Curriculum Vitae
Mohamed Kaâniche

Current Status
Directeur de Recherche at LAAS-CNRS, Toulouse, France
Research Group: Dependable Computing and Fault Tolerance

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Personal Information:
Date, and Place of Birth: 15th December 1963, Sfax, Tunisia
Nationality: French
Marital Status: Married, 1 child

Education and Qualifications
• Jul. 1987: Certified Engineer Degree, National School of Civil Aviation, Toulouse.

Appointments
• Mar. 1997 – Feb. 1998: Visiting research Assistant Professor, CRHC, University of Illinois at Urbana-Champaign IL, USA

Research Interests
• Resilience and dependability evaluation using stochastic models and measurements: fault tolerant computing architectures, critical infrastructures, mobile systems.
• Quantitative assessment of computer systems security
• Analysis of computer failure data, Internet attacks and vulnerabilities
European and National Research Projects

- I have been the Principal Investigator for LAAS-CNRS for two IST European projects:
  - HIDENETS “Highly DEpendable IP-based NETworks and Services” IST-FP6-26979 (2006-2009)

- I have contributed to 9 cooperative research projects and two networks of excellence funded by the European Commission, including:

- I have been the Principal Investigator for LAAS-CNRS for several national cooperative projects including:
  - DALI “Design and Assessment of Application Level Intrusion detection systems”, ANR project – Programme ARPEGE (2009-2011)

Society activities

- Program Committee (Co-)Chair

- Program Committee member of major dependability-related conferences and workshops including DSN, EDCC, PRDC, SRDS, LADC, ISSRE, SAFECOMP, FTCS, ICDCS, HASE, SERENE.

- Workshops and conference tracks organization
  - DSN Conference Coordinator : DSN-2007, Edinburgh, UK

- Conference/Workshop Steering Committee Member

- IEEE Security & Privacy: Co-Editor of the “It All Depends” Department with Aad van Moorsel
Teaching
• I give a course on dependability related topics focusing on modeling and evaluation (45 hours per year) in engineering schools and at the university of Toulouse

Consultancy for Industry
• I have served as a consultant for several companies including CNES, CENA, ESA-ESTEC, MAP-Systèmes, Rockwell-Collins.

Projects and Research Proposals Evaluation
• I have served as an expert for the European commission for the evaluation of the IST SAFE-PC project (2001-2004)
• I have served as an expert for the evaluation of research proposals submitted to: the Research Grant Council (Hong-Kong); DFG/NWO bilateral research program (Germany, Norway), MIUR (Italian Ministry for Education, University and Research), DIGITEO-RTRA (Paris, France), PRST MISN program (Nancy, France)

Publications
A more complete list of publications is available at: http://dbserver.laas.fr/pls/LAAS/publis.rech_auteur?langage=FR&clef=1077

Journal papers
• J.C. Laprie, K. Kanoun, C. Béounes, M. Kaâniche
  The KAT (Knowledge-Action-Transformation) Approach to the modeling and evaluation of reliability and availability growth

• K. Kanoun, M. Kaâniche, C. Béounes, J.C. Laprie, J. Arlat
  Reliability growth of fault-tolerant software

• K. Kanoun, M. Kaâniche, J.C. Laprie
  Qualitative and quantitative reliability assessment

• K. Kanoun, M. Kaâniche, J.C. Laprie
  Fiabilité du logiciel : de la collecte des données à l’évaluation probabiliste (in French)

• N. Fota, M. Kaâniche, K. Kanoun
  Dependability evaluation of an air traffic control computing system

• R. Ortalo, Y. Deswarte, M. Kaâniche
  Experimenting with quantitative evaluation tools for monitoring operational security

• M. Kaâniche, J-C. Laprie, J-P. Blanquart
  A framework for dependability engineering of critical computing systems
• **M. Kaâniche, K. Kanoun, M. Rabah**  
  Multi-level modeling approach for the availability assessment of e-business applications  

• **M. Kaâniche, Y. Le Guédart, J. Arlat, T. Boyer**  
  An investigation on mutation strategies for fault injection into RDD-100 models  

• **M. Martinello, M. Kaâniche, K. Kanoun**  
  Web service availability - impact of error recovery and traffic model  
  Reliability Engineering and System Safety, Vol.89, N°1, pp.6-16, July 2005

• **E. Alata, I. Alberdi, P. Owezarski, V. Nicomette, M. Kaâniche**  
  Internet attacks monitoring with dynamic connection redirection mechanisms  

• **M. Kaâniche, P. Lollini, A. Bondavalli (1), K. Kanoun**  
  Modeling the Resilience of Large and Evolving Systems  

• **A. Abou El Kalam, Y. Deswarte, A. Baina, M. Kaâniche**  
  PolyOrBAC: a security framework for critical infrastructures  

• **V. Nicomette, M. Kaâniche, E. Alata, M. Herrb**  
  Set-up and deployment of a high-interaction honeypot: experiment and lessons learned  

• **A. Bondavalli, O. Hmouda, M. Kaâniche, P. Lollini, I. Majzik, H. P. Schewevel**  
  The HIDENETS holistic approach for the analysis of large critical mobile systems  

• **A.E. Rugina, K. Kanoun, M. Kaâniche**  
  Software dependability modeling using AADL (Architecture Analysis and Design Language)  

### Books

  Dependability Handbook (in French)  

  Software Components and Dependability. COTS integration (in French)  

### Book Chapters

• **J.C. Laprie, C. Béounes, M. Kaâniche, K. Kanoun**  
  The transformation approach to the modeling and evaluation of the reliability and availability growth of systems in operation  

• **N. Fota, M. Kaâniche, K. Kanoun**  
  Incremental approach for building stochastic Petri nets for dependability modeling  

• **A.E. Rugina, K. Kanoun, M. Kaâniche**  
  A system dependability modeling framework using AADL and GSPNs  
- M. Martinello, M. Kaaniche, K. Kanoun
  Performability Evaluation of Web-based Services

- O. Hamouda, M. Kaaniche, K. Kanoun
  Dependability Assessment of Two Network Supported Automotive Applications

### Conference Papers

- J.C. Laprie, C. Béounes, M. Kaâniche, K. Kanoun
  The transformation approach to the modeling and evaluation of the reliability and availability growth

- M. Kaâniche, K. Kanoun
  The discrete-time hyperexponential model for software reliability growth evaluation
  3rd IEEE International Symposium on Software Reliability Engineering (ISSRE’92), IEEE Computer Society, Research-Triangle Park (USA), Octobre 1992, pp.64-75

- K. Kanoun, M. Kaâniche, J.C. Laprie, S. Metge
  SoRel: a tool for reliability growth analysis and prediction from statistical failure data
  23rd IEEE International Symposium on Fault-Tolerant Computing (FTCS’23), IEEE Computer Society, Toulouse (France), Juin 1993, pp.654-659

- M. Kaâniche, K. Kanoun
  Software failure data analysis of two successive generations of a switching system
  12th IFAC International Conference on Computer Safety, Reliability and Security (SAFECOMP’93), Poznan (Pologne), Octobre 1993, pp.230-239

- K. Kanoun, M. Kaâniche, J.C. Laprie
  Experience in software reliability: from data collection to quantitative evaluation
  4th IEEE International Symposium on Software Reliability Engineering (ISSRE’93), IEEE Computer Society, Denver (USA), Novembre 1993, pp.234-245

- M. Kaâniche, K. Kanoun, M. Cukier, M.R. Bastos Martini
  Software reliability analysis of three successive generations of a switching system

- M. Dacier, Y. Deswarte, M. Kaâniche
  Models and tools for quantitative assessment of operational security
  12th Int. Information Security Conference (IFIP SEC’96), Samos (Grèce), Mai 1996, pp.177-186

- N. Fota, M. Kaâniche, K. Kanoun, A. Peytavin
  Safety analysis and evaluation of an air traffic control computing system
  15th International Conference on Computer Safety, Reliability and Security (SAFECOMP’96), Springer-Verlag, Vienne (Autriche), Octobre 1996, pp.219-229

- M. Kaâniche, K. Kanoun
  Reliability of a commercial telecommunications system
  Rapport LAAS N°96130
  7th International Symposium on Software Reliability Engineering (ISSRE’96), IEEE Computer Society, New York (USA), October 1996, pp.207-212

- N. Fota, M. Kaâniche, K. Kanoun
  A modular and incremental approach for building complex stochastic Petri net models
  1st International Conference on Mathematical Methods in Reliability (MMR’97), Bucharest (Roumanie), September 1997, pp.151-158
• R. Ortalo, Y. Deswarte, M. Kaâniche
  Experimenting with quantitative evaluation tools for monitoring operational security
  6th IFIP International Conference on Dependable Computing for Critical Application (DCCA-6), Garmisch (Allemagne), 5-7 March 1997, pp.289-310

• M. Kaâniche, L. Romano, Z. Kalbarczyk, R. Iyer, R. Karcich
  A hierarchical approach for dependability analysis of a commercial cache-based RAID storage architecture

• N. Fota, M. Kaâniche, K. Kanoun
  Dependability evaluation of an air traffic control computing system

• Y. Deswarte, M. Kaâniche, P. Corneillie, J. Goodson
  SQUALE dependability assessment criteria
  18th International Conference on Computer Safety, Reliability and Security (SAFECOMP’99), Toulouse, Sept. 1999

• M. Kaâniche, J.-C. Laprie, J.-P. Blanquart
  Dependability engineering of complex computing systems

• M. Kaâniche, J.-C. Laprie, J.-P. Blanquart
  A dependability-explicit model for the development of computing systems

• M. Kaâniche, Y. Le Guédart, J. Arlat, T. Boyer
  An investigation on mutation strategies for fault injection into RDD-100 models
  20th International Conference on Computer Safety, Reliability and Security (SAFECOMP’2001), Budapest (Hongrie), 26-28 Sept. 2001

• M. Kaâniche, K. Kanoun, M. Rabah
  A framework for modeling availability of e-business systems

• C. Simache, M. Kaâniche
  Measurement-based availability analysis of Unix systems in a distributed environment

• C. Simache, M. Kaâniche
  Event log based dependability analysis of Windows NT and 2K systems

• M. Kaâniche, K. Kanoun, M. Martinello
  User-perceived availability of a web based travel agency
  2003 IEEE International Conference on Dependable Systems and Networks (DSN’2003), International Performance and Dependability Symposium, San Francisco (USA), 22-25 June 2003, pp.709-718
• M. Martinello, M. Kaâniche, K. Kanoun
  Web service availability - Impact of error recovery
  22nd International Conference on Computer Safety, Reliability and Security (SAFECOMP'2003),
  Edinburgh, Ecosse (Royaume-Uni), 23-26 Sept. 2003, pp.165-178

• E. Alata, M. Dacier, Y. Deswarte, M. Kaâniche, K. Kortchinsky (2), V. Nicomette, V. H. Pham, F. Pouget
  Collection and analysis of attack data based on honeypots deployed on the internet
  First Workshop on Quality of protection (QoP 2005), Security Measurements and Metrics, Milan
  (Italie), 13 Sept. 2005 (Springer-Verlag)

• C. Simache, M. Kaâniche
  Availability assessment of SunOS/Solaris Unix Systems based on Syslogd and wtmpx logfiles : a case
  study
  2005 IEEE Pacific Rim International Symposium on Dependable Computing (PRDC'2005), Changsha,

• G. Dondossola, G. Deconinck, F. Di Giandomenico, S. Donatelli, M. Kaâniche, P. Verissimo
  Critical Utility Infrastructural Resilience
  International Workshop on Complex Network and Infrastructure Protection (CNIP'2006), Rome

• G. Dondossola, G. Deconinck, F. Di Giandomenico, S. Donatelli, M. Kaâniche, P. Verissimo (5)
  Critical Utility Infrastructural Resilience
  Workshop on Research Directions for Security and Networking in Critical Real-Time and Embedded
  Systems, San Jose (USA), 4 April 2006, 4p.

• M. Martinello, M. Kaâniche, K. Kanoun, C. Aguilar-Melchor
  Modeling user perceived unavailability due to long response times
  11th IEEE Workshop on Dependable, Parallel, Distributed Network centric Systems (DPDNS’06),
  Rhodes (Grèce), 25-29 April 2006, 8p.

• M. Martinello, M. Kaâniche, K. Kanoun
  Modeling service availability in web clusters architectures

• M. Kaâniche, E. Alata, V. Nicomette, Y. Deswarte, M. Dacier
  Empirical analysis and statistical modeling of attack processes based on honeypots
  2006 IEEE/IFIP International Conference on Dependable Systems and Networks (DSN-2006),
  Workshop on Empirical Evaluation of Dependability and Security (WEEDS), Philadelphia (USA), 25-

• J. C. Laprie, K. Kanoun, M. Kaâniche
  Modeling cascading and escalating outages in interdependent critical infrastructures
  2006 IEEE/IFIP International Conference on Dependable Systems and Networks (DSN-2006), Fast

• M. Martinello, M. Kaâniche, K. Kanoun, C. Aguilar-Melchor
  Modeling service unavailability due to long response time for single and multiple server queueing
  systems
  Congresso da Sociedade Brasileira de Computação Tecnologia da Informação e Desenvolvimento
  Regional, Campo Grande (Brésil), 14-20 July 2006, 20p.

• E. Alata, V. Nicomette, M. Kaâniche, M. Dacier
  Lessons Learned from the deployment of a high-interaction honeypot
  6th European Dependable Computing Conference (EDCC-6), Coimbra (Portugal), 18-20 oct. 2006,
  pp.39-44.

• A. Abou El Kalam, Y. Deswarte, A. Baina, M. Kaâniche
  Access Control for Collaborative Systems: a Web Services Based Approach
  International Conference on Web Services (ICWS 2007), Dallas (USA), IEEE Computer Society Press,
  Salt Lake City (UT, USA), 9-13 July 2007, pp. 1064-1071
• **J-C Laprie, K. Kanoun, M. Kaâniche**
  Modeling Interdependencies between the electricity and Information Infrastructures

• **E. Alata, I. Alberdi, P. Owezarski, V. Nicomette, M. Kaâniche**
  Shark: spy honeypot with advanced redirection kit
  IEEE Workshop on Monitoring, Attack detection, and Mitigation (MonaM2007), Toulouse (France), 5-6 Nov. 2007

• **L. Courtès, O. Hamouda, M. Kaâniche, M.O. Killijian, D. Powell**
  Dependability Evaluation of Cooperative Backup Strategies for Mobile Devices

• **A. E. Rugina, P.H. Feiler, K. Kanoun, M. Kaâniche**
  Software Dependability Modeling using an Industry-Standard Architecture Description Language

• **A. Baina, A. Abou El Kalam, Y. Deswarte, M. Kaâniche**
  A Collaborative Access Control Framework for Critical Infrastructures: a Web Services Based Approach
  International Conference on Web Services (ICWS 2007), Dallas (USA), IEEE Computer Society Press, Salt Lake City (UT, USA), 9-13 July 2007, pp. 1064-1071

• **A. E. Rugina, K. Kanoun, M. Kaâniche**
  The ADAPT Tool: From AADL Architectural Models to Stochastic Petri Nets through Model Transformation

• **E.V. Matthiesen, O. Hamouda, M. Kaâniche, H.P. Schwefel (1)**
  Dependability evaluation of a replication service for mobile applications in dynamic ad-hoc networks
  5th International Service Availability Symposium (ISAS-2008), Tokyo (Japon), 19-21 Mai 2008.

• **M. Beccuti, G. Franceschinis, M. Kaâniche, K. Kanoun**
  Multilevel dependability modeling of interdependencies between the electricity and information structures

• **A. Baina, A. Abou El Kalam, Y. Deswarte, M. Kaâniche**
  A Collaborative Access Control Framework for Critical Infrastructures
  Rapport LAAS N° 08010

• **A. Baina, Y. Deswarte, A. Abou El Kalam, M. Kaâniche**
  Access Control for Cooperative Systems: A Comparative Analysis
  Rapport LAAS N° 08875

• **O. Hamouda, M. Kaâniche, E.V. Matthiesen (1), J. G. Rasmussen, H.P. Schwefel**
  Connectivity dynamics in vehicular freeway scenarios
  Rapport LAAS N° 09125
• O. Hamouda, M. Kaâniche, K. Kanoun
  Safety modeling and evaluation of automated highway systems
  Rapport LAAS N° 09061
  The 37th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN-2009), Lisbonne (Portugal), 29 June-2 July 2009, pp.73-82.

• K. Tiassou, K. Kanoun, M. Kaâniche, C. Seguin, C. Papadopoulos
  Modeling aircrafts operational reliability

• M. Kaâniche
  Resilience assessment of critical infrastructures: from accidental to malicious threats

• A. Dessiatnikoff, R. Akrout, E. Alata, M. Kaâniche, V. Nicomette
  A clustering approach for web vulnerabilities detection

• Q. A. Do Hoang, J. Guiochet, D. Powell, M. Kaâniche,
  Human-robot interactions: model-based risk analysis and safety case construction

• K. Tiassou, K. Kanoun, M. Kaâniche, C. Seguin, C. Papadopoulos
  Online model adaptation for aircraft operational reliability assessment