

MICHAEL J. KARLESKY

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<http://karlesky.net>

EDUCATION

[NYU Polytechnic School of Engineering](#), *New York City*

- Ph.D. Candidate, Computer Science; Advisor: Dr. Katherine Isbister (2011–present)

[Grand Valley State University](#), *Grand Rapids, Michigan*

- B.S. Engineering, Electrical Emphasis (1999)
- B.S. Computer Science (1999)
- Honors College of Liberal Arts (1999)
- Math Minor (1999)

SCHOLARSHIPS, FELLOWSHIPS & AWARDS

NYU Polytechnic School of Engineering

- NSF IGERT / INSPIRE Traineeship (2011–2013)

Grand Valley State University

- Presidential Scholarship (1994–1998)
- Kirkhof Engineering Scholarship (1994–1999)
- Top Program Graduate Engineering Faculty Award (1999)
- Top Program Graduate Computer Science Faculty Award (1999)
- Computer Science Departmental Scholarship (1997)

[Michigan Space Grant Consortium](#)

Undergraduate Fellowship (1997)

[Solar Splash Solar Electric Boat Collegiate World Championship](#)

- Outstanding Electrical System Design (1996)
- Second Place Overall (1996)

AREAS OF RESEARCH INTEREST

- [Playful Media](#)
- Social and Emotional Approaches to Human Computer Interaction
- Gesture-based Interfaces

OTHER EDUCATION EXPERIENCE

[Values in Design Doctoral Candidates Workshop](#), *Irvine, California*

Values in Design Lab, School of Information & Computer Sciences, University of California (2012)

[UX Intensive Workshop](#), *Minneapolis, Minnesota*

Design Strategy, Design Research, Interaction Design, and Information Architecture (2008)

[Kendall College of Art & Design](#), *Grand Rapids, Michigan*

PORTFOLIO

<http://karlesky.net/portfolio>

A detailed collection of my most interesting professional, academic, and entrepreneurial projects

PUBLICATIONS & PRESENTATIONS

[*New Widgets Let You Snap, Crackle... and Think*](#)

Karlesky, M.

Live Science. July 15, 2014.

[*Who You Are by way of What You Are: Behavioral Biometric Approaches to Authentication.*](#)

Karlesky, M.; Sae-Bae, N.; Isbister, K.; Memon, N.

SOUPS 2014: Symposium On Usable Privacy and Security. Menlo Park, California. July, 2014.

Who are you?! Adventures in Authentication: WAY Workshop

[*Designing for the Physical Margins of Digital Workspaces: Fidget Widgets in Support of Productivity and Creativity*](#)

Karlesky, M.; Isbister, K.

TEI '14: 8th International Conference on Tangible, Embedded and Embodied Interaction.

Munich, Germany. February, 2014.

[*Open Sesame: Re-envisioning the Design of a Gesture-based Access Control System.*](#)

Karlesky, M.; Melcer, E.; Isbister, K.

Extended Abstract, CHI 2013: ACM SIGCHI Human Factors in Computing Systems.

Paris, France. April, 2013.

[*Fidget Widgets: Secondary Playful Interactions in Support of Primary Serious Tasks*](#)

Karlesky, M.; Isbister, K.

Extended Abstract, CHI 2013: ACM SIGCHI Human Factors in Computing Systems.

Paris, France. April, 2013.

[*Scoop! A Movement-based Math Game Designed to Reduce Math Anxiety*](#)

Isbister, K.; Karlesky, M.; Frye, J.; Rao, R.

Interactivity, CHI 2012: ACM SIGCHI Conference on Human Factors in Computing Systems.

Austin, Texas. May, 2012.

[*Scoop! Using Movement to Reduce Math Anxiety and Affect Confidence*](#)

Karlesky, M.; Frye, J.; Isbister, K.

Work in Progress, Foundations of Digital Games. Raleigh, North Carolina. May, 2012.

[*Way Better Error Handling in C Using CException*](#)

Great Lakes Software Excellence Conference. Grand Rapids, MI. April 2011.

[*Agile Project Management \(or, Burning Your Gantt Charts\)*](#)

Karlesky, M.; VanderVoord, M.

Proceedings of Embedded Systems Conference Boston. Boston, MA. October 2008.

[*Mocking the Embedded World:*](#)

[*Test-Driven Development, Continuous Integration, and Design Patterns*](#)

Karlesky, M.; Williams, G.; Bereza, W.; Fletcher, M.

Proceedings of Embedded Systems Conference Silicon Valley. San Jose, CA. April 2007.

Effective Test-Driven Development for Embedded Software

Karlesky, M.; Bereza, W.; Erickson, C.

IEEE 2006 Electro/Information Technology Conference Proceedings. East Lansing, MI. May 2006.

A Virtual Reality Robot

Jack, H.; Ray, J.; Karlesky, M.; Kuieck, B.; Devos, R.

ASEE North Central Section Conference Proceedings. Lansing, MI. April 2000.

A Virtual Manufacturing Laboratory

Jack, H.; Karlesky, M.

ASEE National Conference Proceedings. Seattle, WA. July 1998.

Network Facilitated Equipment Control

Jack, H.; Karlesky, M.

Michigan Space Grant Consortium Conference. Ann Arbor, MI. October 1997.

PROFESSIONAL EXPERIENCE

Atomic Object / Atomic Embedded

Vice President, Senior Software Developer, Interaction Designer (2004–2011)

- Lead developer of complex embedded GUI for advanced color measurement product development effort
- Played foundational role in developing company's contract embedded software practice
- Redesigned company website for web usability and search indexing

Self-Employment

Independent Contractor: Software Development & Engineering Consulting (2000–2004)

- Developed custom DSP system to decode analog data stream transmitted from Indian weather balloons
- Implemented real-time software for Naval Research Lab high-precision targeting system

MyPort Express

Product Development Engineer (2000–2002)

MyPort Express specialized in inexpensive, consumer “information theaters.” The startup concept married unified communications services (voice and data in a single repository) with economical information appliances in the home. Dial-up modems, paging, powerline networking, Caller ID, voice compression, and simple displays created personal, always-on information streams before widely available broadband.

- Assembled and programmed entire demonstration information appliance system
- Fabricated information appliances and interfaces
- Created Linux-based unified communications demonstration server with web and telephony interfaces

RESEARCH EXPERIENCE

Polytechnic Institute of New York University, New York City

Scoop!, Open Sesame, Fidget Widgets (2011–present)

Advisor: Dr. Katherine Isbister

Scoop! is a movement-based research game incorporating the Microsoft Kinect. Its purpose is to further existing research by exploring the possibility that gesture design can boost feelings of confidence and in turn aid learning of anxiety-inducing math topics (e.g. fractions) among middle school students.

Open Sesame aims to turn on its head the widely held view that secure systems cannot be usable. The system replaces a traditional access card system with a gesture-based system able to identify at a distance a user and allow that user to unlock a door using one of several pleasurable self-selected gestures.

Fidget Widgets explore the connection of doodling, fiddling, and fidgeting behaviors to the thought-intensive work processes they often accompany. Research shows a strong link between motion, emotion, and thought — including these behaviors. Why can't digital systems have “margins” to support these behaviors? Our aim is to not only develop digital experiences that mimic their analog counterparts but to provide specific selections of small but measurable boosts to creativity, focus, or calm through use of our playful Fidget Widgets.

Grand Valley State University, Grand Rapids, Michigan

Automated Manufacturing Lab (1997–1998)

Advisor: Dr. Hugh Jack

The Automated Manufacturing Lab consisted of a motion control camera, two industrial robots, and two CNC machines all Internet-connected to provide students virtual models of the equipment as well as remote tele-presence for completing classroom assignments. Virtual equipment models (Java & VRML) hosted in a web browser with server-based program execution emulated real equipment for initial experimentation and program development. Students uploaded their programs from the virtual models to the actual equipment to be monitored remotely over a streaming video feed.

TEACHING EXPERIENCE

Grand Valley State University, Grand Rapids, Michigan

EGR 226 – Introduction to Digital Systems

Lab Instructor (2000)

United States Government

“Embedded Test-Driven Development” Training Class

Curriculum Author & Training Facilitator (2010)

OTHER WRITING

[PresenterFirst](#)

Wikipedia entry discussing a software design pattern and programming approach that is highly effective toward separation of concerns and maximizing testability of GUI software.

[Our Historic Building](#)

Extensively researched history of my neighborhood in Grand Rapids, MI (once known as “Wealthy Heights”) and my current employer’s century-old building.

OPEN SOURCE SOFTWARE CONTRIBUTIONS

[Unity](#)

Unity is a unit test framework in the style of xUnit toolsets for the C programming language – includes a number of features tailored for embedded software development.

[CMock](#)

CMock is a Ruby-based code generator used to create mock implementations of C source file interfaces for use in the interaction-based style of unit testing.

[Ceedling](#)

Ceedling is a Ruby & Rake-based build system useful in quickly assembling unit test and release build configurations of C-based projects. Ceedling ties together Unity, CMock, CException, and compilation toolchains into a simple, configurable environment.

MEMBERSHIPS

[The Association for Computing Machinery](#)

[The Association for the Study of Play](#)

[New York Academy of Sciences](#)