
Objective

Seeking Admission to the Ph.D. Program at the Louisiana State University

Research Interests

- Computer Aided Design
- Virtual Experimental Verification
- Human-Computer Interaction
- System Modeling and Simulation

Education

Harbin Institute of Technology (HIT), Harbin, P.R.China Sep.2007 – present

Automatic Test and Control Institute (ATCI)

M.E. in Automation Testing and Control (expected–Jun. 2009)

- Exemption from National Graduate School Entrance Exam (top 5%)
- Core Courses GPA: 85.4/100

Harbin Institute of Technology (HIT), Harbin, P.R.China Sep.2003 – Jul.2007

School of Electrical Engineering and Automation

B.E. in Automation Testing and Control (with Honors)

- Overall GPA: 85.5/100 Top: 5% Major GPA: 90.9/100

Academic Experience

Research Assistant Sep. 2007 – Present

Advance System Modeling and Simulation(ASM&S) Lab, HIT

System Modeling, Simulation and Virtual Experimental Verification Technology

Sponsored by National Fundamental Research Project Foundation

- Assisted laboratory scientists with establishing virtual test system framework
- Designed and Implemented the General Digital Modeling and Simulation Platform(GDM&SP)
- Applied GDM&SP in a Semi-physical Avionics Simulation System and a Security Management System
- Designing the High Level Architecture (HLA) Interface middleware for GDM&SP
- Optimizing the Runtime Infrastructure (RTI) and Federation Object Model (FOM)

Teaching Assistant Sep. 2006 – Jan. 2007

Automation Testing and Control Experiment Centre, HIT

National Excellent Program: Principle and Application of Single-Ship Microcomputer

- Developed Traffic Control Experiment Module Based on 16-bit MCU SPCE061A
- Guided undergraduate students to design, implement and test their Curriculum Projects

Project Experience

Distributed Real-Time Enterprise Security Platform May. 2008 – Jun. 2008

China Aerospace Science & Industry corp. Nanjing Chenguang Group Co.,Ltd (NCGC), Nanjing, China

- Applied GDM&SP to realize enterprise Distributed Real-Time Security Management System
- Guided 3 undergraduate students to complete system communication interface control kit for MIL-STD-1553, RS232/422, ARINC 429 Bus and TCP/IP
- Developed Universal Database Control, supporting local and remote access to databases, including SQL Server, Oracle, FoxPro, MS-Access, etc.
- Developed General Graph Control by repackaging the TeeChart control API for the common interface structure

Distributed Semi-physical Avionics Design & Simulation Platform

Nov. 2007 – Jan. 2008

Jiangxi HONGDU Aviation Industry Group Co., Ltd, Nanchang, China

- Worked as a Core member, collaborating with 3 members to establish the aircraft avionics simulation system
- Established the avionics equipment behavior model, attribute model and interface model
- Completed the GDM&SP .COM component - avionics system control kit by DLL package
- Realized the distributed real-time simulation for a variety of avionics, such as Pilot Operation Procedure (POP), ADC, Inertial Navigation System (INS), TACAN and altimeter

Avionics Interface Control Document (ICD) Management System

Feb. 2007 – Jul. 2007

Undergraduate Graduation Project, HIT

- Utilized Object Oriented Analysis and Design (OOAD) methods with UML
- Proposed General Unified Structure of ICD by analyzing MIL-STD-1553, RS422, ARINC 429 Bus Transfer Protocol; Established avionics General Unified ICD database
- Developed a unified platform for avionics system top-level design document using database SQL Server 2000 and Microsoft's Visual C++ 6.0 compiler
- Integrated Crystal Reports control in standardized ICD output; Ensured the reliability of avionics simulation data; Expedited the progress of the avionics design
- Completed a series of Software Engineering Documents

Multi-waveform Signal Generator

Sep. 2006 – Oct. 2006

Institute of Automatic Detecting and Process Control System (D&CS), HIT

- Worked as a student researcher, Responsible for the design of signals generate unit and display unit
- Designed the multi-waveform signals generate unit in the FPGA using Verilog programming language.
- Designed the Vacuum Fluorescent Display (VFD) control unit in the DSP under CC2000 environment.
- Utilized Automatic Gain Control (AGC) technique for amplitude adjustment

Super-heterodyne Spectrum Analyzer

Jul. 2006 – Aug. 2006

National College Electronic Design Contest, Heilongjiang province

- Worked as a team leader, collaborating with 3 members to achieve design contest objectives
- Arranged the work schedule for our project team and discussed to establish system structure
- Responsible for the frequency domain signal analysis, IC selection and the design of MCU control circuit, power supply circuit, Direct Digital Synthesis (DDS) circuit and PCB
- Realized a Spectrum Analyzer with the frequency range 1MHz~20MHz, frequency resolution 10KHz

Portable File Transfer Device for USB Flash Disk

Sep. 2005– Dec. 2006

Sponsored by Undergraduate Scientific and Technological Innovation Foundation, HIT

- Designed the system framework using a MCU to control USB-Host Interface Chip and Flash Chip
- Established MS-FAT32 file system structure in Embedded System ; Analyzed the USB protocol
- Realized the transmission of the files among USB flash disks, portable hard disks and other portable USB storage devices.

Internship

Network Engineer Intern.

Feb. 2008– May. 2008

Science and Technology Agency, The People's Bank of China Harbin Branch, China

- Maintained network communication equipments
- Verified the network data through China National Advanced Payment System(CNAPS)

Automation System Test Engineer Intern.

Jun. 2006 – Jul. 2006

China Hualu Panasonic AVC Networks Co.,LTD, Dalian, China

- Supported the improvement of Power supply test unit in Auto Production Line Equipment of DVD player

Publication & Technical Reports

- ◇ Yang Jingli, **Yang Hui**, Song Bo, "Research on HLA-based Middleware Technique in Distributed Modeling and Simulation Platform" (in preparation)
- ◇ **Yang Hui**, Li Ji, "Design of Universal ICD Management Platform for Avionics Simulation" (in Chinese, submitted to *Journal of System Simulation*)
- ◇ **Yang Hui**, "Avionics Simulation Interface Control Document Management System User's Manual", Automatic Test and Control Institute (ATCI)
- ◇ **Yang Hui**, "Design and Development of Avionics Simulation System Interface Control Document Classification Software ", Bachelor's Degree Dissertation

Honors and Awards

2008. Kwang-Hua Scholarship	(TOP 5%)
2007. First Class National Graduate Fellowship, Graduate School, HIT	(TOP 10%)
2007. Honor Undergraduate Student Award	(TOP 8%)
2007. Excellent Undergraduate Thesis Award	(TOP 5%)
2003-2007. People's Scholarships, continuous four years	
2006. Protagonist of Social Activities Award	(TOP 7%)
2005. Academic Excellence Scholarship	(TOP 10%)
2004. Outstanding Student Leader Award, HIT	(TOP 2%)

Skills and Certificates

- Operating Systems: MS Windows, UNIX/Linux, DOS
- Programming Languages: Assembly languages, C/C++, Matlab, SQL, XML, VHDL/Verilog
- Software Techniques: Object-Oriented Design and Analysis, UML
- Development tools: MS VS 2005 / .NET 2003, MS VC++6.0, SQL Server, Crystal Reports
- Technologies & Libraries: .NET Framework, Win Forms, GDI+, MFC, Win32 API, COM, ADO
- Digital Circuit Design Tools: CCS, Protel, Quartus
- Virtual Instrument Tools: LabVIEW, Labwindows, VEE
- National Computer Rank Examination(NCRE) Certificate (Network)

Affiliations

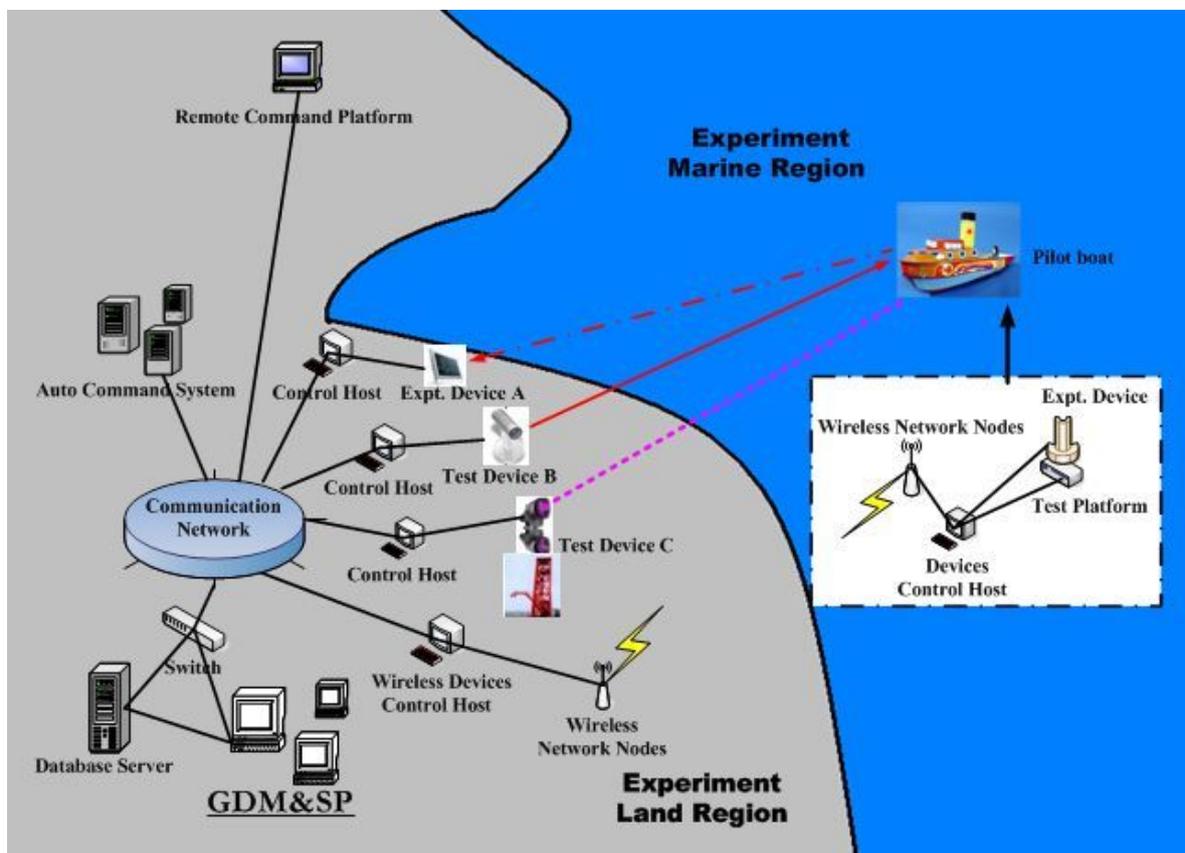
A student member of IEEE Communications Society (COM-019)

IEEE Instrumentation and Measurement Society (IM-009)

A Brief Introduce of Graphical Digital Modeling and Simulation Platform (GDM&SP)

GDM&SP developed in HIT is a general graphical development platform for modeling, simulation and verification of automated systems, widely used in aerospace industry and large-scale distributed system experiment in China.

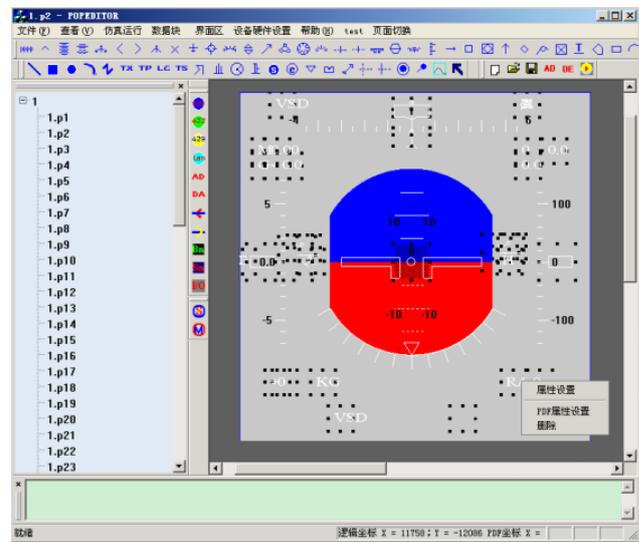
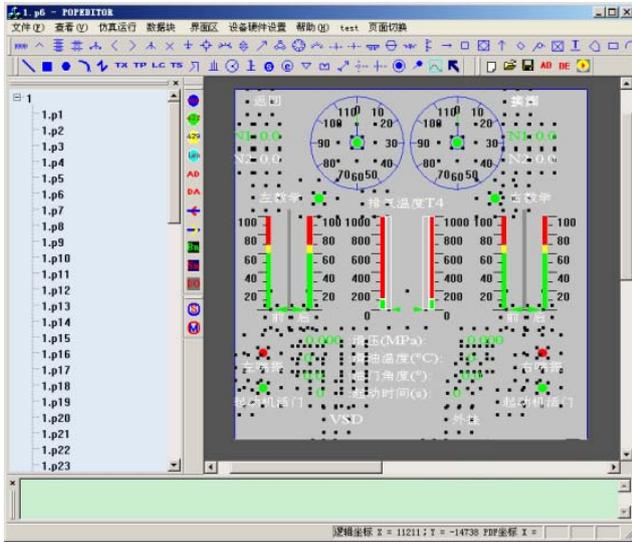
- Using standards VISA (Virtual Instrument Software Architecture) structure, Object-Oriented Design and Analysis, as well as COM components.
- Abstracting attributes and operations of real test equipments, virtual device models with standard interface in the platform play whole functions as real devices do.
- A universal communication model and the check algorithm are designed by analyzing various communication protocols, including MIL-STD-1553, RS232/422, ARINC 429 and TCP/IP.
- Users do not need to develop specialized software, just simply built their test model and make appropriate configuration to complete their application-specific test tasks for digital system, gaining improved quality, short time to market, and great engineering and manufacturing efficiency.



GDM&SP Deployment Diagram in Land and Sea Integrated Test System

Two application samples of GDM&SP:

Project I : Semi-physical Avionics Design & Simulation System



Project II: Distributed Enterprise Security Management System

