

Professional Profile

Core Areas of Expertise

Professional Experience

Education

Certifications & Training

Publications

Editorial & Review Service

CURRICULUM VITAE OF

Asfand Khan, Ph.D.

Associate Consultant, Vantage Forensics

asfand@vantage-forensics.com | Direct: (719) 415-8178

www.Vantage-Forensics.com | 10/20/2026

PROFESSIONAL PROFILE

Human factors professional with doctoral training in Human Factors and engineering degrees in industrial and systems engineering and aerospace engineering. Experience spans commercial aviation maintenance and quality assurance, aerospace engineering, wind-energy manufacturing operations, and multi-state healthcare systems. Applies human performance principles, systems engineering, and structured hazard and causal analysis methods, including the Human Factors Analysis and Classification System (HFACS), to identify latent system conditions, human-system vulnerabilities, and contributing factors in safety-critical environments. Author of published research on human factors, surgical flow disruptions, and patient safety.

CORE AREAS OF EXPERTISE

- **Human Performance & Human Factors:** Cognitive Workload & Performance Assessment, Human-System Integration, and Simulation-Based Human Performance Testing.
- **Safety Investigation & Causal Analysis:** Human Factors Analysis and Classification System (HFACS), Human Factors Intervention Matrix (HFIX), Root Cause Analysis (RCA), Latent Failure Identification, and Structured Hazard Analysis.
- **Aviation & Aerospace Safety:** Aircraft Maintenance and Airworthiness, Operational Resilience, Crew Resource Management, and FAA Civil (14 CFR) Certification Flight Test Procedures.

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- **Test & Evaluation:** Test Procedures & Evaluation, Technology Validation, and Data-Driven Research & Performance Optimization.
- **Systems Safety & Quality:** High-Reliability Operations & Risk Management, Quality Management Systems (ISO 9000), and Lean Six Sigma Methods.

PROFESSIONAL EXPERIENCE

Vantage Forensics: Human Factors, Accident Reconstruction, & Biomechanics Inc.

Associate Consultant | October 2026 – Present

- Performs human factors analyses on selected litigation matters under the supervision of the firm's President.

AdventHealth

Manager, Strategy & Physician Enterprise – Multi-State Division | 2020 – Present

- Provides strategic and operational leadership across a 24-hospital, eight-state healthcare enterprise ($6.3B), supporting human performance, operational resilience, and physician enterprise development.
- Conducts enterprise-level human factors testing, evaluation, and human-performance investigations to identify latent system conditions, workflow disruptions, cognitive demands, and human-system vulnerabilities, and translates findings into evidence-based interventions.
- Applies human factors, cognitive workload, risk analysis, and human-system integration principles to the evaluation of staffing, technology deployment, workflow design, and patient-safety initiatives.
- Leads project management and strategic analysis for senior leadership on initiatives across more than 52 facilities, including stakeholder research, data analysis, systems evaluation, and process standardization.

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- Leads operational and system redesigns in clinical and administrative settings, integrating human performance, workflow, and systems-level risk analysis.

Vestas American Wind Technology, Inc.

Industrial & Systems Engineer | 2017 – 2020

- Led safety and quality initiatives for the PTC component storage yard and tower manufacturing operations, supporting more than $20 billion in component value across North America.
- Directed a $2.5B storage yard improvement initiative covering the acquisition, allocation, and delivery of wind turbine components (nacelles, drivetrains, towers, and hubs), coordinating with more than 30 ownership companies on adherence to ISO standards.
- Conducted human factors investigations from data collection and causal analysis through safety recommendations and implementation support.
- Applied structured safety risk analysis, root cause analysis, and incident prevention strategies at the Vestas PTC Pueblo yard, which recorded zero citations and zero injuries for three consecutive years.

Etihad Airways

Aircraft Engineer | 2013 – 2016

- Led engineering and maintenance initiatives across a mixed commercial fleet of Boeing (B737, B747, B777, B787) and Airbus (A320, A330, A340, A380) aircraft.
- Performed component removals, installations, and calibrations on multi-engine configurations (Rolls-Royce Trent 700 and GE90 engines) in accordance with Aircraft Maintenance Manual procedures.
- Conducted root cause analyses and system reliability reviews of critical systems, including control surfaces,



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avionics, and engines, to reduce repeat maintenance and improve dispatch reliability.
- Performed engine performance and health monitoring for RR772 and GE90 series engines, including data downloads, trend analysis, and anomaly detection, applying Six Sigma techniques to reliability tracking.
- Practical knowledge of flight test procedures and requirements for FAA civil (14 CFR) certification.

Air Blue & Pak Aviation Engineering Services

Quality Engineer (Aerospace) | 2010 – 2013

- Managed ISO 9000 certification compliance, scheduling and conducting quality programs and audits for all departments involved in the maintenance of the Airblue fleet (Airbus A320, A330, and A340).
- Implemented the safety and quality management systems set out in the quality manual, using Six Sigma techniques.
- Served as a member of the initial investigation team for the Bhoja Air Flight 213 (Boeing 737-200) accident.

Space and Upper Atmosphere Research Organization

Assistant Manager | 2009 – 2010

- Designed satellite components applying aerospace, structural, and mechanical engineering principles; reviewed technical documents and recommended actions to maintain reliability and control cost.
- Prepared technical documents and reports on key performance indicators, and led the team responsible for mission planning of a new design through delivery for development.

EDUCATION

Embry-Riddle Aeronautical University

- **Ph.D.**, Human Factors (2025)

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- *Dissertation:* A Human Factors Analysis and Classification System (HFACS) Approach to Compare Cardiovascular, Orthopedics, Trauma Care, and Neurosurgery

Colorado State University

- **M.S.**, Industrial & Systems Engineering (2017)

National University of Sciences & Technology (NUST)

- **Bachelor's Degree**, Aerospace Engineering (2009)

CERTIFICATIONS & TRAINING

- Human Factors Analysis and Classification System (HFACS) Certification
- Human Factors Intervention Matrix (HFIX) Certification
- Lean Six Sigma Green Belt, Colorado State University
- Prosci Change Management Course Certification
- European Union Aviation Safety Agency (EASA) Aircraft Maintenance License Examinations (passed)
- Private Pilot License Training (10+ flight hours)

PUBLICATIONS

Khan, A., et al. (2026). Reframing Safety: Human Factors for Safer, Smarter, Human-Centered Healthcare. *Journal of Patient Safety*.

Khan, A., et al. (2026). Human Factors Analysis of Vendor-Induced Flow Disruptions in Orthopedic Surgery: Implications for Workflow Integration and System Safety. *IISE Transactions on Occupational Ergonomics and Human Factors*.

Khan, A., et al. (2026). A Human Factors Analysis of Personal Electronic Device Use and Cognitive Distractions in Orthopedic Surgery. *Journal of Orthopaedic Experience & Innovation*.

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Khan, A., et al. (2025). Uncovering safety risks across multispecialty: A Human Factor Analysis and Classification System (HFACS) based observational study in cardiovascular, orthopedic, trauma care, and neurosurgical environments. *Journal of Healthcare Risk Management*.

Khan, A., et al. (2025). Using Broken Windows Theory to Examine Flow Disruptions in Surgical Care: A Multispecialty Comparison. *The Journal for Healthcare Quality*, 47(2), e0469.

Khan, A., et al. (2025). Uncovering Latent Failures Using Human Factors Approach as a Diagnostic Tool for Quality Improvement in Orthopedic Surgery. *American Journal of Medical Quality*.

Khan, A., et al. (2025). A Novel Checklist Approach to Reduce Time Under Anesthesia in Neurosurgery. *World Neurosurgery*.

Khan, A., et al. (2025). Characterization of Surgical Flow Disruptions in Orthopedic Surgery using a Human Factors Approach. *Perioperative Care and Operating Room Management*.

Khan, A. (2025). A Human Factors Analysis and Classification System (HFACS) Approach to Compare Cardiovascular, Orthopedics, Trauma Care, and Neurosurgery. Ph.D. Dissertation, Embry-Riddle Aeronautical University.

Khan, A., et al. (2024). Application of broken windows theory to identify flow disruptions in neurosurgery procedure. *Journal of Healthcare Risk Management*.

Khan, A., et al. (2022). Optimizing the complexities of unforeseen risk in healthcare with innovation and technology: a proposed framework. *Journal of Hospital Management and Health Policy*.

Manuscripts in Publication

Khan, A., et al. Identifying Latent Failures by Applying the Human Factors Analysis and Classification System (HFACS) in Neurosurgery to Improve Patient Safety and Quality.



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Khan, A., et al. A Century of Flight Deck Evolution: Implications of Automation on Pilot Cognitive Skills and Human–System Integration.

EDITORIAL & REVIEW SERVICE

Editorial member/reviewer for the following journals:

- *Human Factors in Healthcare* (Editorial Board Member – Applied)
- *International Journal of Aviation, Aeronautics and Aerospace*
- *British Medical Journal of Quality & Safety*
- *Journal of Human Factors & Ergonomics Society*

ORCID: 0000-0002-9649-9269