

# Muzammil Shahbaz

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## Personal Profile

**Address:** CTM, 15 Chemin de la Carronnerie, 38246 Meylan, France  
**Phone:** +33673540046  
**Date of Birth:** 31<sup>st</sup> July 1981  
**Language Skills:** English (IELTS 7.0), French, Urdu/Hindi

## Professional Experience

- 2005 – 2008 **France Telecom R&D / Orange Labs, France**  
R&D Engineer – Software Engineering Department  
*Responsibilities:* Research and Development on Reverse Engineering, Validation and Verification Techniques for Black Box Software Components, with the applications on Intelligent Systems and Mobile Phone Services.
- Mar-Sep 2005 **Verimag, France**  
Internee *Project Collaborator: STMicroelectronics, France*  
*Responsibilities:* Design & Development of a tool to verify SystemC modules in SMV (Symbolic Model Verifier)
- 2002 – 2004 **KAPS Computing PVT LTD, Pakistan**  
Software Engineer – Hewlett-Packard Projects Expert  
*Responsibilities:* - Design, Development and Maintenance of Enterprise Applications regarding Information Retrieval, B2B/B2C and Web Services  
- Participation in the testing process through test reviews and analysis

## Academic Profile

- 2005 – 2008 **PhD in Software Engineering**  
Grenoble Institute of Technology, France  
*Thesis:* Reverse Engineering Enhanced State Models of Black Box Software Components to support Integration Testing  
*Jury:* Prof. Doron Peled, Dr. Alexandre Petrenko, Prof. Jean-Claude Fernandez, Prof. Thierry Jérón, Prof. Ana Cavalli, Dr. Khaled El-Fakih  
*Distinction:* Nominated for "Best Thesis Award 2008"  
*Industrial Link: France Telecom R&D*
- 2004 – 2005 **Masters in Computer Sciences**  
**Specialization: Modeling and Verification of Critical Systems**  
University of Joseph Fourier, France - With Distinction  
*Thesis:* Verification of System-on-Chip using Symbolic Model Verifier
- 1999 – 2003 **Bachelors in Computer Sciences (Honors)**  
University of Central Punjab, Pakistan  
With a Letter of Commendation - CGPA: 3.67 / 4.00  
*Final Project:* Face Recognition using Neural Networks and Eigen Faces

## Publications

<http://membres-liglab.imag.fr/muzammil/>

### Journal Publications:

- Information Sciences 2008 (submitted)
- Technique et Science Informatiques 2008

### International Conferences with peer-reviews (8):

- TAIC PART 2006, UK
- FORTE 2006, France
- TestCom 2007, Estonia
- AFADL 2007, Belgium
- COMPSAC 2007, China
- ICFI 2007, France
- ISoLA 2007, France
- TestCom 2008, Japan

## Proficiencies

### Research Interests:

- Model Driven Engineering
  - State Machines, UML, Component Integration Architecture
- Software Validation & Verification
  - Model Checking, Model Based Testing, Black Box Testing, Fuzzing, Feature Interaction Detection
- Reverse Engineering
  - Grammatical Inference, Computational Intelligence, Automata Learning, Program Analysis/Understanding/Interpretation, Invariant Detection
- Intelligent Systems Design
  - Mobile/Web Services, Smart building projects

### Development Skills:

<i>Languages:</i>	Java (SE, EE, ME), C/C++ (STL), PL/SQL
<i>Web:</i>	JSP, Servlets, HTML, XML (Xerces-C++)
<i>Servers:</i>	JRUN 3.1, ServletExec 4.1, Orion 1.4
<i>Frameworks:</i>	Struts, Felix, OSGI-UPnP, Apache POI
<i>Database:</i>	Oracle 8i, LDAP Directory Server, CVS
<i>V&amp;V Tools:</i>	SMV, Lustre, IF, Daikon

## R&D Projects (selected)

### **Integrated System Verification through Learning and Testing (2007- to date)**

#### ***Project of CRIM, Canada and Grenoble Computer Science Lab, France***

Description: Verification of integrated systems for intermittent errors in the absence of models.

Role: Participation in developing a verification technique through model inference and reachability analysis. The approach is to learn tunable approximation of models as  $k$ -quotients where  $k$  controls the precision of the models. Then, the models are searched through reachability analysis for compositional problems, such as deadlocks, livelocks and races.

### **Mobile Phone Applications (MIDlets) Testing (2006 - 2008)**

#### ***Project of Orange Labs, France***

Description: Integration of third-party MIDlets with the indigenously made service components of Orange Labs. Detecting incompatibilities and performing conformance testing of the requirements.

Role: Testing the behaviors of built-in Media Players in mobile phones: Nokia N93, Nokia 6131 and Sony Ericsson W300i. Feature Interaction Detection in phone functions and company services.

### **Smart Home Systems (2007 - 2008)**

#### ***Project of Orange Labs and Grenoble Computer Science Lab, France***

Description: Designing a service-oriented-architecture of home appliances that can communicate with company's phone/internet services. The future product will be integrated with the ADSL solution, called Orange LiveBox.

Role: Participation in modeling the architecture of home entertainment devices and related mobile phone services. Conducting experiments with OSGI-UPNP Bundle to connect UPNP enabled devices with OSGI based services.

### **Verification of System-on-Chips (2005)**

#### ***Project of Verimag and STMicroelectronics, France***

Description: Automatic verification of SystemC modules through symbolic model checking.

Role: Converting the automata representation of SystemC modules into SMV (Symbolic Model Verifier) semantics for verification. The developed tool, called *Lussy*, is now being used in the company for early development analysis and verification of system-on-chips.

### **Knowledge Management System (2003 - 2004)**

#### ***Project for Hewlett-Packard, USA***

Description: A document management system that supports versioning, editing, deleting, re-activating and purging of documents.

Role: Design and Development of various modules related to document management and control.

## Achievements

- French Industrial scholarship (CIFRE) from France Telecom R&D for PhD studies (05 - 08)
- Selected by Higher Education Commission Pakistan for post-graduate studies in France (04)
- "Chairman Scholarship" during under-graduate studies (for 3 semesters)
- National Talent Scholarship from Board of Intermediate Education, Pakistan (99)

## Teaching Experience

- Instructor for Computer Networks course, ENSIMAG France (Sep 07 – Mar 08)
- Teacher Assistant for Advance Programming in C++, UCP Pakistan (Summer 02)
- Instructor for Computer Science course at Haleem Institute, Pakistan (Jan – Apr 02)

## Summer Schools

### **TAROT Summer School 2006,07,08**

*Theme:* Advance Topics in Model Based Software Development and Testing.

*Speakers:* Jan Tretmans, Rob Hierons, Ana Cavalli, Kim Larsen, Ina Schieferdecker

## Hobbies

- Reading/Writing (Biographies, Current Affairs, Politics, History, Technology, Short Stories)
- Watching Movies/Dramas
- Traveling
- Playing Badminton and Trump

## References

- Prof. Roland Groz  
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