

John W. Lum

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- Objective** An engineering or analyst position that draws upon my computer- and Web-related skills and provides an outlet for my leadership and creativity
- Education** **Massachusetts Institute of Technology**
Master of Science in Materials Science and Engineering **June 1996** **GPA: 4.7/5.0**
Bachelor of Science in Materials Science and Engineering **June 1994** **GPA: 4.7/5.0**
- Computer Skills** *Languages:* expert in LabVIEW; HTML and related tools; some C/C++, Perl, PHP, SQL
Operating Systems: Linux/UNIX, Windows; some Linux/UNIX system administration
Software: experienced writing virtual instruments for data acquisition and analysis using LabVIEW; extremely proficient in Excel; experienced with MATLAB, Access, mySQL, etc.
- Experience** **Independent Software Consultant** **Sep 2004-present**
- Worked with Tampa area NI Alliance Member to develop LabVIEW-based interface for automated testing of capacitors. Functionality included controlling an oscilloscope; displaying captured waveforms; and managing resulting data, including archiving to DVD-ROM.
 - Developed LabVIEW prototype for USB camera-based remote monitoring vehicle
- Florida Democratic Coordinated Campaign 2004**
Operations Lead and Associate Group Leader for HD 60 – Tampa, FL **Jun 2004-Nov 2004**
District Leader role (shifted from part-time volunteer to full-time campaign staffer) included:
- Identified and cultivated precinct leaders (grew list from ~20 to ~35) and built personal relationships with party leaders both in my district and elsewhere in Hillsborough County
 - Organized and led 10-15 precinct canvasses all around my district, including volunteer recruitment, turf-cutting, walk packet construction, walking, and post-walk metrics.
 - Coordinated North Tampa phone banks (scheduling, call sheets, metrics)
- Operations Lead role included:
- Built up and managed hardware and software infrastructure for an office that grew to support >30 clients, including secure wireless Ethernet, shared fileserver, and networked printer/copier.
 - Created and maintained single-source, Web-based databases (mySQL, phpMyEdit) that served as the heart of our volunteer recruitment, event staffing, and ballot-chasing processes
 - Created an automated software tool to break supporter database into precinct-sized pieces, format using an Excel template, create PDF files, and e-mail resulting files to precinct leaders
 - Served as lead analyst for all campaign data management, including walk and call universes, voting analysis, and vote-modeling; technical lead in regional Boiler Room on Election Day
 - Mentored two assistants during the course of the campaign
- National Instruments**
Business Analyst – Tampa, FL **Nov 2003-Sep 2004**
Transitioned to a remote-office role on the Web Support and Operations team, with periodic visits back to Austin. Major projects and innovations included:
- Architected segmentation framework for revised NI customer service model
 - Co-wrote winning application for 2004 Ten Best Web Support Sites award
 - Developed and delivered training material for new business analyst hires
- Web Support and Operations Manager – Austin, TX* **Mar 2000-Oct 2003**
Expanded team leadership role into group management. Major responsibilities, projects, and innovations included:
- Managed budget of over \$1 million, including personnel hiring/firing and vendor negotiation for hardware and software infrastructure
 - Aggressively participated in on-campus recruiting trips (primary sponsor for MIT, team member for UT Austin) and on-site follow-up interviews; authored technical interview questions for Engineering Leadership Program

- Achieved external recognition for ni.com/support Web site as back-to-back winner of the Association of Support Professionals "Ten Best Web Support Sites" Award
- Introduced Developer Exchange discussion forums on ni.com Web site to leverage the NI developer community for user-to-user support; presided over traffic growth between 30% and 50% per year between 2001 and 2004
- Perfected "Request Support" paradigm on ni.com Web site—a problem-submission interface that reduced the need for 1st-level customer service reps, helped drive customers to the problem-solving resources on ni.com, and resolved up to 20% of support issues without any one-to-one involvement on the part of NI support agents
- Managed WSO group's role in the successful enterprise-wide rollout of Oracle 11i ERP/CRM business system suite to replace earlier generation of business tools

Web Support Architect – Austin, TX

Apr 1998-Feb 2000

Led operations team responsible for the external ni.com/support Web site and the internal Applications Engineering intranet site. Major projects and innovations included:

- Introduced numerous new support resources on ni.com Web site, including Troubleshooting Wizards, Example Program Database, and Product Manuals Database
- Formalized knowledge management goals and practices to improve training, align with performance evaluation, and distribute the content management burden over a larger group
- Spearheaded the expansion of our search engine (including vendor negotiation) to span both corporate Intranet and public-available content, and architected the Support Portal, a tool that revolutionized NI engineers' access to technical support content worldwide

Applications Engineer, Engineering Leadership Program – Austin, TX

Sep 1997-Mar 1998

Learned NI hardware and software products; provided telephone- and e-mail-based support to end-users in engineering and scientific disciplines; taught customer training classes (LabVIEW Basics and Advanced, Signal Processing, LabVIEW/DAQ); authored technical content for ni.com Web site and portions of National Instruments product manuals; restarted yearly college recruiting efforts at MIT

MIT Department of Materials Science and Engineering

Research Technical Staff, MIT Solidification Laboratory – Cambridge, MA

Jun 1996-May 1997

Provided modeling and software support for investigation of stainless steel alloys aboard MSL-1, a Space Shuttle-based microgravity laboratory scheduled for April 1997 flight. Other work included INEL/Alumax-sponsored investigation of semisolid Al-Si alloys. Also administrated laboratory computer resources and developed instrumentation and data analysis routines for group research projects.

Research assistant, MIT Solidification Laboratory – Cambridge, MA

Jun 1994-May 1996

Performed ground-based studies of highly-undercooled metal alloys. Initiated program of digital imaging with ultra-high speed (40,500 fps) video camera to explore solidification morphologies and dendrite tip velocities in engineering materials. Created computer-based image analysis routines for morphological characterization; wrote original routines in C to model specimen geometry and establish solidification velocity.

Publications J.W. Lum, D. M. Matson, and M. C. Flemings: "High-speed Imaging and Analysis of the Solidification of Undercooled Nickel Melts," *Metallurgical and Materials Transactions B*, 1996, vol. 27B, pp. 865-870.

Honors/Awards 2003, 2004: Judge, Society for Technical Communication technical writing competition (Pittsburgh)
 2003 Invited Speaker, Consortium for Service Innovation Executive Summit, Mountain View, CA
 2002 Association of Support Professionals Ten Best Web Support Sites winner (ni.com)
 2001 Association of Support Professionals Ten Best Web Support Sites winner (ni.com)
 1998 National Instruments Applications Engineering Excellence Award finalist
 1994 National Science Foundation Fellowship honorable mention
 1991 Microsoft/LEGO MIT Robot Design Competition. Member of winning team out of 50.
 1990 Army ROTC four-year scholarship

Personal Avid reader of history, philosophy, science, and technology; avid watcher of almost any sport!
 One of a pair of identical twins