

## TRENT GROVER

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### EDUCATION

#### **M.F.A. in Integrated Visual Arts**

2008

Iowa State University, Ames, Iowa

Cumulative GPA: 3.93/4.0

- Created real-time interactive art installations using custom computer vision software
- Used nonstandard input technologies (cameras, EEG)
- Studied advanced 2D digital image manipulation and 3D computer animation
- Contributed to *Shiny Happy Users*, a book on user experience research

#### **B.S. in Computer Science**

2001

Iowa State University, Ames, Iowa

Cumulative GPA: 3.90/4.0

### PROFESSIONAL EXPERIENCE

#### **Chief Technology Officer / Board Member**

May 2001 – Present

Micoy Corporation, Ames, Iowa

- Invented five omnistereo panoramic video technologies (both physical camera systems and computer graphics software systems)
- Led intellectual property efforts (two patents granted, three pending)
- Wrote proprietary omnistereo image processing and video registration software
- Wrote Mental Ray lens shader implementations of omnistereo rendering techniques
- Co-wrote omnistereo video playback application
- Interfaced with SDKs from various tracker and display systems (HMDs, autostereo monitors, head trackers, shutter glasses, etc)
- Participated in strategic planning sessions

#### **Research Assistant**

Jan 2007 – Present

Virtual Reality Applications Center, Ames, Iowa

- Offered artistic and technical expertise to the *Meta!Blast* virtual plant cell project
- Managed a team of 7-14 student artists and programmers
- Wrote Python scripts to automate molecular data extraction and 3D geometry generation from Protein Data Bank files
- Wrote MEL scripts to automate portions of the art production pipeline, including geometry export from Maya to a custom OpenGL-based VR engine and the Torque Game Engine
- Created 2D and 3D art assets using Adobe Photoshop and Autodesk Maya
- Created Flash user interface for interactive DVD

#### **Technology Consultant**

Nov 2004 – Jan 2007

ImageFusion, Cedar Rapids, Iowa

- Designed and constructed a large document scanner (capable of scanning a 30"x60" area at 300 dpi in 3 seconds)
- Performed mechanical component specification and integration (machined aluminum frame, stepper motor, motor controller, linear actuator, proximity sensors, frame grabber, metal halide lamp controllers, power conditioner, encoder, etc)
- Designed and implemented GUI based control software for scanner using real-time image processing techniques
- Programmed embedded motor control functions
- Wrote detailed device and software documentation
- Wrote optimized image processing routines for enhancing scanned newspaper archives (auto deskewing, auto border detection, auto cropping, auto color enhancement, OCR, lighting correction, etc)
- Created a C# wrapper library for Intel's Open Computer Vision library
- Created a C# twain wrapper

**Teaching Assistant**

Aug 2005 – Dec 2006

Iowa State University, Ames, Iowa

- Designed curriculum for *ArtIS 211x: Introduction to Computer Art Studio*
- Taught digital painting, photo manipulation, and digital montage using Adobe Photoshop
- Received excellent student course and instructor reviews

**Video Game Programmer**

Jun 2000 – Dec 2000

Pierce Studios, Ames, Iowa

- Programmed three PC casino game suites (12 card games)
- Wrote video game documentation
- Edited audio and visual video game content

**Research Aide**

May 2000 – Aug 2000

Virtual Reality Applications Center, Ames, Iowa

- Created 3D avatars for collaborative virtual reality environments
- Programmed a Performer based virtual reality menu system

**Technical Animator Intern**

May 1998 – Dec 1998

Engineering Animation Inc., Ames, Iowa

- Performed 3D computer modeling and animation tasks for litigation and entertainment divisions
- Created 3D art assets for 75% of the levels of *Animaniacs: A Gigantic Adventure*
- Digitized vehicles for use in accident recreations

**Web Designer**

Feb 1998 – May 1998

Deere &amp; Company, Ames, Iowa

- Documented current virtual reality research
- Created a system of web pages for internal use

COMPUTER SKILLS**Artistic**

- Maya
- UVLayout
- Flash
- 3D Studio MAX
- AutoCAD
- Premiere
- Cinema4D
- Photoshop
- Sound Forge

**Technical**

- C++
- OpenGL
- MEL script
- Action script
- C#
- DirectX
- MAX script
- Python
- Visual Basic
- OpenCV

PUBLICATIONS AND PATENTS***Shiny Happy Users***

2007

Available for purchase or download from shinyhappyusers.org and lulu.com

***Multi-Dimensional Imaging Apparatus, Systems, and Methods***

2004

Patent# 7,347,555 – Granted March 25, 2008

***Stereoscopic Panoramic Image Capture Device***

2001

Patent# 6,947,059 - Granted September 20, 2005

***Image Processing and Display***

2005

Filed May 13, 2005

***Image Capture and Processing***

2005

Filed May 13, 2005

***Multi-Dimensional Imaging***

2005

Filed April 4, 2005

EXHIBITIONS

<b>Studies in Creativity 2006</b> , Memorial Union Gallery, Iowa State University <i>BabySitter</i> (interactive computer graphics) <i>Consumer Self-Portrait #2</i> (photo manipulation)	<b>2006</b>
<b>Print &amp; Photo 2005</b> , Memorial Union Pioneer Room, Iowa State University <i>Wedding Sunrise</i> (photo manipulation)	<b>2005</b>
<b>Studies in Creativity 2005</b> , Memorial Union Gallery, Iowa State University <i>Cave Scratchings</i> (photo manipulation) <i>ID</i> (computer graphics) <i>Blood Rites</i> (computer graphics)	<b>2005</b>
<b>Milf* Student Film Competition 2002</b> , Kocimsky Auditorium, Iowa State University <i>The Calling</i> (2 <sup>nd</sup> Place Full Feature, film)	<b>2002</b>
<b>Animation de Facto</b> (TV series) <i>Stirred</i> (computer animation) <i>No Trespassing!</i> (computer animation)	<b>2001</b>
<b>ISU Short Film Festival 2001</b> , Kocimsky Auditorium, Iowa State University <i>Stirred</i> (Best in Show, computer animation) <i>No Trespassing!</i> (computer animation)	<b>2001</b>
<b>32<sup>nd</sup> International Visual Literacy Association Conference</b> <i>Stirred</i> (computer animation)	<b>2000</b>
<b>Quantum Whatever</b> , Volume 1, Issue 3 <i>Cyatrace</i> (drawing)	<b>1998</b>

HONORS

Gold Award, *World's Best Technologies Showcase 2005*  
 2<sup>nd</sup> Place, Full Feature category, *Milf\* Student Film Competition 2002*  
 Best in Show, *ISU Short Film Festival 2001*  
 National Merit Scholar  
 Student Advisor to Minnetonka Public Schools Technology Education Curriculum Review Committee