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## Craig Latta

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### summary

After graduating from **UC Berkeley** with parallel degrees in Computer Science and Music, I worked on **Smalltalk** virtual machines at **ParcPlace Systems**, a spinoff from Xerox PARC (and now part of Cincom Systems). I later joined **Atari Games**, where I applied object-oriented system concepts to the design of platform-independent content development tools, using **VisualWorks Smalltalk**, for composers in the arcade audio group. This allowed me to expand my skills in large-scale object modeling and human interface design. From Atari I went to **Interval Research**. I contributed to several projects there, in areas such as digital sound synthesis, consumer filmmaking, and home networking. I wrote embedded real-time system software, derived from **Squeak Smalltalk**, for a home media network system which later became **MediaWire**.

I then went to the **IBM T.J. Watson Research Center**, developing a theory of human cognition and designing embodied systems with **Squeak** to test it. After that I worked for **Bedarra Research Labs** on the **OpenAugment** project, preserving the legacy of **Doug Engelbart's Augment** system. I later worked with Engelbart and the **Bootstrap Institute** directly, on the version of Augment that Doug uses in his everyday work. I have worked for **Applied Minds** and **EZBoard**, and at **Weather Dimensions** with original Smalltalk implementor Dan Ingalls. I did mixed-reality research with **Croquet** virtual worlds at the **Fuji Xerox Palo Alto Laboratory**. I continued working with Croquet for commercial applications at **Teleplace**. I developed cloud-based support for large in-world crowds, and streaming media connectivity with the outside world. Most recently, I formed an independent consultancy in the Netherlands. I divide my time between Amsterdam and Berkeley.

I have developed frameworks for building distributed object applications on the Internet, for manipulating various forms of digital media, and for developing object systems themselves. I also play a mean theremin.

I'm interested in positions with which I can apply my expertise in object modeling, human interface design, networking, graphics, and digital audio (or as many of these as is possible). I'd like to maintain my home base in Amsterdam (I have many connections to Silicon Valley as well), and I'm willing to travel up to half-time. I am willing to consider consultant and employee arrangements.

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### experience

- 1/2011 to the present* Founder of **Ooncha**, an independent consultancy in Amsterdam. I'm working on prototypes for multiple private clients, and new releases of **Spoon**, a minimal version of **Squeak** with a novel approach to teaching, collaboration, and deployment.
- 4/2009-8/2010* Smalltalk programmer for **Teleplace**, a producer of enterprise learning and collaboration systems using virtual worlds. I developed support for large in-world crowds, incorporating distributed operation of the Teleplace client and server in the **Amazon EC2** cloud. I also developed connectivity with the outside world via streaming media, with in-world cameras, spatialized audio, and RTP. The system is built with the **Croquet** virtual worlds framework.

- 8/2007-  
3/2009 Smalltalk programmer for the **Fuji Xerox Palo Alto Laboratory**. I was part of a team conducting mixed-reality research using **Croquet** virtual worlds. I developed physical I/O hardware interfaces and designing user interfaces for them. Our most prominent project was developing a system for remotely monitoring and visualizing physical processes at the TCHO chocolate factory in San Francisco.
- 5/2005-  
2/2008,  
3/2004-  
6/2004 Smalltalk programmer for **EZBoard**. EZBoard was host to thousands of web-based discussion forums, serving millions of customers daily, using VisualWorks Smalltalk. In my second stint with them, I was the sole Smalltalk developer for the site.
- 9/2006-  
12/2006 Adapted the 1995 Windows version of the Augment system to current Windows, Macintosh, and Linux systems, for the Bootstrap Institute.
- 12/2004-  
12/2006 System software architect at **Weather Dimensions**. Weather Dimensions is a startup company founded by Dan Ingalls, the original implementor of Smalltalk; it produces high-quality personal weather stations. I coordinated the commercialization of the technology, and developed future versions of the visual interface.
- 3/2005-  
4/2005 Computer scientist at **Applied Minds**, an engineering research firm founded by Danny Hillis and Bran Ferren.
- 10/2003-  
4/2004 System software architect at **Bedarra Research Labs** (contract). Designed the distribution architecture for the OpenAugment project, a re-creation of Doug Engelbart's **Augment** system using open-source technologies (so as to make it more accessible to future developers). Augment (also known as *NLS*) was the system Engelbart used in the "mother of all demos" at the 1968 Fall Joint Computer Conference. This was the historic demo in which Engelbart introduced the computer mouse and pointer system, the graphical user interface, display editing, file linking and embedding, multiple windows, context-sensitive help, integrated text and graphics, hyper-documents, and two-way video-conferencing with shared workspaces. Our implementation uses Squeak, and a distributed module system I wrote for it.
- 5/2000-  
5/2002 Computer scientist at the **IBM T.J. Watson Research Center** (contract). Co-developed a theory of human cognition. Designed a Squeak-based system for the interactive specification of the physiological expression of emotion by automata, including facial animation, speech recognition and speech synthesis. Built user interfaces with the Morphic and MVC frameworks. Assisted in a port of Squeak to Windows CE. Taught CS377B (Dynamic Multimedia with Squeak) at **Stanford University's** Center for Computer Research in Music and Acoustics (CCRMA), in the autumn quarter of 2001, as visiting lecturer.
- 5/1996-  
1/2000 Member of Research Staff at **Interval Research Corporation** of Palo Alto, CA. Interval was an incubator for high-tech companies specializing in digital technology used by everyday people. I worked predominantly on the MediaWire home media network system; developing the networking portions of a novel embedded, real-time operating system, derived from Squeak Smalltalk, which ran on custom hardware. Implemented a streaming framework for Squeak which unifies access to diverse external resources, including TCP/UDP, filesystems, and MIDI. Assisted in custom virtual machine development and maintenance, using platform-dependent code-generation tools and Squeak's platform-independent virtual machine simulator. Contributed to several other Interval projects, in areas such as digital sound synthesis and consumer filmmaking.

- 11/1993-4/1996 Member of the Technology Group at **Atari Games Corporation** of Milpitas, CA. Designed and implemented an audio content development system for the arcade games division. I wrote the system with VisualWorks Smalltalk; it was platform-independent with regard to both composer and target platforms. The system generated the game-dependent sources of a real-time embedded audio operating system (written in C and assembler). It provided a composer-oriented interface to the diverse data structures used in producing interactive game audio. It was used for several games.
- 4/1993-11/1993 Member of the software development group at **Ascent Logic Corporation** of San José, CA. Participated in the design and implementation of human interfaces for the company's computer-assisted systems engineering product. Written with ObjectWorks Smalltalk, the product was the largest commercial Smalltalk application at the time.
- 3/1992-3/1993 Member of the Smalltalk engineering group at **ParcPlace Systems** of Sunnyvale, CA (that group has since become part of Cincom Systems, Inc., after having undergone reorganizations of ParcPlace to *ParcPlace/Digitalk* and *ObjectShare*). Participated in the implementation and release of the Objectworks and VisualWorks Smalltalk systems for twelve platforms. Responsible for various platform-specific areas of the Smalltalk virtual machine, and object memory support, including programming tools and documentation.

## education

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| UC Berkeley,<br>Berkeley, CA<br>B.S. EECS and B.A. Music,<br>1991 | Did research at the student-run eXperimental Computing Facility (XCF), and the music department's Center for New Music and Audio Technologies (CNMAT). I have experience with digital filter design and the math that goes with it. Co-founded and directed (and named :) Artists in Resonance, a mixed <i>a cappella</i> singing group, and founded NetJam, a worldwide digital artistic collaboration resource. |
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## publications and presentations

- 2005 "Musique Littérale", panel and performance using Quoth at the 2005 Transmediale conference, Berlin, Germany.
- 2004 "Spoon, a minimal yet extensible Smalltalk", presentation at Smalltalk Solutions 2004, Seattle, Washington, USA.
- 2002 N. Alvarado, S. S. Adams, S. Burbeck, C. Latta, "Beyond the Turing Test: Performance Metrics for Evaluating a Computer Simulation of the Human Mind", submission to the International Conference on Developmental Learning
- 2002 C. Latta, N. Alvarado, S. S. Adams, S. Burbeck, "An Expressive System for Endowing Robots or Animated Characters with Affective Facial Displays", accepted paper at the 2002 conference of the British Society for Artificial Intelligence and the Simulation of Behavior, London, England.
- 2001 S. S. Adams, N. Alvarado, S. Burbeck, C. Latta, "Bootstrapping Semantics in an Autonomic Computing System", submission to the Workshop on Computational Semiotics
- 2001 N. Alvarado, S. S. Adams, S. Burbeck, C. Latta, "Integrating Emotion and Motivation into Intelligent Systems", submission to the IBM Systems Journal.

- 2001 "Handheld Squeak", invited talk at the 2001 European Smalltalk Users' Group conference, Essen, Germany.
- 2001 "Streaming Audio", in "Squeak: Open Personal Computing and Multimedia", Guzdial/Rose editors, Prentice-Hall, New York, USA.
- 1999 "Online Music Collaboration", invited panelist at the 1999 International Music eXposition conference, New York, USA.
- 1991 "Notes From the NetJam Project", Leonardo Music Journal vol. 1 issue 1 (December), Permagon Press, London.
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### teaching experience

- 2001 "CS377B: Dynamic Multimedia with Squeak", an invited one-quarter, 3-unit music/computer science course at the Center for Computer Research in Music and Acoustics (CCRMA), Stanford University, Stanford, California, autumn quarter.
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### independent research

- 2004-  
*present* **Quoth**, a dynamic interactive fiction system  
An interactive fiction authoring system operable from within the presented virtual space (rather than before runtime in a traditional development environment). I use it for live improvisational computer music performance.
- 2003-  
*present* **Spoon**, a minimal Smalltalk system  
Empirical determination and description of a minimal object memory image and virtual machine. Development of web-based delivery system.
- 1998-  
*present* the **Flow** streaming framework  
Development of an object model which provides consistent message interfaces for the manipulation of diverse external resources, including TCP/UDP, filesystems, and MIDI.
- 1996-  
*present* **Squeak** Smalltalk  
Participation in the evolution of the open-source Squeak Smalltalk system from its initial release. Development of release processes, assistance with project selection and advocacy.
- 1989-  
*present* **NetJam**  
Implementing a system to facilitate remote musical collaboration, using the Flow streaming framework and Smalltalk.
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My references are available by request.  
This résumé is also available in printer-friendly PDF format.

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