed the products and systems to meet these requirements. Six Sigma Black Belt, very knowledgeable in design for manufacturing, quality control, and quality assurance techniques. Also very knowledgeable in QS/ISO 9000 & 14000, TS 16949 compliance and process setup, as well as Quality Operating systems, Business Operating Systems, design for manufacturing, quality control, and quality assurance techniques.

ADDITIONAL AUTOMOTIVE PRODUCT DEVELOPMENT EXPERIENCE INFORMATION:
(CONTINUED FROM PREVIOUS PAGE)

Ford Motor Company

In-depth knowledge of Ford, General Motors, as well as other domestic, European, & Pacific Rim component and system design/performance specifications and requirements. Extremely experienced in electronics and electrical diagnostic systems for vehicles. Extremely knowledgeable in digital electronic circuitry, computers and microprocessors, modeling, algorithm development, electrical diagnostic systems, chemical engineering, metallurgical engineering, materials science, solid state electronics, software development, source code, all Microsoft applications, and new safety system technologies including sensing, airbag, curtain, seatbelt, pretensioners, passenger recognition, occupant classification, vision, radar, and the development of these systems and technologies involving multiple engineering disciplines. Strong background in commercial and operational matters, product development, and project/program management/leadership. Extensive experience in interaction with suppliers, OEMs, customers, assembly plants, and manufacturing. Workplace safety/standards/policies, Fall Protection, - OSHA, ANSI, etc. Inertia mechanisms, webbing, harnesses, forensics investigations and analyses.

Experience in multi-cultural environments. Interfaced extensively with Mazda in Japan, Ford of Europe, Ford of Mexico as well as suppliers and assembly plants. Conducted field investigations on vehicle accidents to evaluate legal and technical issues. Completed 1-year timeline in 10 months to develop mandated airbag systems for multiple product lines. Saved $9 million annually and cut number of components needed by 20% to 40% for 3 product lines. Protected $1.4 billion annual revenue with turnaround of underperforming system.

General Motors Truck Engineering

Responsible for vehicle and system level compliance with Domestic, European, and Pacific-Rim regulatory requirements, as well as overall vehicle homologation for truck platforms. Responsible for the design, development, testing, and release of SIR sensing and electrical systems for the Chevy S-10 and Jimmy Truck platforms and their derivatives. Developed the Sensing Diagnostic Module systems for truck platforms. Development and verification of performance of algorithm and programming in these controllers/modules. In-depth experience in sensing system design and development, sensor algorithm development and validation, and airbag, seatbelt, vehicle structure, and vehicle interior design and development. Perform analysis to establish the best overall system performance to meet FMVSS, ECE, SAE, corporate, and due-care requirements. Developed various airbag suppression systems for rear facing infant seats. Occupant detection and Out-of-position occupant detection & injury mitigation. Technologies under review include ultrasonic, infrared, radio frequency, light emitting diode, camera, vision, and seat pressure pattern recognition. Developed, designed, and integrated the active passenger airbag suppression switch until passive systems become production ready. Interface extensively with suppliers, assembly plants, and manufacturing. Extensive experience in reporting and presenting issues and appropriate next steps to regulatory agencies and senior management. Saved $15 million annually by leading development of new electronic sensor systems.

AlliedSignal Automotive

Developed system and vehicle plans to demonstrate compliance to domestic, Asian, and European regulations and requirements. Develop contracts, statements of work and comprehensive design and testing requirements for complete restraint system development for domestic, Asian, and European suppliers and customers. Managed domestic and European programs for the design, development, testing, and release of airbag modules for the Opel J-Car, Saab 9000, Isuzu, and Chrysler platforms, and the stored gas driver and passenger hybrid inflators. Lead the cross-functional teams of development & test engineers and technicians dedicated to these programs. Conducted component, deployment, and sled and barrier testing to determine hybrid inflator performance standards. Build sled bucks to match vehicle design parameters. In-depth knowledge of Chrysler, Ford, General Motors, Asian, European, and Australian business practices and requirements. Developed requirements for system electrical diagnostic interface.

Additional Background:

Certified in Accident Reconstruction - Northwestern University's Traffic Accident Reconstruction program. Developed critical guidelines and corporate standards for OEMs and the supply base. Extensive design & development experience in automotive electrical systems, sensing systems, diagnostic systems, as well as restraints, crash and sled testing, frontal, side, rollover impacts, occupant kinematics, injury and accident data bases, fire cause and origin, SAE and technical publications, and accident reconstruction. Direct experience in all aspects of intellectual property, including patents, joint venture agreements, trademarks, trade secrets, standards boards, antitrust issues, International Trade Commission cases, and licensing. Conduct objective assessment and evaluation. Conduct research on legal, regulatory, and technical issues. In-depth knowledge of domestic, European, Pacific Rim component and system design/performance specifications and requirements including necessary due-care airbag system development requirements. Expert investigation and analysis of vehicle electrical systems, electrical components, as well as airbag, seatbelt, and electrical diagnostic systems for vehicles. Expert analysis of domestic, European, and Pacific Rim crash recorders & crash pulse analyses. Extensive experience reviewing service bulletins, recalls, field service actions, customer contacts, owner and shop manuals for technical accuracy and adherence to federal standards. Direct experience in design, development, testing and release of SIR, sensing, & electrical systems.

MICHAEL NRANIAN

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ADDITIONAL DEFENSE/MILITARY PROGRAM MANAGEMENT INFORMATION:

TARDEC/TACOM U.S. Army Research and Development Center
Cyber Security – (Direct) Computer Engineer – Science & Technology Team Leader & Cyber Penetration Testing 2016-Present Ground Systems Cyber Engineering
Prior Assignment - Intellectual Property Development – Chief Scientist Office -Invention Evaluation Committee (contractual through GTA & Alion) (February 2010 – July 2016)

- Manage the invention disclosures & intellectual property development for U.S. army TARDEC Research & Development Center. Work with TARDEC scientists and technical staff/engineers to develop new inventions and intellectual property.
- Develop Invention disclosures for prosecution & drafting of patent applications & develop responses to office actions, conduct searches, and infringement/freedom to practice analyses. Develop technologies through joint research and development collaboration and contracts with defense contractors, universities, and other entities. Develop joint research and development contracts with defense contractors, universities, and other entities.
- Technologies include: Cyber Security, software methods/processes, latency reduction, human machine interfaces, displays, warnings, sensors, sensor fusion, sensing processes & algorithms, software algorithms & process, robotics, manufacturing, battery, fuel cells, hybrid/electric vehicle, generators, capacitors, energy storage, gasoline diesel combustion engines, fuel/energy control systems, sensors, transducers, acoustics, armor, robotics, gyroscopes, thermal measurement, fire sensing/extinguishment, solid state electronics, spintronics, blast mitigation. injury reduction, mobility systems, IED & blast detection & injury mitigation, optical/vision/camera/infrared/lidar/radar 360º assessment, active/passive safety systems, AC/DC conversion, telecommunications, command, control, electrical/electronic satellite radio mobile communications data transmission, survivability, lethality, manufacturing, crash mitigation and crash avoidance. Occupant injury mitigation.
- Extensive experience in ITAR, FAR, and DoD government contracts and subcontracts.

Raytheon
Principal Systems Engineer-Team Lead

- Experience in risk management, trade studies, risk mitigation, US government defense projects. Expert in vehicle electrical system architecture.
- Extensive experience in requirements management, writing requirements and technical specifications.
- Cross-Functional Team Leader of on-site team of systems engineers supporting the Program Manager, Modular Brigade Enhancements United States Government Customer located at the US Army Arsenal in Warren, Michigan. Conduct the analysis of mission systems requirements, as they relate to the implementation of combat capabilities across the family of current and future ground combat vehicles.
- Perform systems engineering analysis supporting the performance of systems-of-systems and systems evaluations. Conduct architecture trades necessary to balance capability, risk, affordability, and supportability. Develop a set of systems engineering foundation documents that establish the tenants for comprehensive mission systems integration.
- Provide best value approaches to systems engineering training. Responsible for overall program/project management, cross-platform commonization, process improvement, metrics reporting, and overall requirements planning, establishment, & documentation. Provide consultation and oversee development of CMMI processes, software, and requirements to enable customer to achieve CMMI Process capability and improvement.

General Dynamics
Risk Analysis/Trade Studies Systems Manager

- Perform trade studies, systems engineering, as well as program, system, and component risk identification, analysis, mitigation and overall risk management for department of defense projects. Manage Program Cross-Functional Teams.
- Responsible for Requests for Information, and selecting/managing suppliers for defense systems and components. Establish Metrics and Evaluation criteria for supplier and supply chain assessment.
- Perform Make/Buy analyses, selection of component and system integration alternatives, and select suppliers based on Metrics Evaluation. Programs include Abrams Tank, Stryker, and Expeditionary Fighting Vehicle variants.
- Experience in risk management, opportunity management, trade studies, risk mitigation, US government defense projects.
- Extensive experience in requirements management, DOORS, writing requirements and technical specifications.

Technical Program and Systems Manager — Continuous Process Improvement, Six Sigma (Black Belt), New Product & Technology Development, Project & Budget Management, Risk/Opportunity Management & Compliance, Innovation and Intellectual Property, Lean Manufacturing. Direct Experience in all aspects of Six Sigma leadership, with Six Sigma Projects in process conformance, Requirements Development, Configuration Management and process artifact & document development. Experience in CMMI, software requirements development and system maturity level improvement as well as Quality Management Systems. Experience in leading teams and departments in developing and implementing metrics and measures, and the incorporation of metrics and measures from lower level sub-processes to higher enterprise level processes, and organizational balanced scorecards. Extensive experience in New Product and Technology Development. Leader of Cross Functional Teams.