



Objective / Summary

Multidisciplinary engineer with strong humanities background and 15 years of professional experience, keenly focused on developing novel mechatronic human-machine interfaces. Example interests include exercise and exergaming, PC / game console / arcade controllers, interactive robotics, drive-by-wire machine control, teaching with haptics, and rehabilitation.

Education

Master of Science, Mechanical Engineering (MSME), [California State University, Los Angeles](#), December 2010 (GPA 3.8)

Instructor, CSULA Department of Mechanical Engineering

- Taught mechanical and electrical engineering students the basics of **technical collaboration** and **technical writing**.
- Conducted recitation sections for **statics** and **strength of materials**, graded assignments and exams for **heat transfer**.
- **Edited** and formatted senior capstone projects for final polish before submission to project sponsors.

Graduate Research Assistant, CSULA NASA SPACE Center UAV Team

Responsible for integration, calibration, and team training for a COTS **autopilot control system** in a new **UAV design**. Developed knowledge of **radio control aircraft hardware** and **flight instrumentation**, contributed to NASA **status reports**.

Projects

- Modeled controls for F-8 aircraft and for an inverted pendulum (**MATLAB, State Space Control Systems, Dynamics**).
- Designed and modeled a **human-powered** monorail (**SolidWorks, Human Factors and Kinesiology**).
- Prototyped **human-powered** electrical generators (**SolidWorks, Machine Shop**).
- Designed a clock-tower-scale chiming automaton (**SolidWorks, COSMOSWorks, Machine Design**).

Additional Coursework and Tools

Dynamics of Mechanisms, Robotics, Manufacturing Processes, Optimization, Machining Science, Thermodynamics, Fluids Introductions to MD ADAMS, Mathcad, AutoCAD, Fluent / Gambit, Simulink

B.S. Electrical Engineering (BSEE), all but senior thesis, [Worcester Polytechnic Institute](#)

B.S. Music and Theater Production (BSID), [Worcester Polytechnic Institute](#), June 1996, With High Distinction

Projects

- Senior research project studied [the effects of acoustics on singers](#) (**Psychoacoustics, Human Factors**).
- Breadboarded and programmed an 8088-based computer (**Electronics Prototyping, Assembly Language**).
- Designed and prototyped traffic control state machine from **logic chip** hardware.
- Composed and conducted orchestra for *Henry V*, composed recorded score for *Dracula*.

Additional Coursework and Tools

Acoustical Engineering at Bose Institute, LISP / Scheme programming, C programming

Other Training and Education

Art Center College	<i>Intro to Communications Sketching</i> (product rendering with markers)	2007
	<i>Industrial Design Modeling</i> (hand prototyping with clay, silicon, thermosets, two-part resins, vacuform, wood, foam, and model kits)	2006
IBM Software Group	<i>WebSphere Development and System Administration</i>	2005
	<i>Java Developer's Guide to Eclipse</i>	2005

Work Experience

[Clipper Windpower / AES Global, Inc.](#) – Carpinteria, CA / Anaheim Hills, CA

Engineer / Technical Writer (Contract)

July 2011 – November 2012

Broad responsibilities on a small team developing and testing a next-generation wind turbine SCADA system.

- Substantial contribution to hardware development of next-generation power plant control panel (**SAP / BOM**).
- Improved stability of PLC software for communication with turbines (**Beckhoff TwinCAT, IEC 61131 ST, Windows XPe**).
- Resurrected a plant simulation tool for Software-In-the-Loop (SIL) testing (**C#, MS Visual Studio, Modbus, XML**).
- Responsible for planning and producing all engineering, manufacturing, and field process documentation (**Specifications / Requirements, Work Instructions, Test Plans, Microsoft Office / Visio / SharePoint**).
- Anticipated team needs pertaining to difficult, tedious, or error-prone procedures; researched and wrote step-by-step guidance documents to steer the team efficiently through new territory (**Technical Writing, Vendor Relationships**).

[Industrial Staffing Services, Inc.](#) – Los Angeles, CA

Mechanical Engineer, USC Institute for Creative Technologies

Summer 2010 – As requested

Temporary engineering staff for a state-of-the-art interactive media research facility, designing and fabricating small and large-scale mechanical artifacts for research studies, maintaining workshop and motion capture stages.

- Based on researcher specifications, planned and managed conversion of a storage warehouse into one of the largest motion capture stages in the United States (**Structural Analysis, Speedrail Design**).
- Designed and prototyped shoe attachments that redirected the wearer's walking direction in virtual environments.
- Assisted in design, setup, and execution of demonstrations and **research studies** with volunteers from the public.

Integrated Data Corporation / [Ironhawk Technologies, Inc.](#) – Culver City, CA

Software Consultant / Management Consultant (Contract)

December 2006 – May 2009

Consultant for a small software company producing communications software primarily used for national defense.

- Researched new **open source technologies** for integration into new and existing products (**JSR 170 / JCR**).
- Established and documented **collaborative processes**, componentization standards (**TikiWiki, Eclipse, SVN, Maven**).
- Collaborated with **QA** to review and strengthen test plans, make test execution more efficient.
- **Pre-audited** company records for Research and Development Tax Credit claim.

[IBM Software Group](#) – Westford, MA

October 1998 – April 2005

Staff Software Engineer, IBM Workplace Rich Client Team

January 2004 – April 2005

Responsible for complex install and configuration tools binding client installer to server, for a rich desktop portal.

- Extensive experience with structured **software development process**, including specifications, feature costing, source control, build, QA test planning and execution, globalization, accessibility, bug triage, documentation, and support (**Eclipse, ClearCase, InstallShield Multiplatform, Unix shell script, Java**).
- **United States Patents** [7,418,281](#), [7,373,635](#), [7,519,801](#).
- **Wrote** help content for admins / users, worked with editors and designers to establish product-wide doc standards.
- Received IBM "Thanks!" **awards** from the maximum allowed number of peers in 2005.

Staff Software Engineer, IBM Workplace Infrastructure Team

March 2003 – January 2004

Member of a new megateam developing a customizable, centrally managed rich application portal. Challenges included rapidly varying requirements and organization, shifting infrastructure, communication amidst 100+ developers and testers.

- Represented Workplace Client team on a cross-functional **architecture board** creating the Workplace server installer, wrote [white paper](#) on a simplifying architectural pattern for **InstallShield MultiPlatform**.

Software Engineer / Senior Software Engineer, Domino.Doc / Lotus Workflow

October 1998 – March 2003

General duties developing, documenting, testing, and supporting one of the largest **Lotus Notes** applications ever written.

- Critical Situation (crit-sit) representative for many high-profile **customer support** incidents.
- Defined **customer support** position, interviewed and trained full-time new hire in the position.
- Received "Best support of LPS MA by a Lotus Product Team, 2000" **award** for Domino.Doc.
- Developed a custom table rendering class for Lotus Workflow (**C++, Microsoft Visual Studio**).
- Improved product **usability / design** based on extensive direct customer contact.
- **Wrote** readme.txt for several releases, **edited** admin / user help docs, contributed to [redbook](#) for developers.