



Jason Kumagai, M.Sc., CCPE, CHFP

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EXPERT SUMMARY

Mr. Jason Kumagai is Practice Lead of the Human Factors group at 30 Forensic Engineering. During his career in Human Factors, Jason has conducted and managed projects and research in Human Factors in a wide range of industries including energy, health care, transportation, defence, and mining. Specializing in fatigue risk management, he has helped companies develop and implement fatigue risk management programs, including investigations of major accidents. Jason is a certified Human Factors/ Ergonomics professional in both Canada and the U.S. and is nationally recognized for his leadership in Human Factors and Fatigue Management. Jason has served as a regional president of the Association of Canadian Ergonomists, and president of the Canadian College for the Certification of Professional Ergonomists.

SPECIALIZED PROFESSIONAL COMPETENCIES

- Fatigue Management
- Human Error Analysis
- Whole Body Vibration Assessment
- Medical Error
- Human Machine Interface Design
- Usability Testing
- Safety Critical Task Analysis
- Technical Standard Development

ACADEMIC BACKGROUND

Master of Science Kinesiology (Psychomotor Behaviour), University of Waterloo, Waterloo, Ontario, 2002
Bachelor of Kinesiology Honours (Ergonomics Option) Co-operative Program, University of Waterloo, Waterloo, Ontario, 1995



PROFESSIONAL EXPERIENCE

30 Forensic Engineering

Practice Lead, Human Factors
2023 – Present, Calgary, AB

- Conducting investigations and analysing human decision-making with respect to incidents and losses, including motor vehicle collisions, slips, trips and falls, healthcare events, and mining losses.
- Mentoring human factors experts on the application of human factors and fatigue management principles.

Optimal Fit Inc.

President and Principal Human Factors Consultant
2007 – 2023, Calgary, AB

- Provided Human Factors and Ergonomics consulting services to multiple companies to advise on key safety and risk management initiatives including Human Factors in Design projects and Fatigue Risk Management Program development and implementation.
- Developed and launched a corporate program on Human Factors. Technical standards and guidance documents were developed, and training workshops were completed to launch the program.

Alberta Health Services

Senior Patient Safety and Human Factors Specialist
2017 – 2023, Calgary, AB

- Responsible for the design and evaluation of policies, procedures, processes, and tools to contribute to a high-quality and safe healthcare system.
- Provided Human Factors related support to facility design projects, software and device usability, and patient safety leadership training.

Six Safety Systems

Senior Human Factors Specialist
2014 – 2017, Calgary, AB

- Conducted tests and evaluations of eye-tracking and alertness-monitoring technology and web-based analytical interfaces through usability testing, focus groups, user reviews, and field trials.
- Managed and led multiple projects with multiple clients (e.g., trucking, mining, airside maintenance, buses) involving the assessment and development of Fatigue Risk Management Systems and integration of alertness monitoring technologies for fatigue risk assessment.

AtkinsRéalis (formerly Atkins Consulting Canada)

Principal Human Factors Consultant
2017 – 2018, 2013 – 2014, Calgary, AB

- Provided Human Factors design guidance to a Light Rail Transit project, with a focus on task analysis and development/review of operator requirements for the Operations Control Centre and Attendant Stations. This included ergonomic design and alarm management planning.



- Principal Human Factors Consultant for offshore energy operations, supporting the development and implementation of a Human Factors Strategy for the integration of Human Factors in Projects, Operations, and Incident investigations.
- Conducted Human Factors Procedure Screening to identify tasks with human performance considerations. Human Factors Safety Critical Task Analysis was completed to identify hazards and risks.

Alberta Health Services (formerly Calgary Health Region)

Patient Safety – Various Positions

2007 – 2013, Calgary, AB

- Director (Acting) of Patient Safety Learning & Monitoring (2011 to 2013)
- Human Factors Safety Specialist (2010 to 2011)
- Director of Event Reporting and Analysis (2009 to 2010)
- Clinical Safety Leader (2007 to 2009)

CAE Professional Services Canada (formerly Greenley and Associates Inc.)

Regional Manager – Western Canada & Human Factors Senior Consultant

2004 – 2007, Calgary, AB

- Program manager and team leader of six professional consultants providing a range of Project Management services, Human Factors expertise, and Modelling and Simulation capability to military, government, and commercial/industrial sectors.

HumanSystems Incorporated

Team Leader and Senior Human Factors Consultant

1995 – 2004, Guelph, Ontario

- Team leader of the User-Centered Design Group responsible for the conduct and development of projects and proposals related to Defence research and development, occupational ergonomics, and road transportation safety.

PROFESSIONAL AFFILIATIONS

Associations

- Association of Canadian Ergonomists, Member
- Human Factors and Ergonomics Society, Member

Designations

- Certified Human Factors Professional (CHFP), Board of Certification in Professional Ergonomics, 2003
- Canadian Certified Professional Ergonomist (CCPE), Canadian College for the Certification of Professional Ergonomists, 2003
- Project Management Professional (PMP), Project Management Institute (PMI), 2004 – 2020

**PUBLICATIONS**

- Sutton, R.T., Dhillon-Chattha, P., Kumagai, J. and Meurer, D.P. 2023. System Configuration Evaluation for a Province-Wide Clinical Information System Using the eSafety Checklist. *Applied Clinical Informatics*; 14(04): 735-742.
- Kumagai, J.K., and Harnett, M.C. 2019. Data Analysis for Maintenance-of-Way Worker Fatigue. Federal Railroad Administration. Office of Research, Development, and Technology. DOT/FRA/ORD-19/02
- Kumagai, J.K. 2017. Evaluation of an In-Vehicle Drowsiness Detection Device. 10th International Conference on Managing Fatigue.
- Kumagai, J.K. and Harnett, M. 2017. Metrics that Matter: A Case Review of a FRMS Implementation Process in the Oil and Gas Sector. 10th International Conference on Managing Fatigue.
- Fairbanks, R. J. (Terry), Xiao, Y., Wolf, L., Doyle, P., St-Cyr, O., & Kumagai, J. 2012. Human Factors in the Wild: dilemmas and solutions from human factors engineers working in healthcare. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 56(1), 897-900.
- Rudin-Brown CM, Scipione A, Armstrong J, Lai G, Salway A and Kumagai J; 2008. LATCH (Lower Anchors and Tethers for Children) usability in school buses and passenger vehicles; *Traffic Injury Prev*; 9(5); pp. 472-82
- Kumagai, J.K., Kline, D.W., Tryan, J.L., Shorten, J.A. & Jung, G.H. 2006. Far and Near Acuity Standards for Canadian Forces Aircrew. Report to DRDC Toronto. CR#2006-255.
- Scipione, A., Armstrong, J., Lai, G., Salway, A., Kumagai, J. & Rudin-Brown, C. 2006. *Proceedings from the Human Factors and Ergonomics Society 50th Annual Meeting: Usability Study of the Universal Anchorage System (UAS) for Child Restraint Systems (CRS) in School Buses and Passenger Vehicles*. San Francisco, California.
- Darvill, D., Ratzlaff, C., Tryan, J.L., & Kumagai, J.K. 2006. A Website User Interface Evaluation: Methods, Tools and Lessons Learned. Paper presented at the 37th Annual Conference of the Association of Canadian Ergonomists. Banff, Alberta, Canada.
- Kumagai, J.K. & Allard, F. 2003. Effects of Frame of Reference and Point of View on Infantry Wayfinding. Presented at SPIE's 17th Annual International Symposium on Aerospace/Defense Sensing, Simulation, and Controls. Orlando, Florida USA.
- Kumagai, J.K., Massel, L.J., Tack, D.W. & Bossi, L. 2003. Comparison of Helmet Mounted Display Designs in Support of Wayfinding. Presented at SPIE's 17th Annual International Symposium on Aerospace/Defense Sensing, Simulation, and Controls. Orlando, Florida USA.
- Rudin-Brown, C.M., Kumagai, J.K., Angel, H.A., Iwasa-Madge, K.M., & Noy, Y.I., 2003. Usability issues concerning child restraint system harness design. *Accident Analysis and Prevention*, 35, 341-348.
- Suggett, J., Saunders, P., McGill, J., Matthews, M., Adams, B., Kumagai, J.K. & Webb, R., 2002. Aggressive Driving and Other Unsafe Driving Behaviours on Provincial Highways: An Observational Study. Report for the Ministry of Transportation in Ontario.
- Kumagai, J.K., Bryant, D.J., Woods, H.J. & Christian, A.B., 2001. On-Road Study of Behavioural Adaptation to Lane Departure Warnings. Report to Transport Canada, File No. 022ss.T8080-001102.