Research output

Conditioning in probabilistic programming

Privacy in elections: How small is "small"?

Algebra for quantitative information flow

Formal analysis of the information leakage of the DC-nets and crowds anonymity protocols

Reasoning about distributed secrets

Probabilistic rely-guarantee calculus

Axioms for information leakage

Program refinement, perfect secrecy and information flow

Schedulers and finishers: On generating the behaviours of an event structure
Prinsys - On a quest for probabilistic loop invariants

Probabilistic concurrent Kleene algebra

Statistical model checking of wireless mesh routing protocols

Preface: Special issue QFM 2009

A Kantorovich-monadic powerdomain for information hiding, with probability and nondeterminism

A process algebra for wireless mesh networks

A rigorous analysis of AODV and its variants

Automated analysis of AODV using UPPAAAL

Operational versus weakest precondition semantics for the probabilistic guarded command language

Compositional refinement in agent-based security protocols

Model exploration and analysis for quantitative safety refinement in probabilistic B

Continual and explicit comparison to promote proactive facilitation during second computer language learning
On probabilistic Kleene algebras, automata and simulations

Towards an algebra of routing tables


An expectation transformer approach to predicate abstraction and data independence for probabilistic programs

Compositional closure for Bayes risk in probabilistic noninterference

Linear-invariant generation for probabilistic programs: Automated support for proof-based methods

The Thousand-and-one cryptographers

YAGA: automated analysis of quantitative safety specifications in probabilistic B

Graphical modelling for simulation and formal analysis of wireless network protocols

Security, probability and nearly fair coins in the cryptographers’ café

Sums and lovers: Case studies in security, compositionality and refinement
The secret art of computer programming

Using probabilistic Kleene algebra pKA for protocol verification

CaVi - Simulation and model checking for wireless sensor networks

Proofs and refutations for probabilistic refinement

Results on the quantitative μ-calculus qMμ
McIver, A. & Morgan, C. 1 Jan 2007 In : ACM Transactions on Computational Logic. 8, 1, p. 1-43 43 p., 3

Automating refinement checking in probabilistic system design

Formal techniques for the analysis of wireless networks

A Novel Stochastic Game Via the Quantitative μ-calculus

Developing and reasoning about probabilistic programs in pGCL

Programming-logic analysis of fault tolerance: expected performance of self-stabilisation

Quantitative refinement and model checking for the analysis of probabilistic systems
Quantitative μ-calculus analysis of power management in wireless networks
15 p. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); vol. 4281 LNCS)

Using probabilistic kleene algebra for protocol verification
McIver, A. K., Cohen, E. & Morgan, C. C. 2006 Relations and Kleene Algebra in Computer Science - 9th Int. Conf. on
Relational Methods in Computer Science and 4th Int. Workshop on Applications of Kleene Algebra, RelMiCS/AKA 2006,
Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); vol. 4136 LNCS)

Probabilistic guarded commands mechanized in HOL

Memoryless strategies for stochastic games via domain theory

An elementary proof that Herman's Ring is \( \Theta(N^2) \)

Probabilistic Guarded Commands Mechanized in HOL
95-111 17 p.

Abstraction and refinement in probabilistic systems

Abstraction, refinement and proof for probabilistic systems

Compositional specification and analysis of cost-based properties in probabilistic programs

Development via refinement in probabilistic B - Foundation and case study
Hoang, T. S., Jin, Z., Robinson, K., McIver, A. & Morgan, C. 2005 In : Lecture Notes in Computer Science. 3455, p. 355-
373 19 p.

Towards automated proof support for probabilistic distributed systems
McIver, A. K. & Weber, T. 2005 In : Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial

Cost-based analysis of probabilistic programs mechanised in HOL

Deriving probabilistic semantics via the 'weakest completion'
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Almost-certain eventualities and abstract probabilities in the quantitative temporal logic qTL

Probabilistic invariants for probabilistic machines
Hoang, T. S., Jin, Z., Robinson, K., McIver, A. & Morgan, C. 2003 In : Lecture Notes in Computer Science (including
Probabilistic termination in B

Programming Methodology

Quantitative program logic and expected time bounds in probabilistic distributed algorithms

Games, probability, and the quantitative μ-calculus qMμ

Cost analysis of games, using program logic

A generalisation of stationary distributions, and probabilistic program Algebra

Partial correctness for probabilistic demonic programs

Almost-certain eventualities and abstract probabilities in quantitative temporal logic

Demonic, angelic and unbounded probabilistic choices in sequential programs

A Generalisation of Stationary Distributions and Probabilistic Program Algebra

Quantitative program logic and performance in probabilistic distributed algorithms

Reasoning about efficiency within a probabilistic μ-calculus

Probabilistic models for the guarded command language

Unifying wp and wlp
Probabilistic Predicate Transformers

Refinement-oriented probability for CSP

Software, who needs it?

A question of identity

Finitely generated non-Hopf modules

Enumerating finite groups