Ren-Song Ko

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Objective

A challenging research and development full-time position in the area of real-time and embedded systems, distributed computing systems, pervasive and mobile computing, or network.

Qualifications Summary

- Expertise in computer software design and implementation.
- Comprehensive involvement in management of teams and individuals.
- More than 5 years work experience in software development.

Education

Ph.D. in Computer Science and Engineering, Michigan State University, East Lansing, MI
May 2003; GPA: 3.9/4.0
M.S. in Computer Science and Engineering, Michigan State University, East Lansing, MI
May 1998; GPA: 3.9/4.0
M.S. in Electrical Engineering, National Taiwan University, Taipei, Taiwan
June 1992
B.S. in Electrical Engineering, National Taiwan University, Taipei, Taiwan
June 1990

Research

General research interests include real-time and embedded systems, distributed computing systems, pervasive and mobile computing, and wired and wireless network. Design and implement the adaptive software architecture project(ASAP) for dissertation.

- Built a Java framework for developing self-adaptive software under dynamic heterogeneous environments. The framework is primarily applied to soft real-time and distributed applications, and also has been demonstrated on pervasive computing and adaptive robotic control system.
- The implementation has been tested successfully on Linux (PC, iPAQ, and Nomadic XR4000), but expected to work under different platforms.
- Add soft real-time capability to Java and that requires exhaustive study on an open source JVM, Kaffe.

Work Experience

Research Assistant — **Department of Civil Engineering**
MSU — **May 2001 - Present**
Continue the improvement of the pavement design software, MFPDS, on Windows sponsored by Michigan Department of Transportation. MFPDS is a team project and requires communication with people from different engineering fields. Manage project development. The code is developed in C++ with Visual Studio.

Teaching Assistant — **Department of Computer Science**
MSU — **Aug. 1999 - Present**
Conduct lab sessions, answer questions and grade homeworks for CSE231/232(C++ Language), CSE410(Operation System), CSE420(Computer Architecture), CSE830(Design and Theory of Algorithms), and CSE835(Algorithmic Graph Theory).

Research Assistant — **Department of Civil Engineering**
MSU — **Jan. 1997 - Aug. 1999**
Developed GUI and improved the functionality for the pavement design software, MFPDS, on Windows sponsored by Michigan Department of Transportation. The GUI is developed solely in C++ ($>$ 100,000 lines) with Visual Studio. The core algorithm is developed collaboratively in Fortran with Visual Fortran.

Professional Techniques

- Programming Languages: C, C++, Java, Ruby, Python, Perl, Scheme, LISP, XML, Fortran.
- System administration
- Familiar with TCP/IP, OSI 7 layers, ATM, wireless and simulation.
- Extensive programming experiences on Unix and Windows platforms.
- Object Oriented analysis, design, and development.
- Solid software engineering knowledge and experience.
- Web application design and development.

Publications

Ren-Song Ko and Matt W. Mutka, "Use `ASAP` to Develop Flexible and Efficient Distributed Self-Adaptive Systems," submitted to the 2003 International Conference on Parallel Processing (ICPP-2003), October 2003.

Ren-Song Ko and Matt W. Mutka, "A Component-Based Approach for Adaptive Soft Real-Time Java within Heterogeneous Environments." to appear in the special issue of Parallel and Distributed Computing Practices.

Ren-Song Ko and Matt W. Mutka, "Adaptive Soft Real-Time Java within Heterogeneous Environments," Proceedings of Tenth International Workshop on Parallel and Distributed Real-Time Systems, April 2002.

Ren-Song Ko and Matt W. Mutka, " `FRAME` for Achieving Performance Portability within Heterogeneous Environments," Proceedings of the 9th IEEE Conference on Engineering Computer Based Systems, April 2002.

Honors & Awards

- Fellow Scholarship, Department of CSE, Michigan State University, 1999.

- One of the best papers in WPDRTS 2002 and invited to participate in the special issue of Parallel and Distributed Computing Practices, 2002.

References

Available on request.