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Lecturer
Computer Science and ITWEB Departments
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Education

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| • Xidian University, Xian, PRC | B.S. in Telecomm. Eng. | 1982 |
| • State University of New York at Buffalo, Buffalo, New York | M.S. in Elec. & Comp. Eng. | 1990 |
| • State University of New York at Buffalo, Buffalo, New York | Ph.D. in Elec. & Comp. Eng. | 1995 |
| • The Tippie School of Management, University of Iowa, IA | Evening MBA program | 2006 |

Experience Highlight

- Over 20-year experience of software development, engineering, and research
- Background on signal/image processing, telecommunication, and electronic instrumentation

Employment History

Rensselaer Polytechnic Institute 07/01 – present

- Instructor, Department of Computer Science, Department of ITWS

Phoenix Integration, Blacksburg, VA 02/12 – 01/13
Senior Software Engineer

- R&D on software for engineering design process optimization and integration in Java, C/C++, SysML and UML. IBM Rhapsody, Magicdraw, and NetBeans IDE.

Virginia Tech, Blacksburg, VA 05/07 – 05/11
Senior Application Investigator and Research Fellow, Transportation Institute

- R&D on software for data analysis, computer vision, and graphical view in C/C++, SQL, MATLAB, and web applications for data transfer and management in Java and Ruby in Windows, and UNIX environments. Agile methodology was applied.

Research Scientist, ECE Department

- R&D on image analysis in C/C++

Pearson Educational Measurement, Iowa City, Iowa 06/98 – 11/06
Senior Software Developer V

- Online educational reporting and testing program using Java, JSP, SQL, XML, JavaScript, J2EE, Struts framework, IntelliJ, BEA WebLogic, etc.
- Software Project Configuration Management
- System Development Manager for a form processing system of scoring paper tests. Designed and developed the algorithms and software package in C++/MFC on Windows NT and UNIX.

Information Infrastructure Department, Rockwell Collins, Cedar Rapids, IA 11/97 – 06/98
Senior Business Analyst

- Designed and developed the enterprise-wide Help Desk computer client/server system.

Image Analysis Facilities, the University of Iowa, Iowa, IA 03/97 – 05/98
Consultant

- R&D on a 3D medical image processing and display system using Visual C++ and MFC

Electronic Data Systems Corporation, Global Telecommunication Division, St. Louis, MO 05/94 – 09/96
System Engineer

- Re-engineered the EDS Queue Management Information System (QMIS), a real-time data collection and reporting system runs on HP UNIX and Windows NT. Enhanced the EDS Force Management System.

SUNY at Buffalo, Buffalo, New York 02/91 – 05/94
RA, CS Department

- R&D on image processing algorithms for document image enhancement, segmentation, and noise reduction. The project was sponsored by the USPS federal agency.

RA and TA, ECE Department

- Conducted research on ultra-fast infrared lasers, characteristics of optical material and optical-fibers
- Assisted in teaching courses and supervised seniors in electronic laboratories

Selected Publications

1. F. S. Zhao, **Y. Liu**, P. L. Liu, "Continuous-wave synchronously pumped femtosecond dye laser at 1.3 mm", *Optic Letters*, vol. 14, 222-223, 1989
2. Wang G, **Y. Liu**, T. H. Lin, and P. C. Cheng, "A half-scan cone-beam x-ray microtomography formula", *Journal of Scanning Microscopy*, vol. 16, 216-220, 1994
3. **Y. Liu**, S. N. Srihari, "Document image binarization based on texture features", *IEEE Trans. PAMI*, Vol. 19, No 5, 540-544, May 1997
4. E. W. Bai, C. L. Wang, **Y. Liu**, G. Wang, "Controlled cardiac computed tomography", *International Journal of Biomedical Imaging 1:ID14989*, 2006
5. J. Liu, C. Wang, **Y. Liu**, E. W. Bai, G. Wang, "Selectable source rotational velocity for cardiac CT", *JCAT*, Vol. 31, No. 1, 16-21, 2007

NIH/SBIR Grants

- **Principal Investigator**, SBIR Phases I & II, CA001807, "Volumetric CT Fluoroscopy System for Small Animal Study", 2000-2005