Call for Papers
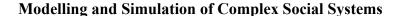
Modelling and Simulation of Complex Social Systems

To be published in the [Intelligent Systems Reference Library](#), book series, Springer (2013)

Editors

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Introduction

The book is dedicated to discuss the theories, practices and applications of mathematical modeling and simulation in complex social systems. This will help the policy makers strategize their policy for the optimal social returns and hence improve quality of life of people.

Objective of the book

Many of the social issues of the 21st century are captured in the studies of criminology (crime, safety, security, privacy), health sciences (harm reduction, disease spread, mental health, tractable public healthcare), and urban dynamics (homelessness, unemployment). Research into these areas will have a profound impact on the quality of life for everyone by reducing crime, reducing harm and addiction, enhancing safety and security while maintaining privacy, and improving health and welfare. In the past, much of the quantitative research in these areas focused on applying statistical techniques to determine relationships. Although these studies provide great insight into these issues, they are limited in their ability to model the complicated dynamics that arise from the overlap between social issues, the spatiotemporal nature of social systems, and the dynamic nature of social interactions. Furthermore, previous techniques have been limited in their ability to predict the impact of various policy decisions. The unifying theme of this book is the modelling of the complex dynamics that drive the linked epidemiologies of crime, disease, homelessness and other social ills in urban neighborhoods.

Target Audience

The audiences of this book are students and new generation researchers who examine social problems can be understood and addressed through mathematical and computational modelling. Specifically, audiences who are broadly involved in the domains of mathematics, computer science, economics, criminology, health science, gerontology, geography, and other applied informatics domains.

Topics

Chapters should be written in American or British English and in a manner readable for both specialists and non-specialists. Recommended topic areas include, but are not limited to:

Computational Criminology

- Crime pattern recognition and modeling tools
- Offender social network analysis (infrequent to frequent offenders)
- Crime generators and crime attractors
- Forecasting crime and the impact of crime

- Drug, gang and special crime analysis and modeling tools
- Dynamic information systems analysis for crime and place
- Privacy and security in crime and justice system data
- Spatial and temporal analysis and software tools
- Law enforcement decision support systems
- Cybercrime
- Data mining and data fusion of crime - urban databases

Health Informatics

- Design and development methodologies for healthcare IT
- Decision support systems
- Behavioral healthcare
- ICT, ageing and disability
- Healthcare management systems
- Electronic health records and standards
- Cognitive informatics
- Software systems in medicine
- Development of assistive technology
- Mobile technologies for healthcare applications
- Practice-based research methods for healthcare IT
- Pervasive health systems and services
- Clinical problems and applications

Terrorism Informatics

- Terrorism related analytical methodologies and software tools
- Terrorist incident chronology databases
- Terrorism root cause analysis
- Social network analysis (radicalization, recruitment, conducting operations), visualization, and simulation
- Forecasting terrorism
- Measuring the impact of terrorism on society
- Measuring the effectiveness of counter-terrorism campaigns
- Crime intelligence and cyberspace crime investigation
- Immigration and security

Computational Geography

- Geology and earth system simulation and modelling
- Climate change and the global environment
- Modelling uncertainty in geo-spatial information
- Geo-marine life
- Geospatial technologies for disaster management
- Modelling and analysis of terrains
- Virtual modelling of large geographic areas
- Time-geography modelling
- Special applications: 3D cadastre, traffic management, etc.

Mathematical Finance and Economics

- Behavioral economics/finance
- Computational methods
- Investment management
- Market dynamics and prediction
- Algorithmic trading
- Economic / financial crisis
- Financial econometrics
- Financial market microstructure
- International finance
- Stochastic control and investment

Submission information

Academics, researchers and practitioners are invited to submit by 5 March 2012, a 2-page manuscript proposal detailing the background, motivations and structure of their proposed chapter. Authors of accepted proposals will be notified by 19 March 2012. For chapter preparation, authors must submit LaTeX files and follow the instructions listed on

http://www.springer.com/series/8578?detailsPage=editorialBoard

Full chapters will be due on 18 June 2012 and should be of around 5,000 words in length and/or 12 pages long. All chapters will be reviewed on a double-blind basis. The book is to be published in the "Intelligent Systems Reference Library" book series, Springer. This publication is anticipated to be released in early 2013.

Important dates

2-page Proposal Submission Deadline:	5 March 2012
Notification of Proposal Acceptance:	19 March 2012
Full Chapter Submission (in Word or PDF)	18 June 2012
Notification of Full Chapter Acceptance	30 July 2012
Revised Chapter Submission;	13 August 2012
Final Notification of Acceptance;	3 September 2012

Submission of manuscripts

Inquiries (e-mail) and submissions can be forwarded electronically to either:

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