JIM JIANMIN YOU

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SUMMARY

Dr. You is a senior engineer and technical lead with extensive experience in fiber optic component and module test, test automation, software and database analysis, design and development, electro-mechanical system development and automation, data acquisition, and machine vision and motion control. He also has advanced skills in CAD/CAM/CAE, stress analysis, FEA, reliability analysis, and materials. He has strong skills in JAVA, C/C++, LabVIEW, FORTRAN, GUI development (Java Swing, LabVIEW, Visual Basic), and relational database (RDBMS) programming. He is a National Instrument Certified Engineer with tremendous experience in instrumentation and telecommunication hardware programming.

EDUCATION

Ph.D. in Mechanical Engineering, University of Maryland, College Park, Maryland
M.S. in Computational Mechanics, Southwest Jiaotong University, Chengdu, China
B.S. in Mechanical Engineering, Southwest Jiaotong University, Chengdu, China

CERTIFICATION

Certificate on Lasers and Electro-Optics, CIENA Certificate of Achievement, LabVIEW BASIC II Certificate, LabVIEW Advanced Certificate, LabVIEW Vision Certificate.

TECHNICAL BACKGROUND

Hardware and Operating System: UNIX, Windows 95/NT/ME/20000, HP 9000, Sun Solaris, Agilent OSA, JDS Uniphase Optical Switch, HP Tunable Laser Source, HP Wave Meter, JDS Uniphase Power Meter, NI DAQ Board, NI GPIB Board, NI IMAQ Board, Thermotron Environment Chamber, Gain Flattened Amplifier (GFA).

Programming Language: JAVA, JFC (Swing), Applet, JDBC; C/C++, MS Visual Basic, FORTRAN, LabVIEW.

Database: Oracle, SQL plus, PL/SQL, MS Access, Oracle Designer 2000, Developer 2000.

Other Software and Knowledge: JBuilder, Java Script, HTML, MatLab, Mathcad, MS Office, Lotus 1-2-3, WordPerfect Suite, Freelance, Table Curve 2D & 2D, ANSYS, NASTRAN, HyperMesh, Pro-Engineer, CADKey, Cutting Edge, AutoCAD, etc..

EXPERIENCE

AUTOMATION ENGINEER, R&D Department 5/2000-Present
NSG America, Inc. *Somerset, NJ*

- ***Three Port Thin-film Optical Filter:*** Developing an automating optical performance and reliability test process: In charge of the whole life cycle of the complete system from analysis, design, development, test, and deployment. System consists of database, motion and equipment control, data acquisition, and process control.

SR. SOFTWARE ENGINEER, Optic Process Engineering 8/2000-3/2002
CIENA Corporation *Linthicum, MD*

- ***Fiber Optic GFA Virtual Span Test:*** Developed an automated GFA virtual span VOA optimization algorithm. Designed and developed a test program to implement the algorithm and automate the VOA optimization. Three spans (virtual span spreadsheet data, virtual span 3D mathematical model, and real span) were compared using the automated test software. An ANDO OSA, a JDS Uniphase MTA optical switch, an Agilent Multiwave meter, a JDS Uniphase attenuator, a broadband laser source, a GFA, and two laser pumps were used in this test.
- ***PM Fiber Connectorization:*** Coordinated and led the PM fiber jumper manufacturing system project. The system consists of several sub-systems: microscope, vision (frame grabber, camera, and software), motion, adhesive and curing, mechanical, and measurement. Designed and developed an automated PM fiber alignment system using vision feedback control. Several algorithms to automatically detect PANDA fiber edge and fiber diameter were developed. Designed mechanical fixtures to apply adhesive curing, fiber rotation, and optical connector holding using Pro-Engineer. Evaluated UV and IR curing machines, different adhesives, ER meter, fiber rotator, controller, and other equipments from different vendors. Two patents were applied.
- ***Generic Optical Connector Test Automation:*** Designed and developed a generic connector test software to test connector insertion loss and backreflection. The software eliminated a lot of supporting work, saved tremendous company resources, and simplified connector testing. Analyzed, designed, and developed VTD and CTD Oracle databases with Oracle group. Developed the VTD and CTD query programs and employed VTD and CTD query programs in automated connector testing program. Created MS Access databases and SQL tables for the Manufacturing Control System.
- ***EDF Spooling Automation:*** Improved and modified the automated Erbium-doped fiber spooler visual Basic control software and performed the supporting work.
- ***Fusion Splicing Insertion Loss IR Vision Inspection:*** Using IR camera to acquire splicing image and image processing technique to quantify fusion splicing insertion loss. Experiments were conducted to develop a mathematic model for accurate insertion loss computation.
- ***Optic Connector Burn-in Test Automation:*** Developed process and software to control Thermotron chamber using Telcordia standard, optical switch, power meter, laser source, and other equipments.
- ***Manufacturing Support Automation:*** Initiated and developed automated manufacturing support technology: Developed automatic manufacture support paging system; developed automatic error messages email software.
- ***Miscellaneous:*** Performed connector measurement R&R study and gage study; Conducted daily connector testing supports; Implemented connector testing processes for new product's modules; Programmed optical connector boot testing machine; Developed MTP connector test program.

MANAGER, Software Engineering 4/1999-8/2000
Strategic Technology Institute, Inc. *Rockville, MD*

- ***C-BRAT (Cost-Benefit Risk Analysis Tool):*** Setup Oracle database server, WebDB, and webserver on Windows NT. Designed and developed Oracle database for C-BRAT. Migrated MS Access database data to Oracle database data. Developed cost-benefit and risk analysis mathematic model and Java code and GUI with Drag-and-drop capabilities.
- ***C-BRAT NAS***: Customized the C-BRAT for National Airspace System's cost-benefit and risk analysis. Populated the Oracle database with the facilities, assets, etc.
- ***STB Reliability Analysis:*** Performed system reliability analysis for STB designed by Swales Aerospace using Relex software and prepared project report..
- ***Misc:*** Managed two projects and recruited employees for software and oracle departments.

FEA ENGINEER 2/1999 - 4/1999
Ford Motor Company *Dearborn, MI*

- ***U152 and MC4:*** Worked on U152 and MC4 car body dynamic and modal detail analysis and structure design improvement. Performed U152 body mounts point mobility, GAP powertrain mounts location, and MC4 access hole closing studies. FEA package NASTRAN and HyperMesh were used in the analysis.
- ***Web Publishing:*** Initiated ePublish of NVH analysis results on Ford's Intranet for their world-wide engineer access. Trained and established webpages for engineers in the group.

CONSULTANT 1/1999
Smithsonian Center for Materials Research and Education *Washington, D.C.*
Testing System Automation: Installed and automated the material testing system in Smithsonian Center for Materials Research and Education. Installed the software developed during my Ph.D. research project and wrote the detailed user manual.

RESEARCH FELLOW 7/1996-12/1998
University of Maryland *College Park, MD*
- ***Structural Adhesive Research:*** Designed, developed, and automated a thin-film material testing system. Computer languages C++, LabVIEW, and Q-Basic were used in the software development. Pro-Engineer and CNC machines were used to manufacture system parts. An electronic amplifier was developed to amplify the thermocouple signal. The system consists of:
  Software: An integrate C++ and LabVIEW software which controls the loading and environment chamber and performs data acquisition, data analysis, and feedback control.
  Hardware: System consists of Tensiometers, environmental chambers, temperature and humidity control devices, stepper motors and controllers, strain indicators and switch and balance units, a data acquisition board, an oscilloscope, an amplifier, and a control computer.
- ***Dynamometer Development.*** A dynamometer was developed for National Institute of Health to monitor and measure the machining of ceramic dental materials. In the project, Pro-Engineer, Cutting Edge, and CADKey were used to design parts, generate CNC machine codes, and control rapid prototyping machine.
- ***Saw Blade Vibration Testing:*** Performed finite element analysis on a saw blade and conducted modal test and measurements using HP spectra analyzer to improve the optimize damping and reduce vibration of the blade.
- ***Structural Adhesive Modeling:*** Conducted extensive tensile, creep, and stress relaxation tests on FM300 composite adhesive and other adhesives on hygrothermal and strain rate factors. Performed extensive data analysis and study. Developed a polymer constitution equation with the hygrothermal and strain rate effects.
- **Teaching:** Assisted Prof. William Fourney in his course, "Material Mechanics." Helped build teaching models, edit textbook, and did all assignments.

RESEARCH FELLOW 6/1995-6/1996
Turner-Fairbank Highway Research Center, FHWA *McLean, VA*
- ***Design of Scaled Models for Wind Tunnel Testing of Highway Structures:*** Studied and analyzed three highway structures. Performed extensive dynamic and modal finite element analysis using ANSYS on Sun Solaris workstation to obtain their dynamic properties. Designed and developed a pre-processing finite element analysis software coded in C++ to perform structure geometric properties calculations. Designed wind tunnel models using CAD tools based on the scaled model calculations. Results were published in a DOT report.

RESEARCH ASSISTANT 9/1994-5/1995
University of Missouri *Columbia, MO*
- ***Residual Stress Measurement with Neutron Diffraction Method:*** Performed Finite Element Analysis and residual stress measurement in a welded joint with diffraction method. Developed program to perform data analysis and stress calculation.

- ***Teaching:*** Assisted in course "Thermodynamics." Led weekly discussion, graded all assignments and determined final grades.

LECTURER/TEACHING ASSISTANT 9/1987 - 9/1994
Southwest Jiaotong University *Chengdu, China*

- ***Software Development:*** Developed FEA pre-/post-processing software with graphic user interface to perform auto-meshing, node-number generating, and stress and displacement results displaying. Developed a substructuring finite element analysis software package to perform large complex structure dynamic analysis.
- ***Scientific Research:*** Conducted dozens of research projects. Performed the design and finite element analysis of railway vehicle components, forged steel wheels, trucks of rail maintenance car, railway high-speed bi-level passenger cars, aluminum alloy subway carbody, freight cars exported to Burma, a high-speed diesel locomotive, welded trucks, and new railway bi-level passenger cars; conducted the feasibility study on Nanjing subway system; conducted substructuring method study.
- ***Teaching:*** Taught the courses "Railway Vehicle Structures and Engineering," "Structural Mechanics," "Finite Element Methods." Formulated all course structures and requirements, devised syllabuses, lectured and administered all grades. Guided and supervised speciality design, graduation thesis, and industrial internship.

SELECTED PUBLICATIONS/PAPERS

Pedro Albrecht, **Jianmin You**, and Mark Albrecht, Tensile Testing of Thin Bulk Adhesive Specimens, Limitations of Test Methods for Plastics, ASTM STP 1369, J. S. Peraro, Ed., American Society for Testing and Materials, West Conshohocken, PA, 1999.

Jianmin You, Time-Dependent Hygro-Thermo-Mechanical Properties of a Structural Adhesive, Ph.D. Dissertation, University of Maryland, College Park, MD, 1998.

Jianmin You, Effects of Environment and Strain Rate on Tensile Strength of an Epoxy Adhesive, Presented at Student Poster Session, International Composites EXPO '98, Nashville, Tennessee, January 19–21, 1998.

Jianmin You, Design of Aeroelastic Models for Wind Tunnel Testing of Three Bridges — Luling Bridge Tower, Sitka Harbor Bridge, and Perrine Steel Arch Bridge, FHWA Report, August, 1996.

Wenqin Yu, **Jianmin You**, Dawei Dong, "Dynamic Analysis of a High–Speed Internal Combustion Locomotive by Finite Element Method," Journal of Internal Combustion Locomotive, No.1, Dalian, 1992.

Jianmin You, "Element Merging Method in Finite Element Mesh Processing for Mixed Structure," presented at 4th National Conference for Young Computer Scientists (NCYCS'92), Beijing, 1992.

Jianmin You, Zengchuan Chen, "A Graphic System for Large Scale Finite Element Analysis on Siemens' CAD Station," Application Research of Computers, No. 1, Chengdu, 1991.

Jianmin You, Qiu Chen, "Applying the Dynamic Substructure Method to the Dynamic Analysis of the Diesel Locomotive," Journal of the China Railway Society, Vol. 13, No. 4, Beijing, 1991.

Qiu Chen, **Jianmin You**, "Dynamic Analysis of High–Speed Internal Combustion Locomotives by Substructure Method," Proceedings of the International Conference on Vibration Problems in Engineering, Vol. 2, International Academic Publishers, Beijing, 1990.

LANGUAGES

Mother tone: Chinese. Reading competence in French

MEMBERSHIPS

Optical Society of America (2000-present).
Society of Manufacturing Engineering (1997-1999).
Society of Experimental Mechanics (1997-1999).
Sichuan Mechanical Engineering Society (1991-1994).
Chinese Computer Society (1992-1994).

AWARDS

CIENA Certificate of Achievement, USA	2001
Merit Award, Award Program for the Advancement of Arc Welded Design, Engineering, and Fabrication, The James F. Lincoln Arc Welding Foundation, USA	1999
Teaching Assistantship, University of Maryland, USA	1998
Graduate School Fellowship, University of Maryland, USA	1996 - 1998
Dwight D. Eisenhower Fellowship, Federal Highway Administration, USA	1995 - 1996
Research Assistantship, University of Missouri, USA	1995
Industrial Fellowship, University of Missouri, USA	1994
Superior Achievement Award, National Highway Institute, USA	1996
First Prize Award, Sichuan Mechanical Engineering Society, China	1991
Second Prize Award, 4th National Conference on Computer Applications, China	1990

SOCIAL ACTIVITIES

- President (2000-2001), SW Jiaotong University Alumni Association, Washington, D.C. Chapter.
- Director of External Relations (2000-2001), Chiao Tung (Jiaotong) University Alumni Association, Washington, D.C. Chapter.
- Committeeman (1996-1997), Chinese Graduate Student Association, University of Maryland, College Park.
- Director of Activity (1985-1987), Graduate Student Association, Southwest Jiaotong University, China.