

# James Nicholas Sears

63 Wall Street #2304

New York, NY 10005-3018

jnsears@jamesns Sears.com

Phone available upon email request

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## Summary

Ten years of design and development experience in academic and professional environments. Have expertise working with Unix/Linux, Macintosh, and Windows operating systems, developing with Java, Processing, C/C++, Ruby on Rails, JSP/Java Servlets, PHP, Perl, MySQL, HTML, CSS and other technologies. Have strong hardware and firmware engineering skills and the ability to quickly learn new skills and adapt to new situations. Possess excellent interpersonal, written, and verbal communications and presentation skills. Equally able working independently or as a team player, with the ability to contribute to teams both in participatory and leadership roles.

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## Employment History

**Self Employed, New York, NY**

**2007 – Present**

**Technology Consultant**

Working for a wide variety of clients on a broad range of tasks such as electronic hardware design for installation art, UI design and client-side Javascript development, and server-side Ruby on Rails application design and development, while maintaining promotion and development of personal projects.

**Pentagram, New York, NY**

**2006 – 2007**

**Visual/Interactive Design, Software Development**

Worked in collaboration with a small team of Pentagram staff to design and develop content for a large-scale system of multimedia displays to be installed in a new high-rise office building for Morningstar in Chicago, IL

- Researched various techniques for presenting the available data.
- Developed a framework using Java and Processing to simulate the inputs from data sources and the associated visualization techniques.
- Utilized this framework to explore different design elements and animation styles, using traditional frame-based and physics-based techniques.

Worked in collaboration with a lead member of Pentagram staff to create a data visualization for the New York Times, featured on the cover of the New York Times Magazine on December 3, 2006, with other snapshots featured within the story.

- Researched various data sets and visualization approaches.
- Developed a Perl data scraping tool to collect over 100,000 points of data from various sources around the Internet.
- Co-designed and developed an OpenGL application with Processing and Java which created physics-based models based upon the collected data, enabling us to export print-ready vector snapshots for the client on a tight deadline.

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### **DragonFly Athletics, Tuscaloosa, AL**

**2006 – 2007**

#### **Hardware Design, Firmware Development**

Designed hardware and firmware for a custom remote control and base station to be used with DragonFly's proprietary video conferencing software.

- Worked with the client to refine the project requirements.
- Created a stable hardware design to fulfill those requirements, including low-power usage, wireless and USB connectivity, and compact size.
- Developed firmware to interface the hardware with the client's software protocol.

### **Ta-da, Inc., New York, NY**

**2006 - 2007**

#### **Lead Developer, Visual/Interactive Design**

Worked in collaboration with a small team of designers and developers to create a platform targeting mobile phones for marketing campaigns and other promotional purposes.

- Created a framework for mobile messaging based upon a server-side Java application.
- Developed an AJAX web-based administration system for these services using JSP/Java Servlets, PHP, and MySQL.

Worked on outside client work, designing and developing various web-based solutions for clients including David Blaine, Studio IMC, and the Nokia-sponsored Come Out and Play Festival.

- Designed the interaction of various web-based applications systems and their components.
- Developed back-end database components to mesh with web applications designed by other staff.
- Translated mockups into data-driven web applications using standards-compliant markup, using AJAX components developed in JSP/Java Servlets, PHP, and MySQL.

### **Organic Resource Management, Inc., St. Louis, MO**

**1997 - 2005**

#### **Software / Hardware Design, IT Management, Sales**

Independently developed a complete software / hardware package to handle the corporation's sales and accounts receivable.

- Designed an easy to learn interface that implemented all necessary business logic in a compact, intuitive system, quickly learnable by novice computer users.
- Implemented the design through the development of over 25,000 lines of Visual C++ code interfacing to a MS Access database replicating to two locations.
- Specified, purchased, assembled, configured, and managed all PC hardware, software, and networking components, maintaining security and reliability.

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Developed a microcontroller based process temperature monitoring system, built for extended battery life and to resist harsh conditions.

- Designed firmware and hardware on compact printed circuit boards using surface mount technology to keep all remote components safe inside small, weather-tight aluminum cases.
- Developed Pocket PC software using Embedded Visual C++ to enable easy remote data collection.
- Wrote PC software in Visual C++ to manage collected data and download relevant ambient weather information from the web for comparative analysis.

Designed other computer and electronic systems, including a photo tagging system, payroll management software, and a DC-DC switching voltage regulator.

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## Strengths

Operating Systems: Mac OS X, Unix/Linux, Windows XP/2000/98

Desktop Languages: Java, C/C++, Processing, various assembly languages

Internet Languages: Ruby on Rails, JSP/Java Servlets, PHP, Perl, HTML, CSS, Flash/  
Actionscript

Database: SQL/MySQL

Hardware: Digital and Analog Circuit Design, Printed Circuit Board Design, Microcontroller  
Firmware Development (C and Assembly), Prototyping

Design/Production: Photoshop, Illustrator, Rhino, Audio/Video recording/editing

Strong creative presence. Excellent problem solving, analytical, and mathematical ability. Able to quickly learn new technologies and techniques. Strong interpersonal, written, verbal and presentation skills. Comfortable working both independently and as a member of a strong team.

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## Education

Bachelor of Science, Electrical Engineering

University of Illinois, Urbana-Champaign, IL

Master's Candidate, Interactive Telecommunications Program

New York University, New York, NY

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### **Affiliations and Awards**

Exhibited The Orb (<http://orb.jamesnsears.com/>) and spoke at TED2007 in Monterey, CA.

The Orb (<http://orb.jamesnsears.com/>) displayed at the 2006 Interactive Telecommunications Program Winter Show at New York University, SIGGRAPH2007, and WIRED NextFest 2007.

City Streets, Northern Lights presented at 2006 Interactive Telecommunications Program Spring Show at New York University and is currently on display at NYU's Kimmel Center

GSPS: GumSpots Positioning System

([http://www.jamesnsears.com/2005/12/gspg\\_gumspots\\_positioning\\_syst.php](http://www.jamesnsears.com/2005/12/gspg_gumspots_positioning_syst.php)) featured at 2005 Interactive Telecommunications Program Winter Show at New York University, O'Reilly Where 2.0 2006 in San Jose, CA, and at Innovation Lab's NEXT 2006 in Copenhagen, Denmark.

Instructor's award winner (2002) for best senior design project in Electrical and Computer Engineering at University of Illinois, Urbana-Champaign for High Power Bass Amplifier.

Mensa member – 20 years.