University of Birmingham

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Reader in Project and Transport Risk Management
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About

After Dr An received a BEng (Hons) and a MSc in Civil Engineering from Xian Jiaotong University, he was a Civil Engineer and then a Chief Civil Engineer in two Design & Research Institutes.

He was a Visiting RF at Birmingham University in 1993, and then he joined Heriot-Watt University as a PhD research student in 1994 and was employed as a RF at Liverpool JM University in 1998.

He joined Coventry University in 2001 and was a lecturer and the Director of the Engineering Design Research Centre (EDRC) until May 2003. He joined the University of Birmingham in June 2003.

He is also a member of staff within Railway Research Centre and Infrastructure Engineering and Management Research Centre.

Dr An has been involved in developing and applying more rational and sustainable safety, risk, reliability and decision-making techniques and methods to facilitate engineering design, construction and maintenance safety and reliability analysis. This work has been sustained over the past twenty years and has resulted in over one hundred technical papers and reports related to railway, road, offshore oil & gas, nuclear, automotive, construction and transportation safety and reliability.

He has delivered many workshops to transfer his research results to industry. He has been awarded one special prize, two first-prizes and two second-prizes in advanced science and technology for his scientific research.

Qualifications

Dr An is Honorary Professor in Xian Economics & Management University; Associate Editor for World Journal of Engineering; member of the Editorial Board for International Journal of Engineering and Technology; Member of the Editorial Board for International Journal of Project Organisation and Management;

Member of the Editorial Board for International Journal of Information Sciences and Management; Member of the Editorial Board for the Open Transportation Journal; Research Project Assessor for the Research Committee of City University, Hong Kong; member of International Advisory Board for International Conferences on Human Factors in Design, Safety and Management; International Advisory referee for International Conference on Product Development and Reliability.

He currently reviews research papers for more than 20 international journals and assess research grant proposal for the EPSRC. He has been invited to give many seminars for researchers and the industry, and keynote lectures at the international conferences. He is an acting Editor for the “Handbook of Safety Risk and Reliability Assessment in Construction Projects”.

Teaching

Engineering design for safety, risk and reliability assessment techniques, construction management, construction project risk management, Transportation safety management, appropriate techniques in developing countries, construction and seismic design of buildings, health & safety management on construction sites, railway safety management & risk assessment.

PhD opportunities

Research

Dr An’s expertise is in the development of safety risk and reliability assessment techniques so that safety and reliability aspects can be taken into account in the engineering design, construction and maintenance processes, and the development of the advanced procedures for minimising risks by improved design aspects, construction and maintenance strategies based on safety and reliability assessment.

His research has been carried out in collaboration with a wide range of industrial partners including London Underground Ltd (LUL), Rail Safety & Standard Board (RSSB), Network Rail, Tube Lines Ltd, Metronet SSL, Serco Assurance Ltd, Risktec Solutions Ltd, Balfour Beatty, TACO, Eurostar (UK) Ltd, Amey Plc, Health & Safety Executive (HSE), International Mechanics Technology UK Ltd, Ford Motor Company, Jaguar, Land Rover, TRW Conekt, MIRA, Australia Manufacturing Company PTY Ltd, JOY Machinery UK Ltd, Shell, BP, British Gas, Sir Robert McAlpine, Scott Wilson, Ernst & Young, Faithful & Gould, Currie & Brown, Turner & Townsend, BAE systems and British Highways Agency etc. and the research work has been funded from a variety of sources including industry, the research councils and government agencies.

Other activities

Current Projects

Further details of projects listed can be located on the group research page.

- Application of Fuzzy Reasoning Approach to the Railway Safety Risk Assessment Process
- Improved Rail Safety-risk Assessment Study
- Reliability analysis of high speed trains
- Construction Project Risk Assessment at Appraisal – The FRAP Approach
- A Study on Reliability and Maintanence of Railway Vechicles.
- An Intelligent Safety Prediction System for Rail Design and Maintenance
- Development of Risk Assessment Models and Tools for Rail Construction and Maintenance
- Prediction of Traffic Noise Risk Using GIS
- Managing Risks in the Construction Projects
- A Risk Assessment Based on Decision Making at the Construction Planning Stage
- Cost-reliability improvement of automotive products and components
- Risk assessment in road/rail interfaces
- Reliability Prediction Models for Reliability Assessment of Ageing Bridges

Publications

M An, S Huang, CJ Baker, 2007. Railway risk assessment - the FRA and FAHP approaches: A case study of shunting at Waterloo depot. Proceedings of the Institute of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit 221(3), 365-384.

S Huang, M An, CJ Baker, 2007. Railway safety risk assessment using FRA and FAHP approaches. Proceedings of 2nd Institution of Engineering and Technology Conference on System Safety, London, UK, 181-186. ISBN 9780863418631.

M An, 2007. Application of computer multiple perspective modeling and simulation to engineering product design. International Journal of Engineering and Technology, 14(3), 36-48.

Y Chen, M An, S Huang, CJ Baker, 2007. Application of FRA and FAHP approaches to railway maintenance safety risk assessment process. Proceedings of 10th International Conference on Railway Engineering (CD format)), London, UK. ISBN 09476446110.

J Zeng, M An, NJ Smith, 2007. Application of a fuzzy based decision making methodology to construction project risk assessment. International Journal of Project Management 25(6), 589-600.

M An, 2007. Risk assessment in railway safety management. International Journal of Engineering and Technology 14(1), 45-56.

H Ahmad, M An, M Gaterell. 2007. Development of a KM model to simplify knowledge management implementation in construction projects. Proceedings of 23rd Conference on Construction Management (ARCOM 2007), Vol. 2, 515-524, Belfast, UK. ISBN 9780955239007.

M An, W Lin, A Stirling, 2006. Fuzzy-reasoning-based approach to qualitative railway risk assessment. Proceedings of the Institute of Mechanical Engineers, Part F, Journal of Rail and Rapid Transit 220(2), 153-167.

S Huang, M An, CJ Baker. 2006. FRA and FAHP approach to risk analysis – a case study. World Journal of Engineering, 4(2), 36-48.

M An, 2006. Railway risk assessment: a case study of staff risk at Victoria Line in London underground. International Journal of Engineering and Technology, 13(4), 42-60.

NJ Smith, M An, 2006. Risk analysis for construction tomorrow. Proceedings of 20th IPMA world congress on project management, Vol. 1, 754-758, Shanghai, China. ISBN 07111047036.

BB Wilson, M An, 2006. Barriers to implementation of construction and demolition waste management approaches. Proceedings of the World Conference on Accelerating Excellence in the Built Environment (WCAEBE) (CD format), Birmingham, UK. ISBN 0957346721.

J Zeng, M An, AHC Chan, 2006. A methodology for risk response decision making in the construction process (In Proceedings of the World Conference on Accelerating Excellence in the Built Environment (WCAEBE) (CD format), Birmingham, UK. ISBN 0957346721.

BB Wilson, M An, H Evdorides, 2006. The effects of building and planning regulations on construction and demolition waste management. Proceedings of the 22nd Conference on Construction Management (ARCOM 2006), Birmingham, UK, 339-346, ISBN 0955239001.

S Huang, M An, M Burrow, G Ghataora, CJ Baker, 2006. A potential application of the fuzzy reasoning approach to railway foundation maintenance. Proceedings of International Conference of Railfound Engineering, 136-152, Birmingham, UK. ISBN 0704426005.

A Umar, M An, JB Odoki, 2006. Application of principles of inherently safe design methodology into the development of offshore platforms. Proceedings of Safety and Reliability for Managing Risk: the International Risk Safety and Reliability Conference (ESREL 2006), 2533-2540, Estoril, Portugal. ISBN 9780415423151.

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