

# ERIC D. YUAN

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Dr. Yuan is a seasoned technology executive and software expert with extensive experience developing, applying, and assessing leading-edge technologies in software and data in a broad range of industry settings. He has over 25 years of professional experience in both commercial and public sectors, and demonstrates a proven track record in architecting and delivering complex, mission-critical enterprise solutions in a highly complex and competitive technology landscape. His background includes key roles in IT strategy, technology advisory, research and development, full lifecycle system development and integration, and software evaluation and assessment.

Academically known for his works in software engineering and software architecture, he also teaches graduate level Computer Science classes including discrete mathematics and AI.

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## KEY SKILLS AND EXPERTISE AREAS

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- Software Analysis, Software Architecture, Software Engineering
- Data Strategy, Data Architecture, and Data-Intensive Software Solutions
- Cloud Computing, Distributed Computing and Edge Computing
- AI/ML Systems
- Digital Engineering and Engineering Management
- Mobile and Embedded Software Solutions
- Cybersecurity for Software and Data
- Command and Control (C2), Intelligence, Surveillance and Reconnaissance (ISR) and other Military Mission-Critical Systems

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## EDUCATION

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- Ph.D., Computer Science, George Mason University, 2011-2016 (GPA 3.9/4.0)
  - Dissertation Title: Architecture-Based Self-Protecting Software Systems
- M.S., Systems Engineering, University of Virginia, 1996 (GPA 3.8/4.0)
- B.S., Computer Science, Tsinghua University, Beijing, 1993

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## PROFESSIONAL WORK EXPERIENCE SUMMARY

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### ***Software Expert Witness, Cyberonix Inc., 8/2023 – Present***

Software expert witness consultant for a variety of litigation matters, including patent, trade secret, copyright, breach of contract, and class action lawsuits. Services range from analysis of source code to preparation of expert report, and presentation of our findings in the form of expert testimony at deposition and trial.

### ***Founder and CTO, Ent Werx LLC, 7/2023 – Present***

Independent consultant for public and private sector clients, providing strategic advisory and subject matter expertise on software, data, AI/ML, and digital transformation. Customers include US military organizations and aerospace industry.

### ***Vice President of Engineering, Global Defense Sector, Booz Allen Hamilton, 3/2022 – 7/2023***

Led the strategy, ideation and implementation of Digital Battlespace Platform technical stack as foundation for \$1B+ capture portfolio of military systems.

Key responsibilities included:

- Led strategic investment of mission-driven, innovative Data Mesh solution stack with best-of-breed technologies supporting enterprise-to-edge mission use cases (such as sensor-to-shooter kill chains / kill webs).
- Helped shape sector-wide data engineering strategies and solution productization pathways. Built and managed partnerships with key vendors and technology providers.
- Technical advisor for Department of Defense (DOD) Chief Data and AI Officer (CDAO)
- Business development, thought leadership and solutioning for a major Electronic Warfare (EW) software system modernization program.
- Managed a 200-strong hybrid engineering workforce.

### ***Director | Principal Engineer / Scientist, The Aerospace Corporation, 2012 – 2022***

Strategic advisor and senior technical expert for US DoD, Intelligence Community, and Federal Government agencies such as the National Geospatial-Intelligence Agency (NGA), US Air Force, US Space Force, NASA, NOAA, etc. Instrumental in the customers' technology modernization and digital transformation towards cloud computing, big data, advanced analytics, and model-based engineering.

Recognized software expert; regularly called upon to independently assess software solutions (including architecture, design, and source code); report and defend findings before senior government leadership.

Example responsibilities included:

- Strategic support in acquisition strategy, enterprise architecture for key acquisition programs (often with budget exceeding \$1B+)
- Member of Independent Program Assessment (IPA) teams for key IC/DoD programs
- Principal Investigator (PI) on innovative R&D efforts including cloud data lake, advanced analytics, cloud-native Modeling and Simulation, Digital Engineering, software analysis
- Corporate leadership responsibilities include Software Engineering research strategy formulation, R&D investment portfolio management, corporate data strategy, corporate AI strategy, and enterprise engineering ecosystem (E3).

### ***Senior Associate, Booz Allen Hamilton, 2001 - 2012***

Program manager and senior architect in Booz Allen's Defense Team focused on mission systems solutions. Provided strategy, programmatic, and technical leadership for many programs and initiatives across the DoD and Intelligence Community. Worked with senior leadership in business development and program management. Led and mentored 30+ consulting staff.

Example engagements included:

- Task lead for service-oriented software system for a major Air Force radar program
- Chief Architect for a space situational awareness system

- Program manager and lead architect for a number of Army transformation initiatives including Army SOA Foundation, Army Net-Centric Data Strategy Center of Excellence, Army Data Services Layer, and Army Network Operations (NetOps) Information Exchange Standards
- Team Lead and Chief Architect for an Army intelligence, surveillance, and reconnaissance program
- Lead Architect for the NATO Shared Tactical Ground Picture (STGP) program
- Lead Architect for the Net-Centric Enterprise Services (NCES) project, developed by the Defense Information Systems Agency.
- Team Lead for a DARPA program.

***Principal Consultant, Oracle Corporation, 1999 – 2001***

Technical lead and software architect for various E-Commerce, Healthcare, and B2B customer solutions.

***Distinguished Member Technical Staff, Broadband Office, 1998-1999***

Lead software engineer for Silicon Valley-funded telecommunications startup.

***Senior Software Engineer, Bell Atlantic Corporation, 1996 – 1998***

Software engineer for next-gen broadband communication systems.

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**TECHNICAL SKILLS**

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- Static and dynamic software analysis (IDA Pro, SciTools Understand, Fortify, Lattix, etc.)
- Programming Languages: Java, JavaScript, Python, C/C++, Golang
- Architecture Methodologies (UML, DoDAF, UAF) and Modeling (Cameo, Sparx, etc.)
- Cloud computing technologies for Amazon Web Services (AWS) and Google Cloud Platform (GCP)
- Software engineering tools for DevSecOps and CI/CD Pipelines (Jenkins, ArgoCD, etc.)
- Big Data platforms (Hadoop, data lakes, cloud data warehouse, etc.)
- Data Stores (Cassandra, HBase, InfluxDB, Neo4J, etc.)
- Networking and Messaging (gRPC, Kafka, ActiveMQ, etc.)
- Mobile platforms (Android, iOS)

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**ACADEMIC EXPERIENCE AND PROFESSIONAL CREDENTIALS**

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***Adjunct Professor, Department of Computer Science, George Mason University, 2021 – Present***

Teaches graduate level Computer Science classes.

**Other Credentials:**

- Program Committee member, International Conference on Software Architecture (ICSA)
- Program Committee member, International Workshops on Self-Protecting Systems (SPS)
- Program Committee member, ECASE Workshops
- Member, IEEE
- Member, IEEE Computer Society
- Member, ACM
- Member, ACM Special Interest Group on Software Engineering (SIGSOFT)
- Certified Scaled Agile Framework (SAFe) Agilist

**Refereed Journal Articles:**

- Naeem Esfahani, Eric Yuan, Kyle Canavera, and Sam Malek. "Inferring Software Component Interaction Dependency for Adaptation Support." Invited submission to ACM Transactions on Autonomous and Adaptive Systems (TAAS), 10, 4, Feb 2016
- Eric Yuan, Naeem Esfahani, and Sam Malek. "A Systematic Survey of Self-Protecting Software Systems." in ACM Transactions on Autonomous and Adaptive Systems (TAAS), 8, 4, Jan. 2014

**Refereed Conference Publications:**

- Jon M Neff, Eric Yuan, Amy O'Brien, Henry Helvajian, "Software-Hardware Architecture for Distributed Compute at the Edge", AIAA SCITECH 2023 Forum, 2023
- Eric Yuan, Jon Neff, and Jeffrey Won, "Evaluation of a Distributed Kalman Filter for Autonomous Satellite Navigation Using DASEE", accepted by the IEEE Aerospace Conference, March 2022
- Eric Yuan, "Architecture interoperability and repeatability with microservices: an industry perspective." In Proceedings of the 2nd International Workshop on Establishing a Community-Wide Infrastructure for Architecture-Based Software Engineering, 2018
- Eric Yuan, "Towards ontology-based software architecture representations." In Proceedings of the 2017 IEEE/ACM 1st International Workshop on Establishing the Community-Wide Infrastructure for Architecture-Based Software Engineering (ECASE), May 2017
- Eric Yuan and Sam Malek, "Mining Software Component Interactions to Detect Security Threats at the Architectural Level." In Proceedings of the 13th Working IEEE/IFIP Conference on Software Architecture (WICSA 2016), Venice, Italy, April 2016
- Eric Yuan, Naeem Esfahani, and Sam Malek. "Automated mining of software component interactions for self-adaptation." In Proceedings of the 9th International Symposium on Software Engineering for Adaptive and Self-Managing Systems, pp. 27-36. ACM, 2014
- Eric Yuan, Sam Malek, Bradley Schmerl, David Garlan, and Jeff Gennari. "Architecture-Based Self-Protecting Software Systems." The 9th International Conference on Quality of Software Architectures (QoSA 2013), Vancouver, Canada, June 2013.
- Eric Yuan and Sam Malek, "A taxonomy and survey of self-protecting software systems." In proceedings of the 7th International Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS 2012), Zurich, Switzerland, June 2012. (30% acceptance rate)
- Eric Yuan and Michelle Watton, "An Event-Driven Service Oriented Architecture for Space Command and Control Decision Making", IEEE Aerospace Conf., Big Sky, MT. March 2012
- Eric Yuan and Jin Tong, "Attribute Based Access Control (ABAC)", Ottawa Workshop on New Challenges of Access Control, Ottawa, Canada, April 2005
- Eric Yuan and Jin Tong, "Attributed Based Access Control (ABAC) for Web Services", IEEE International Conference on Web Services (ICWS 2005), Orlando, FL., July 2005
- Eric Yuan and Greg Wenzel, "Assured Counter-Terrorism Information Sharing Using Attribute Based Information Security (ABIS)", the IEEE Aerospace Conference, Big Sky, MT. March 2005
- Eric Yuan and Greg Wenzel, "Enabling Total Information Awareness with Grid Services", the IEEE Aerospace Conference, Big Sky, MT. March 2003

**Other Professional Publications and Presentations:**

- "A Roadmap-Based Framework for Acquiring More Agile and Responsive C4I Systems", AFCEA GMU C4I Symposium, May 2010
- Speaker, "Enterprise COTS Integration: Challenges, strategies, and lessons learned for enterprise-wide solutions", Air Force IT Conference, August 2009
- Speaker, "Operationally Relevant SOA: A Service Portfolio Engineering Approach", Air Force IT Conference, August 2008

- “Realizing the Army Net-Centric Data Strategy (ANCDS) in a Service Oriented Architecture”, AFCEA GMU C4I Symposium, May 2008
- “Providing Actionable Intelligence to the Warfighter through SOA and Web Services – US Army Case Study”, Presentations at the Gartner Application Development Conference, June 2007 and the Gartner Event Processing Conference, September 2007
- “Actionable Intelligence for the Warfighter — Achieving Army ISR Net-Centricity Through a Service-Oriented Architecture (SOA)”, Army Acquisition, Logistics, and Technology (AL&T) Journal, April-June 2007 issue

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## LITIGATION CONSULTING

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- **Emerging Automotive, LLC v. Kia Corporation Et al.**  
Retaining party: Emerging Automotive LLC  
Venue: District Court, Eastern District of Texas, Marshall Division  
Case No.: 2:23-CV-0437-JRG  
Counsel: Bunsow De Mory LLP  
Nature of suit: Intellectual Property – Patent  
August 2024 – present
- **Emerging Automotive, LLC v. Toyota Motor Corporation Et al.**  
Retaining party: Emerging Automotive LLC  
Venue: District Court, Eastern District of Texas, Marshall Division  
Case No.: 2:23-CV-00434-JRG  
Counsel: Bunsow De Mory LLP  
Nature of suit: Intellectual Property – Patent  
August 2024 – present
- **Hyper Hippo Entertainment Ltd. v. RedCell Games General Partnership, RedCell Games Inc., et al.**  
Retaining party: Hyper Hippo Entertainment Ltd.  
Venue: The Supreme Court of British Columbia  
Case No.: S-217364  
Counsel: Lawson Lundell LLP  
Nature of suit: Intellectual Property – Copyright  
July 2024 – present
- **303 Software, Inc. v. Find Solace, Inc.**  
Retaining party: Find Solace, Inc.  
Venue: District Court, Denver County, Colorado  
Case No.: 2023CV30245  
Counsel: Jackson Kelly PLLC  
Nature of suit: Breach of Contract, Fraud  
April 2024 – present
- **Ark Innovation Technology Inc. v. 2XM Creations Inc., Wing Chuen Lam a.k.a. Vincent Lam, Sang-Po Huang a.k.a. Sean Huang**  
Retaining party: 2XM Creations Inc.  
Venue: The Federal Court of Canada  
Case No.: T-1269-22  
Counsel: Seastone IP LLP  
Nature of suit: Intellectual Property – Copyright  
April 2024 – present
- **Anonymous Media Research Holdings, LLC v. Samsung Electronics Co., Ltd., Samsung Electronics America, Inc.**

Retaining party: Anonymous Media Research Holdings, LLC  
Venue: Eastern District of Texas, Marshall Division  
Case No.: 2:23-CV-439  
Counsel: Ahmad, Zavitsanos & Mensing, PLLC  
Nature of suit: Intellectual Property – Patent  
Feb 2024 – present

- **Anonymous Media Research Holdings, LLC v. Roku, Inc.**  
Retaining party: Anonymous Media Research Holdings, LLC  
Venue: Western District of Texas, Austin Division  
Case No.: 1:23-cv-01143  
Counsel: Ahmad, Zavitsanos & Mensing, PLLC  
Nature of suit: Intellectual Property – Patent  
Feb 2024 – present
- **Datanet LLC v. Dropbox Inc.**  
Retaining party: Datanet LLC  
Venue: Western District of Texas  
Case No.: 6:22-cv-01142-OLG  
Counsel: Messner Reeves LLP  
Nature of suit: Intellectual Property – Patent  
November 2023 – present
- **Datanet LLC v. Microsoft Corporation**  
Retaining party: Datanet LLC  
Venue: Western District of Washington  
Case No.: 2:22-cv-01545-TL  
Counsel: Messner Reeves LLP  
Nature of suit: Intellectual Property – Patent  
November 2023 – present
- **Beijing Meishe Network Technology Co., Ltd. v. TikTok Inc., TikTok Pte. Ltd., ByteDance Ltd. and ByteDance Inc.**  
Retaining party: Beijing Meishe Network Technology Co. Ltd.  
Venue: Western District of Texas, Waco Division  
Case No.: 6:21-CV-00504-ADA-DTG  
Counsel: Cherian LLP  
Nature of suit: Intellectual Property – Patent  
October 2023 – present
- **RoadSync, Inc. v. Relay Payments, Inc. Spener Barkoff, and James Ryan Droege**  
Retaining party: RoadSync, Inc.  
Venue: Northern District of Georgia, Atlanta Division  
Case No.: 1:21-cv-03420-MLB  
Counsel: Councill, Gunnemann & Chally, LLC  
Nature of suit: Intellectual Property – Trade Secret  
September 2023 – present
- **Jeffrey David Bethel & Sandia Performance, LLC v. Sandia Aerospace & Honeywell/BendixKing**  
Retaining party: Jeffrey David Bethel & Sandia Performance, LLC  
Venue: New Mexico Federal Court,  
Case No.: 1:20-cv-00596-MV-JMR  
Counsel: CRT Law & Professional Services, LLC

Nature of suit: Intellectual Property – Copyright  
September 2023 – December 2023