

Jeffrey Ventrella

JeffreyVentrella@gmail.com

Age 57 and proud of it.

www.jjventrella.com

www.ventrella.com

<https://vimeo.com/jeffreyventrella>

www.mathviz.com



| | | | |
|---|-----|---------------------------|------|
| Massachusetts Institute of Technology (The Media Lab) | MS | Media Arts and Sciences | 1994 |
| Syracuse University | MFA | Computer Graphics/Video | 1987 |
| Virginia Commonwealth University | BFA | Art Education/Art History | 1984 |

I am a highly creative, outside-of-the-box, visionary problem solver; a hands-on consultant with strong kinesthetic, narrative, and procedural intelligence. I work in augmented reality, virtual reality, educational media, data and math visualization, and interactive digital experiences. And I provide a distinctly human touch to the user experience – backed by lots of research, and expressed in my written works. I provide deep perspective for innovative startup companies or established corporations starting innovative projects.

I can prototype any idea in software (no matter how vague or crazy) and then lovingly evolve it into a solid, scalable architecture, with over twenty-five years of professional experience behind the process. No throw-away prototypes. That's wasteful. I cross the bridge between design and code. That's more than an intellectual toy idea – it's a lifelong practice. Many tech companies have a thin straight line separating "Designer" from "Developer" in the org chart. That's a mistake.

I have helped solve so many problems, visualized so many ideas, and manifested so many human-computer-interaction experiences in my career that the technical details have shapeshifted into a muse whom I consult with reverence and care. My brain has been ripening from this varied work for all those years – accelerated by the mental tools earned from three college degrees.

I am currently developing a VR app with a colleague using Unity and my own proprietary self-animated character system...and looking to land my next awesome gig.

| | | |
|--|--------------------------------------|-----------------|
| MeshOS , Sausalito, CA | Designer/Engineer (Contract) | 3/18 – present |
| Leap Motion , San Francisco, CA | Designer/Engineer (Contract) | 4/17 – 12/17 |
| Worked with engineers to implement the Clusters algorithm in VR | | |
| MeshOS , Sausalito, CA | Designer/Engineer (Contract) | 2/17 – 8/17 |
| Wiggle Planet, LLC , Petaluma, CA | Founder | 10/12 – present |
| Developing kid-friendly mobile apps featuring self-animated characters And artificial life with geo-located augmented reality | | |
| Virtuocity VR, Inc. , London, UK | Developer/Designer (Contract) | 8/16 – 12/16 |
| R&D in a virtual reality application using the Samsung GearVR and Unity | | |

| | |
|---|---------------|
| <p><u>Pillantas, Inc.</u> San Francisco, CA Developer (Contract) R&D using the Microsoft HoloLens; developed prototypes in Unity/Windows 10 for a highly-innovative augmented reality interface</p> | 6/16 – 8/16 |
| <p><u>Binary Simplex</u> Washington, DC Developer (Contract) Implementing cross-platform (iOS and Windows) rendering tools for patented optimized 3D mesh generation based on DICOM files.</p> | 1/15 – 12/15 |
| <p><u>For Goodnes Sake</u> San Francisco, CA Designer/Developer (Contract) Design and implementation of javascript-based simulation components for female-oriented sexuality education app</p> | 10/14 – 1/15 |
| <p><u>High Fidelity</u> San Francisco, CA Developer (Contract) Helped build-out core avatar systems, user interactions, particle systems, camera behaviors, and other virtual world features</p> | 4/13 – 8/13 |
| <p><u>Visual Music Systems</u>, Boston, MA Principle Developer Developed high-performance, realtime computer animation for a performative artform incorporating immersive displays and gestural input. Particle systems, 3D math/physics, and parameter-based control</p> | 6/11 – 9/12 |
| <p><u>The Internet Archive</u> San Francisco, CA Designer/Engineer (Contract) Worked closely with internet visionary Ted Nelson on implementation of ZigZag for the Open Library. Project management, JavaScript/HTML5/CSS development</p> | 10/10 – 11/10 |
| <p><u>Emota.net</u> Menlo Park, CA Designer/Engineer (Contract) NSF-funded start-up. Consulted on design; development: interactions and interfaces for social connectedness. Developed JavaScript code for web and iPad</p> | 7/09 – 9/10 |
| <p><u>School of Interactive Arts and Technology</u>, SFU, Vancouver, BC Research Scholar: nonverbal communication in virtual worlds. Taught Advanced Game Design class to 4th-year students. Wrote the book: <i>Virtual Body Language</i>: www.virtualbodylanguage.com</p> | 9/09 – 8/10 |
| <p><u>The Internet Archive</u> San Francisco, CA Developer/Designer: built home page for NASAIImages.org; designed and implemented the 'create account' page and other pages. Helped design the Open Library Bookreader using JavaScript/CSS.</p> | 3/08 – 7/09 |
| <p><u>Centre for Digital Media</u> Vancouver, BC Faculty: Developed curriculum and taught Building Virtual Worlds, advised students on industry-funded projects</p> | 8/08 – 12/08 |

| | |
|--|---------------------|
| <p><u>Millions Of Us</u> Sausalito, CA Consultant: Developed avatar-customization tool, general consulting</p> | <p>1/08 – 2/08</p> |
| <p><u>SheZoom</u> New York, NY Animator: designed and implemented Shemoticons in Flash</p> | <p>12/07 – 1/08</p> |
| <p><u>Linden Lab (Second Life)</u> San Francisco, CA Senior Developer: Developed software and designs for Second Life, invented Flexi Prims, FollowCam, vehicle physics, camera behavior, avatar customization, and user interfaces</p> | <p>1/05 – 11/07</p> |
| <p><u>Adobe Systems</u> San Jose, CA Programmer: Worked with the Acrobat 3D team (originally Adobe Atmosphere), developed JavaScript for direct manipulation, modeling, and interactive behavior of 3D content</p> | <p>2/04 – 7/05</p> |
| <p><u>There, Inc</u> Menlo Park, CA Co-Founder and Principle Inventor of There.com Developed prototype with Will Harvey April 1997 to April 1998; co-founded company with Will on April 1998. Invention of technologies and designs for avatars, vehicle physics and navigation, camera behavior, sound design, animal behaviors, and real-time voice-activated speech animation. Principal author on first patent granted to the company.</p> | <p>4/97 – 1/04</p> |
| <p><u>Rocket Science Games, Inc.</u> San Francisco, CA Designer/Engineer: Designed and prototyped software games. Worked with author Michael Crichton on a game prototype. Designed Darwin Pond</p> | <p>7/95 – 4/97</p> |
| <p><u>ABSOLUT Vodka</u> (via TBWA/Chiat Day NY, NY) Artist/Programmer: Developed code to generate stylized genetic algorithm-based variations of the Absolut Vodka Bottle using interactive evolution. Published online as promotion for the "Absolut Kelly" web site, Consulted with Kevin Kelly on the site</p> | <p>2/96 – 5/96</p> |
| <p><u>Protozoa</u> San Francisco, CA Software Engineer: Worked with Brad deGraf. Developed interactive tool to generate 3D tree models for a computer game.</p> | <p>3/95 – 3/95</p> |
| <p>Tufts University, <u>Experimental College</u>, Medford, MA Instructor: Designed and taught course: "Populating Virtual Reality". (Artificial Life: cultural implications, technical aspects).</p> | <p>1/95 – 3/95</p> |
| <p><u>Papyrus Design Group</u>, Somerville, MA Designer: Developed script and consulted on animated characters for proposed CD-ROM-based interactive comedy game.</p> | <p>12/94 – 3/95</p> |
| <p><u>Do While</u> Studio, Boston, MA Artist: Developed interactive animations; worked with artist Jen Hall</p> | <p>9/94 – 4/95</p> |
| <p><u>Cinergi Productions</u> Lenox, MA Artist/Programmer: Feature Film Special Effects Animator, (Sylvester Stallone Film, Judge Dredd) Programmed custom animation effects on SGI IRIS; collaborated artists.</p> | <p>7/94 – 8/94</p> |

Visible Language Workshop, MIT Media Lab, Cambridge, MA 9/92 – 3/94

Research Assistant: multimedia interfaces, AI, information design, and animation.

University of California, San Diego, Visual Arts Dept. San Diego, CA 1/92 – 6/92

Instructor: Worked under [Harold Cohen](#), developed curricula and taught courses in Graphics Programming, 3D CAD, and C Language

Syracuse University 7/87 – 12/91

Computer Graphics Specialist, Created Scientific Data Visualizations for supercomputer research. Taught workshops; Produced videotapes; Acquired video equipment, Attended Data Visualization Workshops at [NCSA](#).

Syracuse University Department of Industrial Design, Syracuse, NY 9/87 – 12/91

September 1987 – December 1991

Instructor: Taught Computer Aided Design for Industrial Design; Used SDRC-IDEAS software running on a VAX mainframe. Developed curriculum and co-authored graphics library for programming

Travel: Melbourne, Mumbai, London, Seoul, Paris, Kyoto, Banff, Barcelona, Florence, Bilbao, Geneva, Dublin, New York, Vancouver,

Technical Skills

Software Languages: C++, C#, JavaScript, Java
Development Tools: XCode, Unity, Visual Studio
Platforms: iOS, HoloLens, GearVR, html5/canvas/ web
Other: Adobe Premiere, Gimp, procedural animation, web design, audio design/processing, music composition, photography, cell animation,

Lectures/Presentations

Palo Alto, California 4/17
Presented my work at Stanford University as part of the MediaX series
<https://mediax.stanford.edu/events/artificial-life-meets-augmented-reality>

San Jose, California 11/16
Presented my work on AI-driven characters for augmented reality at the [Narrative Summit](#)

Santa Barbara, California 6/16
Presented [keynote](#) at the [Immersive Learning conference](#)

Los Angeles, California 10/15
Presented on a panel at [Digital Hollywood](#)

Barcelona, Spain 2/13
Presented keynote presentation at [VISIGRAPP](#) conference

| | |
|--|-------|
| Pittsburgh, PA Presented Virtual Body Language at Carnegie-Mellon University's ETC | 10/11 |
| Vancouver, BC, Canada Gave keynote presentation at International Symposium on Computational Aesthetics in Graphics, Visualization, and Imaging : a SIGGRAPH co-located conference. | 8/11 |
| Menlo Park, California Gave a presentation at the Talks on Computing Systems series at Carnegie-Mellon University, Silicon Valley, NASA Ames Campus | 5/11 |
| Laval, France Gave the first keynote at the Laval Virtual conference | 4/11 |
| Los Angeles, California <i>Virtual Body Language</i> Presented avatar expression at an invitation-only workshop at ICT, USC | 2/11 |
| Banff, Alberta, Canada , <i>Self-Portraits in Mandelbrot Genetics</i> Smart Graphics . Presented mathematically-generated artworks | 6/10 |
| Toronto, Ontario, Canada , <i>The Gestural Turing Test</i> AAMAS Presented motion-capture experiment in nonverbal communication and believability (details available at http://gesturalturingtest.com/) | 5/10 |
| Melbourne, Australia , <i>Workshop Lecturer</i> ACAL - Presented ecological simulation using planetary toy physics, emphasizing Open, collaborative development | 12/09 |
| Palm Springs, California , Keynote Speaker . HPC Horizons . How genetics, physics, and communication can be represented for efficient traversal over the internet for virtual worlds. Other Keynote speakers were Craig Venter and Jaron Lanier. | 3/08 |
| Boston, Massachusetts Prime Numbers are the Holes Behind Complex Composite Patterns (The Divisor Plot) at the 7th International Conference on Complex Systems | 10/07 |
| Vancouver, BC, Canada <i>Online Body Language - Expressivity and Identity in Avatars and Autonomous Creatures</i> School of Interactive Art and Technology (SFU) Research Colloquium | 9/07 |
| Boston, Massachusetts <i>Physical Avatar</i> – a new technology for Second Life SIGGRAPH conference Tech Talk | 8/06 |
| Bloomington, Indiana A Particle Swarm Selects for Evolution of Gliders in Non-uniform 2D Cellular Automata - paper presented at Alife X conference | 6/06 |
| Pittsburg, Kansas presented overview of work at Pittsburg State University | 4/05 |
| Bilbao, Spain conducted workshop at the Universidad del Pais Vasco on <i>techniques for using mathematics to generate portraits</i> . Presented interactive and print work at <i>La 17 Exposición de Audiovisuale</i> . | 12/04 |

| | |
|---|-------|
| Bilbao, Spain Sharing the Virtual Ecosystem (<i>the Interactive Web of Virtual Life and Avatars</i>) Art and Technology Symposium, Universidad del Pais Vasco | 12/03 |
| Stanford University, Palo Alto, CA Avatar-Centric Communication in There , co-lectured with Dr. Chuck Clanton , at the Human-Computer Interaction Seminar | 4/03 |
| Dundee, Scotland <i>Artful Biology: Simulated Creatures for Software Entertainment</i> , presented at International Centre for Computer Games and Virtual Entertainment | 2/01 |
| Paris, France Avatar Physics and Genetics , presented at Virtual Worlds. 2000 | 7/00 |
| San Jose, CA presented artificial life research at Digital Biota conference | 11/99 |
| Syracuse, NY Presented overview of artistic development Syracuse University Visual and Performing Arts Dept. | 2/99 |
| Paris, France Designing Emergence in Animated Artificial Life Worlds presented at Virtual Worlds 98 | 7/98 |
| Los Angeles, CA Attractiveness vs. Efficiency (<i>How Mate Preference Affects Locomotion in the Evolution of Artificial Swimming Organisms</i>) - presented at Artificial Life VI | 6/98 |
| Brighton, England Darwin Pond - Demonstration presented at the European Conference on Artificial Life | 7/97 |
| Montreal, Canada <i>Eukaryotic Virtual Reality (The Emergent Art of Artificial Life)</i> - presented in a Panel at ISEA95 conference | 9/95 |
| Geneva, Switzerland <i>Disney Meets Darwin</i> - Paper presented at Computer Animation, '95 | 4/95 |
| Cambridge, MA <i>Explorations in the Emergence of Morphology and Locomotion Behavior in Animated Characters</i> - Paper presented at Artificial Life IV , MIT | 7/94 |
| San Diego, CA Artificial Life and a Computer Art of Emergence - slide and video lecture: Center for Research and Computing in the Arts, UCSD | 5/92 |
| New London, CT <i>A Genetic Approach to Computer Art</i> - Visiting Artist, lectured and conducted workshops on mathematical images, Center for Arts and Technology, Connecticut College | 10/91 |
| San Francisco, CA Factors Inducing Periodic Breathing in Humans (<i>a case study in scientific data visualization</i>), co-lectured with Dr. Wayne Fordyce, at Visualization '90 | 10/90 |
| Halifax, Nova Scotia <i>Computer Graphics for the Human</i> - a half-day tutorial, presented at Graphics Interface/Vision Interface | 5/90 |
| Williamsburg, VA A Computergraphical Model of Multi-generational Family Systems – Presented (with Jim Amodio and Tom Schur) at Advanced Computing for the Social Sciences | 5/90 |

| | |
|---|-------|
| New London, CT <i>Using Mathematics to Arrive at Imagery</i> - Presented at the Arts and Technology Symposium II Connecticut College | 2/89 |
| Syracuse, NY Television Interview (with computer animations) on 6:00pm news story on Chaos: interviewer, Scott Atkinson, News Center Five | 7/88 |
| Syracuse, NY Fractal Geometry in Art - The Mandelbrot Colloquium, with four other speakers <i>including Dr. Mandelbrot</i> | 11/86 |

Published Works

Embodied AI Characters for Emergent Narrative

OurMedia Blog: <http://ourmedia.org/embodied-ai-characters-for-emergent-narrative/>

Various articles published on Nature, Brain, Technology: <https://ventrellathing.wordpress.com/>

Brainfilling Curves – a Fractal Bestiary

A color book about a system for discovering and rendering plane-filling fractal curves.

[Book web site](#)

From Ragdoll Physics to Expressive Avatars

Paper published in the International Journal of Design and Innovation Research: 2011

[see abstract](#)

Virtual Body Language

Currently available at www.virtualbodylanguage.com - published by [ETC Press](#) in 2011

Self-Portraits in Mandelbrot Genetics – Springer: conference proceedings of [Smart Graphics](#), 2010

The Gestural Turing Test - published in the conference proceedings of [AAMAS](#), 2010

Glider Dynamics on the Sphere: Exploring Cellular Automata on Geodesic Grids. to be published in the Journal of Cellular Automata (Editor Andy Adamatzky)

<http://www.ventrella.com/AI/Cells/GlidersOnSpheres.pdf>

A Spherical XOR Gate Implemented in the Game of Life to be published in the book: Game of Life Cellular Automata, Editor Andy Adamatzky, Springer.

Evolving Structure in Liquid Music [The Art of Artificial Evolution](#), Natural Computing Series, Springer-Verlag, Editors: Romero, J., and Penousal, M. November, 2007

<http://www.springer.com/west/home/computer/foundations?SGWID=4-156-22-173745009-0>

Evolving The Mandelbrot Set to Imitate Figurative Art [Innovations in Evolutionary Design](#), Natural Computing Series, Springer-Verlag, Editors: Hingston, P., Barone, L., and Michalewicz, Z. Berlin, 2007

<http://www.ventrella.com/Tweaks/Portraits/EvolvingMandelbrot.pdf>

Gliders and Riders - A Particle Swarm Selects for Coherent Space-time Structures in Evolving Cellular Automata – a chapter in [Stigmergic Optimization](#), from the Studies in Computational Intelligence Series. Vol 21, Springer-Verlag. eds. Ajith, Grosan, and Ramos. page 131, 2006

<http://www.springer.com/east/home/computer?SGWID=5-146-22-173661230-0>

GenePool – Exploring the Interaction Between Natural Selection and Sexual Selection –Chapter 4 in *Artificial Life Models in Software*, ed. Andrew Adamatzky and Maciej Komosinski. Springer, 2005. Page 81
<http://www.springerlink.com/content/tv10101372574541/>

Animated Artificial Life, Chapter 3 in *Virtual Worlds (Synthetic Universes, Digital Life, and Complexity)* (ed. Heudin, J.C.) Perseus Books, 1999 pages 67-94
http://www.ventrella.com/Alife/Animated/animated_0.html

A Computergraphical Model of Multi-Generational Family Systems, chief author and editor (with James H. Amodio, MPS, and Thomas J. Schur, MSW), in *Social Science Computer Review*, Spring 1991 Volume 9 Number 1, pages 13-26
<http://ssc.sagepub.com/cgi/content/abstract/9/1/13>

A Particle Swarm Selects for Evolution of Gliders in Non-uniform 2D Cellular Automata published in *Alife X* conference proceedings, MIT Press, 2006
<http://www.ventrella.com/Alife/Cells/GlidersAndRiders/SwarmGliders.pdf>

Avatar Physics and Genetics, published in *Virtual Worlds*, 2000 (ed. Heudin, J.C.), Springer-Verlag Berlin/Heidelberg
<http://portal.acm.org/citation.cfm?id=647690.731011&coll=GUIDE&dl=GUIDE&CFID=15151515&CFTOKEN=6184618>

Designing Emergence in Animated Artificial Life Worlds, *Virtual Worlds*, 98 (ed. Heudin, J.C.) 1998, Springer-Verlag pages 143-155 <http://portal.acm.org/citation.cfm?id=733452>

Attractiveness vs. Efficiency: (How Mate Preference Affects Locomotion in the Evolution of Artificial Swimming Organisms), *Artificial Life VI*, 1998, MIT Press
<http://portal.acm.org/citation.cfm?id=286160&dl=&coll=&CFID=15151515&CFTOKEN=6184618>

Sexual Swimmers: Emergent Morphology and Locomotion Without a Fitness Function, From *Animals to Animats*, (page 484) 1996, MIT Press http://www.ventrella.com/Alife/Sexual/sexual_0.html
Disney Meets Darwin: The Evolution of Funny Animated Figures, *Computer Animation '95 Proceedings - Geneva Switzerland* <http://portal.acm.org/citation.cfm?id=791214.791452>

Explorations in the Emergence of Morphology and Locomotion Behavior in Animated Characters, *Artificial Life IV* proceedings, MIT Press, 1994

Other Published Materials:

Write-up on Air Traffic Control Visualization Prototype: Enhancing Air Traffic Control Information, by David L. Chandler, in the [MIT Technology Review](#), pages 10-11 8/94

Co-designed cover of **IBM Systems Journal** ([vol. 33, No 2 1994](#)) with J.F. Musgrave, image depicts a family of images I designed. 6/94

Created five illustrations for book: [The Children's Machine \(Rethinking School in the Age of the Computer\)](#), by Seymour Papert, 6/93

Two images published in the large color-illustration book: **Digitale Visionen**, IBM Germany, by Dr. [Herbert Franke](#), 1989

Creatures du Plan Complexe, (French translation of IRIS Universe '88 article with color illustrations, in *Tech Images*, January issue: Paris France, 1/89