

Centre for Risk Research Annual Report 2008

Staff Changes: Dr. Alasdair Marshall and Dr. Max Chipulu were appointed as lecturers in Risk Management and Management Science, respectively.

Conference organisation:

1. Joint organiser, QFRMC Conference, Dynamic Consumer Risk Modelling, Edinburgh (LT).
2. Organiser, QFRMC Workshop. Loss Given Default Models, Southampton (LT)
3. Joint organiser, International Conference on Data Mining, Las Vegas (SL).
4. Associate sponsors, 14th Intl Conf. on Gambling and Risk Taking (Lake Tahoe, USA) (JJ)

Research Students: 22 PhD students working on risk related topics, 4 graduated and 4 new students.

MSc Programmes: Students enrolled on risk related Masters Programmes in October 2008: 27 for Corporate Risk and Security Management and 36 for Risk Management. Professional accreditation by Chartered Insurance Institute secured for both programmes (MS).

Research dissemination/measures of esteem:

Risk related publications: 5 books; 39 papers presented at international conferences; 32 published in refereed journals and 1 in professional journals; 7 chapters in edited volumes; 6 working papers, 1 research report..

Presentations:

1. Delivered invited presentation on 50 years of data mining & OR to OR50 conference (BB).
2. Plenary Speaker, Applications of data mining in finance, University of Santiago, Chile (LT)
3. Invited speaker, 'Hot Topics' seminar series, Centre for Enterprise Research and Innovation, Univ. of Portsmouth (IH).
4. Keynote address on betting market efficiency, Gambling Research Network, UCL (JJ)
5. Invited seminar on risk taking biases in real estate management, University of Cambridge (JJ).

Established Links:

1. Developing links with Technical Univ. of Denmark, Ozyegin Univ. & , Bilkent Univ. (Turkey) & Univ. of Lisbon for modelling vehicle routing/distribution problems (TB).
2. Link with Hamburg Univ., exploring new approaches to modeling speculative market behaviour (MS,JJ).
3. Developing links with Univ. of Hamburg, exploring ensemble learners within speculative markets (SL).
4. Continued links with the Univ. of Sydney, exploring optimal Kelly wagering strategies (JJ, MS).
5. Link with Norwegian Univ. of Science and Tech, classifying approaches to handle risk (MS, JJ)
6. Link with the National Chengchi Univ, Taiwan, speculative market structure, ecology, and individual behaviour: An agent-based computational modelling approach (MS).
7. Link with the Univ. of Melbourne, conditional SVM approach to event prediction (JJ, MS).

Editorial Boards: Machine Learning (BB); Forensic Science Policy & Management (ID). Pragmatics & Cognition (ID); Project Management Jnl and International Jnl of Project Management (TW)
Journal of Gambling, Business and Economics (JJ); Computers & Operations Research (TB)

Editing: Co-editor, OR Insight (TB); Joint Editor, Jnl of the Operational Research Society (TW); Editor, special issue of Machine Learning on swarm intelligence for knowledge discovery (BB); Annals of Information Systems on data mining (SL) and JORS on transportation, logistics and the environ. (TB).

Other research dissemination:

1. Developing project to study uncertainty management strategies within UK Local Authorities (AM, SW).
2. Research Members' Advisory Group of Project Management Institute (TW).
3. Panel member for expert symposia on Complexity in Projects, PMI (TW)
4. Member of EPSRC College and Treasurer of UK Committee of Professors in OR (TW)
5. End of award report, 'Operational risks and major infrastructure projects', Inst. of Civil Engineers (SW).
6. Hosted visiting academics from Univ. of Melbourne, Sydney and Hamburg, exploring techniques for modeling outcomes of competitive events (MS, JJ).
7. The Centre hosted an active seminar series, involving both internal and external speakers throughout 2008.
8. Continued development of major database of over 100k separate betting markets (FM, JJ, MS)

Other measures of esteem:

1. Windows of Science Award, European Aerospace Office of Research & Development (ID)
2. Session Chair IFORS 2008, Johannesburg, and INFORMS, Washington (LT).
3. Reviewer for end of award research reports for The Gambling Commission (JJ)
4. External PhD examiner, forecasting sports event outcomes, Univ. of Sydney (JJ)
5. External PhD assessor, betting market efficiency, Bar Ilan Univ., Israel (JJ)
6. Beale medal (life time achievement award in OR) awarded by the OR Society (LT)

Current Research grants :

1. Quantitative Risk Management Centre- risk management in the personal financial sector (£565k, of which £155k to Southampton, EPSRC, LT)
2. Efficiency of sports betting markets (£105k, International Software Services, JJ, MS). 2. Measuring the true degree of inefficiency in a speculative financial market (£2k, U. of Hamburg, JJ, MS).
3. Enhancing organisational performance by developing new mathematical/statistical approaches for improving forecasts of competitive events (£83k, EPSRC, MS).
4. Basel II-compliant credit risk modelling for low-default portfolios (£80k, EPSRC and SAS, CM, BB, LT).
5. Understanding human perception of environmental conflict (£62k, ESRC/EPSRC, IH)
6. Intermodal transportation networks with environmental considerations (£29k, Univ. of Southampton, TB)
7. Estimating the cost of major public projects (\$30,000, PMI and NTNU University of Trondheim, TW).
8. Early warning signs in complex projects (\$30k joint NTNU/RMIT/PMI, TW)
9. Operational risks and major infrastructure projects (£23k, Institute of Civil Engineers, SW).
10. Storage and stacking logistics for containers: approaches to handle uncertainty (£7.5k, Chartered Inst. of Logistics and Transport (UK), YW)
11. Towards a methodology for measuring the true degree of inefficiency in speculative financial markets (£4k, U. of Hamburg Staff Exchange Prog., MS, JJ).
12. Random Forests for competitive event prediction. (£4k, British Academy, MS)
13. Predicting competitive event outcomes (£2k, Hamburg Uni. Staff Exchange Prog., JJ, MS)
14. Gauging resilience of CSR in organisations undergoing change (£2k, The Achilles Group, IH).
15. The effect of temperature in speculative markets (£1k: Sc. of Mgt, Univ. of Southampton., MS)

Commercial/external activities :

Advice provided:

1. Credit risk management strategy HBOS, KBC and Dexia (BB).
2. Data mining and predictive analytics, for SAS (BB)
3. Impact of informed traders on betting market turnover, for US investors (JJ)
4. Improving decision making of soldiers, for the Army Foundation College (ID).
5. Reputation risk, for Rolls Royce, BBC, Old Mutual, Syngenta, CIMA (GH).
6. Risk appetite/profiling for Hants. C.C. & the Identity and Passport Service (GH).
7. Systems dynamics modelling for Home Office and ESC Lille (TW)
8. Project risk for Strathclyde University (TW).

Courses provide/designed

1. Risk management courses delivered for Ontario Power Generation Inc (Toronto) and Volvo Power Train (Goteborg and Talloires)(CBC)
2. Public risk management courses delivered in Houston, London, Madrid, Copenhagen and Croatia (CBC).
3. Enhanced decision making training for MoD (ID).
4. Managing risk, the human factor course delivered to senior managers of Bank SETA (JJ).
5. Designed and delivered outdoor, graduate selection programme, involving aspects of risk taking, for PricewaterhouseCoopers (MA, CC, JJ).

Other commercial/external activities

1. Expert witness in firearms forensic decision making trial (ID)
2. Member of 'Expert Working Group on Human Factors in Fingerprint Analysis' (ID)
3. Collaborative work with Daimler AG , exploring machine learning methods for decision making (SL).
4. Simulation analysis for Milwaukee Children's Hospital (TW)
5. Developed links with Cognitive Consultants International and World Spreads to examine biased manner in which investors employ information (MS, JJ)
6. Developed patented new financial instrument for risk management (JJ).
7. Continuing professional work with European Association for the Study of Gambling, the European Association of Decision Making, the International Association for Research in Economic Psychology and the Society for the Study of Gambling (JJ).
8. Lead examiner (to Aug. 2008) in Principles of Risk, Institute of Risk Management (SW).
9. Member of IRM special interest group on PPP/PFI where risk analysis/management is a major consideration (SW).

Key to initials used in Centre for Risk Research Annual Report

AM Dr. Alasdair Marshall; BB Bart Baesens; CBC Professor Chris Chapman; CC Professor Con Connell ; CM Dr. Christophe Mues; FM Dr. Frank McGroarty; GH Gary Honey; ID Dr. Itiel Dror; IH Dr. Ian Harwood; JJ Professor Johnnie Johnson; LT Professor Lyn Thomas; MA Dr. Melanie Ashleigh; MS Dr. Ming-Chien Sung; SL Dr. Stefan Lessmann; SW Professor Stephen Ward; TB Dr. Tolga Bektas; TW Professor Terry Williams; YW Dr. Yue Wu.