YAN LIU

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Education

- **Doctor of Philosophy (Ph.D.),** NATIONAL UNIVERSITY OF SINGAPORE – Singapore, 2009-2014
  Thesis title: <u>Applying Model Checking to Pervasive Computing Systems</u>
- **Bachelor of Engineering** in Computer Science and Engineering, SOUTHEAST UNIVERSITY – Nanjing, P.R. China, 2005-2009
  Thesis title: Web Service Selection Based on Qualitative Preference Theories

Tech stack: Haskell, Scala, JavaScript/TypeScript(ES6), Formal Methods (CSP, Timed-Automata, Z, Event-B), Java, C#, C++, Matlab/Octave, Machine Learning Algorithms.

<u>Publications</u>: Please refer to Google Scholar profile link provided at upright corner.

Work Experience

Sessional Lecturer, MONASH UNIVERSITY, AUSTRALIA - 7/18 to Present

- Lecture: Programming Paradigms- assist in teaching modern programming paradigms with a special focus on functional programming aspects. The programming languages intensively practised are JavaScript/TypeScript including functional reactive programming, Haskell.
- Lecture: Advanced Software Engineering- assist in teaching and practicing Event-B based system design specification and verification and NuSMV based model checking.

Self Improving- Scala and Machine Learning projects on Coursera

- Test-Driven Development based on QuickCheck (Property-Specification based Auto-Testing)
- Parallel programming in Scala
- Regression models, classification and neural network etc. machine learning algorithmsc

Research Fellow, NATIONAL UNIVERSITY OF SINGAPORE, SINGAPORE - 9/14 to Present

On project RELIANCE (Reliable prototyping framework for daily living assistance of frail ageing people).

- Design and implement probabilistic model checking applications using C#;
- Interpret Java/Drools code into probabilistic-concurrent models to establish the application of model checking technique; Perform system analysis with regard to reliability and timing requirements of the smart home assistance system (Aging-care); Provide complete testing, efficient debugging and verified decision support for the engineering team.
- Manage project progress and communication with funding agency, external collaborators, industry companies, organise and speak on international conferences and seminars.

Postdoctoral Fellow, ADVANCED DIGITAL SCIENCE CENTER, SINGAPORE - 6/15 to 9/16

On project SecUTS- Securing Urban Transportation Systems.

- Research on innovative quantitative solutions to predict train service failure by creating system models from UML/partial C code/architecture graph of the legacy system.
- Lead a small team of researchers and engineers to manage project deliverables and external communication of research outputs.

PhD Researcher, NATIONAL UNIVERSITY OF SINGAPORE, SINGAPORE - 3/10 to 6/12

On project AMUPADH (Activity Monitoring and UI Plasticity for supporting Aging with Mild Dementia at Home) which aims to enable the independent living of the elderly with mild dementia at home.
Achievement Highlights:

- Developed a formal modelling and verification framework for safety and reliability analysis of the smart home-care system, with a general application to IoT applications.
- My research results in the followup project, RELIANCE, granted with 140k Singapore dollar

Kernel Testing Engineer, ALIPAY.COM, Hangzhou, P.R. CHINA - 3/09 to 4/09
Leading Fin-tech company and major competitor of paypal.com. *Achievement Highlights:*

- Completed formal training as the new recruit.
- Designed and developed automatic web testing platform using Selenium tool.

Other Experiences

- Microsoft Campus Ambassador (MSCA), Microsoft China.
- President, Student Union of CSE School, Southeast University, China.
- Volunteer, China Red Cross Society, China.

Awards

- Research Scholarship from School of Computing, NUS 08/09-08/13
- "Excellent Student Leader" of Jiangsu Province and Southeast University, 1/150
- "Zhang Guiping" scholarship (top 5% student)

A bit more…

- Language: Mandarin & Wu Chinese (Mother tongue), English (Main language for past 9 years)
- Hobby: Cooking, Yoga, Hiking