# DR. FAISAL QUADER

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## Career Summary

Dr. Faisal Quader has spent twenty-nine years in the field of Engineering, Computer Science and Information Science as an industry leader covering large scale product development to complex service delivery for demanding federal and commercial customers.  He holds Ph.D. in Cybersecurity & Data Science from the University of Maryland. He holds Master's in Computer Science and Engineering from Johns Hopkins University and holds a Bachelor's in Computer Science from the University of Wisconsin. He was a Merit Scholar at all his universities in academic work. His academic interests are in Cybersecurity, Data Mining, AI/ML, RPA, Human-computer Interaction, R&D process optimization as well as Health IT.  He actively participates in IEEE and ACM. He is recipient of several academic and industry awards and certified in multiple standards including Six Sigma. Faisal has numerous publications on cybersecurity and data mining. He is also an adjunct Professor at the University of Maryland for the Department of Information Systems in College of Engineering and Information Technology.

Faisal spent more than fifteen years with General Electric and Lockheed Martin Corporation.  During his tenure, he oversaw an offshore development center, re-engineered multiple business processes for cost optimization and improved efficiency and provided direction to new product lines.  As the senior manager of GE, Faisal grew the R&D division at an offshore facility from ten to six hundred employees over a span of seven years.  He brought his technical and management expertise with Fortune 100 corporations developed during his tenure with these multinational organizations to new technology startups.  In 2007, he cofounded TISTA Science and Technology and provided leadership roles until 2013 when he cofounded the current organization, Technuf.  His current interest as the president of his organization is in emerging technology that includes collaboration application development for mobile platforms, cybersecurity, cloud computing, forensic analysis embedded in Big Data, Robotic Process Automation (RPA) as well as Artificial Intelligence & Machine Learning (AI/ML).

Faisal has closely worked with both federal civilian and defense organizations. In the civilian sector, he has supported the agencies in defining cybersecurity countermeasures to ensure the protection of federal assets with Identity Access Management, Deep Packet Capture, Forensic Analysis and E-Discovery and litigation support. He is also a researcher in human behavior analytics for smart cars.

Faisal is passionate about serving his community and in the past has served in the leadership role as the chair of a few non-profit organizations including professional engineering bodies. Faisal also loves music. He is an active singer and involved with numerous cultural activities. He is married with two children and lives in Bethesda, Maryland, a few minutes from the nation's capital.

# Education

1995        Bachelor of Science (BS) Degree in Computer Science with a minor in Mathematics
            University of Wisconsin, Oshkosh, Wisconsin, USA

2003        Master of Science (MS) Degree in Computer Science and Engineering
            Johns Hopkins University, Baltimore, Maryland, USA

2020    Doctor of Philosophy (PhD) Degree in Information Systems with the concentration in Cybersecurity & Data Science under the School of Engineering
University of Maryland, Baltimore County, Maryland, USA

## PROFESSIONAL DEVELOPMENT

- Service Oriented Architecture
- GE Management Training and Leadership Workshop
- Project Management Workshop
- Consulting Workshop
- 5-Day MBA Workshop by American Management Association
- Conference and Workshop on Agile Methodology

    ➢ Authored "Using Agile Processes to Effectively Develop Software - An Experience Report"

- PhD Courses taken at GMU and UMBC:

    ➢ IT 821 Research Issue - Web Software Engineering
    ➢ CS 800 Computer Science Colloquium
    ➢ SWE 619 Object Oriented Software Specification/Construction
    ➢ SWE 763 Software Engineering Experiment
    ➢ SWE 621 Software Model/Architecture Design
    ➢ INFS 614 Database Management
    ➢ ISA 562 Information Security Theory/Practice
    ➢ IS 698 Advanced Data Analytics for Cybersecurity
    ➢ IS 733 Advanced Data Mining and Data Analytics
    ➢ IS 805 – Advanced Field Research Methods
    ➢ IS 809 Computational Modeling

- Java Training:

    ➢ Java Programming and Web based Application Development by Sun Micro Systems
    ➢ WebLogic Application Server using J2EE technology
    ➢ Web Services – Building XML Web Services with Java

- Visual C++ Training:

    ➢ Building Object Oriented Application using Visual C++

- Telecommunication Boot Camp

- Oracle & Sybase Training:

    ➢ Database Administration
    ➢ Writing Effective Stored Procedures
    ➢ Performance and Tuning
    ➢ Replication Server

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## ACHIEVEMENTS & STRENGTHS

- Awarded "Award of Excellence" from GE for managing and delivering quality product.
- GE Leadership Awards for excellence in managing global teams across the world.
- Awarded "Rookie of the Year" at Lockheed Martin Corporation
- International Scholarship Recipient (90% of the College Expense) in undergraduate
- Awarded "Best & the Brightest" student award in 1994.
- Involved in leadership activities in college, served as the Community Advisor (Residence Assistant – RA) of a Residence Hall at the University of Wisconsin. Awarded "CA/RA of the Month" 4 times.
- Presented a research paper as an undergraduate student at the Sixtieth Annual Meeting of the Mathematical Association of America
- Strengths – creative and innovative, willing to learn new technology, technical, ability to manage a team very effectively, focused, goal oriented, open minded, ability to motivate and run a team efficiently, problem solving capability in a stressful situation.
- U.S. Citizen
- IRS MBI Security Clearance
- Top Secret Security Clearance

## BACKGROUND SUMMARY

- **Technology:** Managed complex and mission critical projects using the latest J2EE technology. Extensive experience includes design, architecture, implementation, installation, and post-production support for complex, object-oriented systems using Java, Web Services, Ajax, Visual C++, C, Objective C, PowerBuilder, Visual Basic, Oracle, Sybase and UDB RDBMS in Client/Server 3-tier architecture, in Java MVC architecture as well as in SOA, Robotic Process Automation (RPA).

- **Cybersecurity:** Educator and the practitioner for all spectrum of cybersecurity domains including the Identity & Access Management, Data Loss Prevention, Threat Intelligence, Threat Hunting, Threat Prevention, Forensic Analysis, Security Operation Center, Security Awareness Training, Phishing Campaign, Ransomware Detection & Prevention, Advanced Persistent Threat detection & prevention.

- **Data Science:** Educator and the practitioner in Big Data Analytics, Business Intelligence, Artificial Intelligence and Machine Learning

- **IVR/CTI:** Specialized in leading projects like IVR (Integrated Voice Response) / CTI (Computer Telephony Integration) Solutions for Call Centers, Data Modeling and Database Design, Internet based GUI development and Broadcast Architecture

- **Management:** Ability to manage and deliver all the deliverables on time most effectively and efficiently. Managed multiple complex and mission critical projects in B2B E-commerce area using the latest J2EE technology and leading global teams from U.S., Mexico, India (Bangalore) and Canada.

- **Agile and Six Sigma Certification:** Six Sigma Green Belt certified. Extensive application of Agile methodology in mission critical projects.

## PROFESSIONAL EXPERIENCE

**President & Co-founder,** *February 2011 – Present*
*Technuf, LLC, Rockville, MD*

Providing strategic leadership for the company by working with the Board and other management to establish long-range goals, strategies, plans, and policies. Also Driving the technology directions for the company.

- Planning, developing, organizing, implementing, directing, and evaluating the organization's fiscal function and performance especially in the technology area.

- Providing significant leadership of the technology sector with vision & skills to provide direction to my company.

- Continuing to infuse innovation, enthusiasm and measured risk taking to the new generation of technologists building innovative application suites for the global community.

- Managing and leading mission critical projects for Cisco IPICS (IP Interoperability & Collaboration System) project.

- Managing and leading Engineering teams in offshore with multifaceted mobile application development initiatives.

- Supporting Enterprise Lifecycle (ELC) teams at the Internal Revenue Service (IRS) with agile methodology.

- Grew Technuf's technology base to $15M in 5 years.

**Faculty/Adjunct Professor,** *Fall Semester 2021 – Present*
*University of Maryland, Baltimore County, MD*

Teaching leading edge contemporary technology classes on Cybersecurity and Data Science for the Department of Information Systems in Graduate College of Engineering and Information Technology

- Teaching Artificial Intelligence & Machine Learning (IS 603). This course provides an overview of data-driven decision-making via artificial intelligence (AI) and data science (DS) technologies. The emphasis is on how to use these technologies to solve real-world problems. Students obtains an understanding of both fundamental concepts and practical insights in data-analytic thinking, as well as a foundation for further study in AI and DS.

- Teaching Data Mining (IS 733). This course provides an in-depth understanding of the technical, business, and research issues in data mining, including classification, clustering, association rules, visualization, and data warehousing. New areas of research and development in data mining is also discussed.

- Teaching Data Analytics for Cybersecurity (IS 734). The course provides an introduction of cybersecurity and different aspects of it, study types of cyber-attacks, anomalies and their relationship to cyber threats, introduction to data mining and big data analytics, methods for discovering anomalies, tools for data analytics and anomaly detection, hands on exercises on data analysis for cybersecurity.

**President & Managing Partner, Engineering & Research,** *January 2011 – March 2013*
*TISTA Science & Technology Corporation, Bethesda/Rockville, MD*

Lead both Civilian and Commercial sectors for TISTA. Managing end to end Web applications for Enterprise Services division of the Internal Revenue Service (IRS). Head mobile application and the incident response systems for Cisco. Managed Service Center Desktop for the Metropolitan Washington Airport Authority (MWAA).

- Strategized and Implemented Agile Methodology for the IRS as part of their IT modernization initiatives. Initiated, Designed and Implemented Iterative Path as part of the SDLC path.

- Coached various IRS project teams with ELC (Enterprise Lifecycle) methodology. Streamlined the existing ELC methodology and optimized the ELC process.

- Initiated, Designed, and Implemented a new ELC path – "Mobile Path" to support all mobile applications within IRS.

- Upgraded, optimized, developed, and maintained the ELC PMO website utilizing Human Computer Interaction (HCI) research. Automated a manual Milestone Readiness Review (MRR) document routing tool as a web-based application with HCI design.

- Managing a mission critical project – IPICS for CISCO. Cisco IP Interoperability and Collaboration System (IPICS) is a complete IP-based dispatch and incidence response solution. The entire project is being managed using strict agile methodologies. Each deliverable is on a 6-week cycle from requirements to design to implementation and testing.

- Grew TISTA's technology base to $6M in 2 years.

**Senior VP, Engineering & Research** - *August 2009 – December 2010*
*TISTA Science & Technology Corporation, Bethesda, MD*

Gathered and analyzed requirements & design, as well as evaluating COTS products for Identity and Access Management system at Cybersecurity division of the Internal Revenue Service (IRS).

- Served as a project manager for EnCase and PCAP projects at IRS providing a solution to perform investigations against cyber attacks across the network more rapidly and against any/all affected assets.

- Documented all ELC (Enterprise Lifecycle) artifacts including a solid project plan and WBS (Work Breakdown Structure) for IRS.

- Performed a complete end to end analysis of the existing IdAM system at IRS and prepared thorough business and technical requirements for next generation IdAM system.

- Evaluated the COTS products for next generation IdAM system at IRS Cybersecurity division and Treasury.

- Responsible for documenting the IRS's provisioning workflow and identifying Weaknesses.

- Interviewed key IRS stakeholders to extract requirements for the agency's Identity & Access Management Solution

- Compiled provisioning requirements into a final deliverable that would serve as the basis for an RFP for IRS.

## Sr. Technical Project Manager/Sr. Program Manager/Project Lead/Team Lead/Component Architect,
*May 2000 – May 2010*
*GENERAL ELECTRIC COMPANY, Now GXS, Gaithersburg, MD*

**Sr. Program Manager / Sr. Technical Project Manager** – *April 2002 – May 2010*

Managed and owned the end-to-end solution for Registration, Approval & Administration (RAA) component of a web-based supply-chain management system. RAA is a gateway to all B2B E-commerce applications using Scrum methodology. Currently RAA is supporting 150,000 trading partners in a global exchange community. Also leading a migration project to upgrade all the legacy systems under a new platform called Trading Grid Online. This includes implementation of the Identity and Access Management System of E-commerce application.

- Lead a global development team of 30 members across U.S., Canada, and India.

- Managed client needs for RAA solution collaborating with Professional Services.

- Responsible for all requirements definition for RAA component.

- Developed and implement end to end migration strategy for legacy systems using Scrum methodology.

**Project Lead** – *January 2002 – March 2002*

Head the System Engineering team whose sole responsibility was to make sure the production environment was optimized and performed to its optimal capacity.

- Adjusted the configuration of hardware and software according to the data load, usage, and CPU utilization both in Windows, UNIX and Linux environments.

**Team Lead** – *July 2001 – December 2001*

Lead design, development and implementation of a component called ICP (Internet Commerce Platform), which was an interface that provided services to all common B2B electronic commerce applications.

- Managed the development effort of core Internet Commerce Platform that helped reducing the cost of operating exchange software, increased the quality of operations and above all, sped up the implementation of Internet applications for our customers using Weblogic and Web Methods Application Server with Java.

- Designed the architecture of hardware/software configuration of B2B exchange for both development, QA, pre-production, and production environments.

- Compiled an MGPP for ICP and presented the entire design plan to the business.

- Guided the implementation team as an Agile coach.

**Component Architect** – *May 2000 – June 2001*

Built a new Accounting component for GE as a billing mechanism for the usage of B2B e-commerce applications.

- Lead, designed, developed, and delivered a complete Accounting solution as a billing Engine for GE/GXS to bill its customers in both public and private exchange.

- Built a development team in Bangalore of India for Accounting project that saved GE at least $350,000 in development cost.

- Researched and authored Requirements Definition Documents (RDD) for Accounting. Gathered requirements from Marketing, Application Engineers, ICP Registration and other accounting related customers.

- Completed RDD to specify 20 or more man-months of design, development, and testing. All RDD received "Approvals" from RDD review committees.

- Closed the gap between the immediate billing need and the duration for developing Accounting component for Express Marketplace and Rail Marketplace by delivering an interim billing solution.

- This billing component helped GXS to bill their customer and generated revenue sooner while Accounting team developed a flexible Accounting system.

**Senior Software Engineer,** *March 1999 – May 2000*
*LOCKHEED MARTIN CORPORATION, Washington D.C.*

Developed a broadcast system that dealt with scheduling jobs and sending messages to field technicians in real time.

- Built a web-based rescheduling application/applet in Java 2, HTML and DHTML that tracked part-orders and scheduled jobs for utility companies using SDLC process.

- Designed the entire Customer Data Mart relational database that held customer and technician information as well as the transaction info for service jobs.

- Designed and implemented a Data Migration Engine from mainframe DB2 Database to NT Universal Database (UDB). Developed a new, optimized data model for this engine.

### IVR/CTI Technical Engineer/Developer, *June 1996 – March 1999*
*WELLSPRING RESOURCES, Bethesda, Maryland / Washington D.C. / Jacksonville, Florida*

Implemented both Intelligent Call Routing System and Service Center Desktop that dealt with all the transactions of 401K, mutual funds, health & welfare, and pension through IVR and customer service representatives. This system in production was capable of handling 30,000 calls per hour.

* Developed CTI toolbar GUI and Service Center Desktop application for a customer service Call Center using PowerBuilder 5.0 and PFC Library. The application handled all the telephony functionality such as make-call, consult call, conference call and transfer call to the desktop.

* Developed an IVR system for a Call Center of 100,000 customers. Designed the call flow and the navigational state tables for the entire IVR system.

* Designed, coded, and maintained CTI Data Model using Sybase Relational Database on HP UNIX to implement Intelligent Call Routing from a customer to an agent via IVR.

* Wrote stored procedures for both call routing and data access from CTI database used by Softphone, API/DLL, Router, Transfer Server, and CTI Toolbar GUI

* Coded and maintained CTI API DLL written in Visual C++ as a middleware component which handled the communication mechanism between the Switch, IVR and the Desktop application.

* Designed and coded software for AT&T G3 Switch Configuration and Call Vector Processing using TSAPI (Telephony Service Application Programming Interface) Server

### Associate Consultant, *June 1995 - May 1996*
*TECHNOLOGY SOLUTIONS COMPANY, Chicago, Illinois*

Created application software according to business needs. This included designing, programming, and writing documentation, evaluating user request for new or modified programs; consulted with users/customers to identify current operating procedures and drew diagrams to illustrate sequence of steps and logical operations.

* Designed and maintained data model for call routing.

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* Wrote stored procedures to perform the entire call flow from a customer to an agent (destination) using both Oracle and Sybase RDBMS.

* Designed and coded a Toolkit Maintenance Application (TKM) in PowerBuilder to create and maintain call routing rules and switch related data in the database.

* Created a test environment and performed unit testing, integration, regression, and volume testing for the entire call center.

**Computer Programmer** - *September 1994 - May 1995*
*SYNAPTIC MICRO SOLUTIONS, Appleton, Wisconsin*

Developed an automated Ads Scheduling Application for the nationwide newspaper industry that managed complex and changing schedules between different publications and zones.

* Programmed new Windows-based software applications and converted DOS-based applications to Windows environment from QBASIC and C to Visual Basic.

* Participated in marketing and supporting developed software packages for both newspaper and magazine industries.

**Programmer Analyst,** *January 1994 - August 1994*
*MANAGEMENT INFORMATION OFFICE (MIO), University of Wisconsin*

Built a reservation program that dealt with guest room, meeting room and conference room reservations at Gruenhagen Conference Center at the University of Wisconsin. The application managed reservations of appropriate rooms according to the customers' preferences on size, location, and capacity, and also controlled computerized check-in & check-out system.

* Wrote and maintained programs and utilities for specific projects using Clipper, C and FoxPro on a Novell LAN; also compared and evaluated various database languages for future use.

* Prepared technical and user manuals for all completed projects, and assisted and trained end-users, taught off-the-shelf software packages available at MIO to the Department of Residence Life staff, Residence Hall Information Specialists, and newly hired personnel. Also recruited, interviewed, and hired MIO IT personnel.

**Computer Specialist**, *September 1993 - August 1994*
*PROFESSIONAL FOOD SERVICE MANAGEMENT (PFM), University of Wisconsin*

Engineered an automated payroll system for the employees at PFM. Implemented a month-end inventory system for food products at PFM.

* Constructed an application that performed monthly inventory, budgets, payrolls, and update price changes using Quattro Pro.

## Academic/Professional Publications

* F. Quader and V. Janeja, "Insights into Organizational Security Readiness: Lessons Learned from Cyber-Attack Case Studies", MDPI, J. Cybersecur. Priv. 2021, *1*(4), 638-659, https://doi.org/10.3390/jcp1040032

* F. Quader and V. Janeja, "Anomaly Detection: Under the [data] Hood in Smart Cars", 2019 IEEE International Conference on Smart Computing (SMARTCOMP), Washington, DC, USA, 2019, pp. 126-131, doi: 10.1109/SMARTCOMP.2019.00041

* F. Quader, S. Hassan and S. Ahmed, "Securing NAB Gateway Data", 2019 NAB Broadcast Engineering and Information Technology Conference Proceedings, Las Vegas, NV, 2019. Available at http://www.nabstore.com/NAB_Broadcast_Engineering_Conference_Proceedings_p/cp175.htm

* F. Quader, S. Hassan and S. Ahmed, "Securing NAB Gateway Data", 2018 NAB Broadcast Engineering and Information Technology Conference Proceedings, Las Vegas, NV, 2018. Available at http://www.nabstore.com/NAB_Broadcast_Engineering_Conference_Proceedings_p/cp170.htm

* F. Quader, Cyber Security: It All Comes Down to the Human Factor, First Republic, March 24, 2016, Available at https://www.firstrepublic.com/articles-insights/life-money/protect-against-fraud/cyber-security-it-all-comes-down-to-the-human-factor

* F. Quader, V.P. Janeja, Justin Stauffer, Persistent Threat Pattern Discovery, IEEE International Conference on Intelligence and Security Informatics, 2015, Baltimore MD

* F. Quader, V.P. Janeja, Computational Models to Capture Human Behavior in Cybersecurity Attacks, The Third ASE International Conference on Cyber Security May 2014, Stanford, CA

* Momtaz, M., Padela, J., Leslie, R., Quader, F. (2024). Developing Predictive Models for Smart Policing Based on Baltimore's Crime and Product Price Correlation. WorldS4 2023. Lecture Notes in Networks and Systems, vol 812. Springer, Singapore. https://doi.org/10.1007/978-981-99-8031-4_48

* Quader, F., Podskalny, A., Janeja, V.P. (2024). Anomaly Detection Across Multi-scale Temporal Data Streams for Human Behavior Modeling. In: Nagar, A.K., Jat, D.S., Mishra, D.K., Joshi, A. (eds) Intelligent Sustainable Systems. WorldCIST 2023. Lecture Notes in Networks and Systems, vol 828. Springer, Singapore. https://doi.org/10.1007/978-981-99-8111-3_25