Muhammad Uzair KHAN

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RESEARCH INTERESTS SUMMARY

Model Driven Software Engineering, Model Based Testing, Distributed Components and Component models

EXPERIENCE

2011 - to date	**Assistant Professor—National University of Computer and Emerging Sciences (FAST-Islamabad).** Department of Computer Sciences (HEC Approved Supervisor)
2006 - 2007	**Research Internship – INRIA-Sophia Antipolis, OASIS Team, France** ProActive middleware for Distributed and Grid Application development
2005 - 2006	**Permanent faculty member (lecturer), Mohammad Ali Jinnah University** Advance Computer Programming Computer Programming Co-instructor: Formal Methods and Safety critical systems
2004 – 2005	**Visiting Lecturer, Mohammad Ali Jinnah University** Computer Programming Object Oriented Programming
2003 – 2005	**Research Fellow, Mohammad Ali Jinnah University** Center for Software Dependability (Dr.Jaffar-ur Rehman)
2001 – 2004	**Teaching Assistant, Mohammad Ali Jinnah University**

EDUCATION

2007 – 2011	**PhD. INRIA-I3S-CNRS-UNSA, France** **Thesis:** a Study of First Class Futures: Specification, Formalisation and Mechanised Proofs
2006 – 2007	**Research Masters: Networks and Distributed Systems – UNSA, France** **MS Thesis:** Study of First Class Futures and incorporating them in CIC protocol
2003 –2005	**MS (Major in computer science) – M.A.J.U. Islamabad.** **MS Thesis**: Software Fault Tolerance in Middleware based Distributed Systems (Gold Medal)
1999 – 2003	**BS (Major in Computer Science) – M.A.J.U. Islamabad.** **Degree Project***:* Code generation tool for J2EE developers. (Gold Medal)

SELECT RESEARCH PUBLICATIONS

- **System Analysis and Modeling Using SysML**
  Muzaffar Iqbal, Muhammad Uzair Khan, Muhammad Sher: . ICITCS 2012: 1211-1220.
- **First Class Futures: Specification and Implementation of Update Strategies** *
  Ludovic Henrio, Muhammad Uzair Khan, Nadia Ranaldo, and Eugenio Zimeo, *CoreGRID , Europar 2010, Ischia, Italy*.
- **A Framework for Reasoning on Component Composition** *
  Ludovic Henrio, Florian Kammüller, and Muhammad Uzair Khan - *FMCO 2009, Springer (2010)*.
- **Asynchronous Components with Futures: Semantics and Proofs in Isabelle/HOL** *
  Ludovic Henrio and Muhammad Uzair Khan - *FESCA 2010 - ENTCS*.
- **First Class Futures : a Study of Update Strategies**
  Muhammad Uzair Khan and Ludovic Henrio - *Research Report- RR-7113, INRIA 2009*.
- **Update Strategies for Transparent First Class Futures**
  Muhammad Uzair Khan and Ludovic Henrio - 19th Doctoral Symposium, DS-ECOOP '09, Genova Italy 2009.
- **Evaluation and implementation of update strategies for first class futures**
  Muhammad Uzair Khan - SAFA workshop at SAME 2008, INRIA-Sophia Antipolis
- **Polymorphic Extensions to Object-Z Specifications**
  Tabinda Waheed, Uzair Khan, Aamer Nadeem, IEEE Tencon 2006, November 14-17, 2006, Hong Kong.

- **A Framework for Formal Specification & Verification of Aspect Oriented Programs**
  Nafees Qamar, Uzair Khan, Aamer Nadeem, at 5th International Workshop on Critical Systems Development Using Modeling Languages (CSDUML 2006) associated with ACM/IEEE 9th International Conference on Model Driven Engineering Languages and Systems (MODELS '06.)

* Author names are in alphabetical order by last name

CURRENT RESEARCH PROJECTS

I am currently involved in the following two projects with Simula Research Labs, Norway.
MOTER: The project involves application of search-based algorithms for testing model transformations.
RESTATE: The project involves identification of crosscutting features for re-factoring UML state machines

PAPERS REVIEWED

- **Review Committee member for** IEEE Symposium on Computers & Informatics, 2013, Malysia.
- **Program Committee member** for Doctoral Symposium at 24th European Conference on Object Oriented Programming (ECOOP 2010), Maribor, Slovania, EU.
- **Technical Committee member** for 15 International Multitopic Conference, INMIC 2012, Islamabad.
- **Reviewer** for 2012 IEEE Symposium on Industrial Electronics and Applications, Bandung, Indonesia.

MISCELLANEOUS

- **Participant in HEC Curriculum Revision committee** for Computing (NCRC), 2013.
- **Member of HEC Quantitative Assessment Team** for Revised Ratings (W1-W4)
- Volunteer coordinator for STIC-ASIA project, INRIA- NUST (SEECS), 2008-2010.
- Local organizing member for ECOOP'09, Genova,, Italy 2009.
- Presentation in 6th ICT-ASIA in Bangkok, Thailand – research collaboration between France and Asian partners, 2009.
- Moderator for the research group, "Center for Software Dependability", May 20 – July 06.
- Local Organizer for IEEE ICEIS'2006 held on 22, 23 April 2006.

CURRENT RESEARCH INTERESTS

My PhD work focussed on efficient transmission of results in frameworks using first class futures. My work involved formal proofs on the interplay between first class futures and distributed components as well as implementation of various protocols for future updates. Currently, I am collaborating with Simula Labs, Oslo, Norway, on Object Oriented Modelling of industrial systems for automated verification and validation.

OTHER INTERESTS

Outside academia and research, I am an avid book reader. My interests range from historical and philosophical works to fantasy and science fiction.

REFERENCES

Dr. Arshad Ali Shahid,
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