

# Matthew Karau

mkarau@ex-ch.com

## Experience

- 2010 – Present **New York University Abu Dhabi** **Abu Dhabi, United Arab Emirates**  
*Research Associate.* Co-create and present short-term, intensive design and innovation workshops for undergraduate engineering students.
- 2007 – Present **Universität der Künste Berlin (University of the Arts Berlin)** **Berlin, Germany**  
*Künstlerischer Mitarbeiter (Lecturer).* Member of the core staff in the “Digital Class” for master students. Teach seminar “All about Electronics and Mechanics”. Advise students on semester projects and diploma/thesis works.
- 2005 – Present **Extended Characters** **Dublin, Ireland / Berlin, Germany**  
*Consultant.* Provide educational, electronics design and prototyping services to academia, media artists, museums and small business. Develop sensing interfaces, time pieces, remote installation management, and wireless Personal Area Network applications.
- 2008 – 2011 **Art+Com, Art+Com Technologies** **Berlin, Germany**  
*Electronics Engineer.* Chief electronics designer and embedded programmer for large-scale public interactive installations. Developed capacitive touch sensor technology for multi-user engagement. Developed hardware and embedded firmware for various applications.
- 2007 – 2008 **Distance Lab** **Forres, Scotland**  
*Consultant / Senior Researcher.* Provided time-sensitive planning, design, and electronics advice during the start-up phase of the lab. Research agenda: designing and engineering innovations to overcome the disadvantages of long-distance communications.
- 2005 – 2006 **Staatliche Hochschule für Gestaltung (College for Design)** **Karlsruhe, Germany**  
*Guestprofessor (Guest Professor).* Co-created and lectured in project-based courses in Digital Media design. Courses centered on designing rich, interactive objects and experiences. Emphasis on creative use of electronics, best practices in design, rapid prototyping and manufacturability.
- 2006 – 2007 **University of Dublin, Trinity College** **Dublin, Ireland**  
<sup>2003</sup> *Lecturer, MSc. Multimedia Systems, Department of Computer Science.* Co-created and lectured in courses focused on marrying software and electronics with interaction design for creative applications.
- 2001 – 2005 **MIT Media Lab Europe** **Dublin, Ireland**  
**++ Electronics Laboratory Manager (2003 – 2005)**  
Created a comprehensive workshop for electronics prototyping. Managed purchasing, inventory control and resource planning. Provided electronics tutoring and design consultancy. Collaborated on projects across the gamut of research interests in the lab.  
**++ Audio & Video Studio Manager (2003 – 2005)**  
Specified, installed and maintained a high-end studio for audio and video production, editing, post-production and streaming. Provided related hardware and software training.  
**++ Research Fellow, Everyday Learning Group (2001 – 2003)**  
Researched multi-modal learning in design, deconstruction, and personal reflection. Created kits, electronics, and learning environments to explore learning in physics, health and movement in public places.

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## Experience

- 1998 – 2001 **MIT Media Laboratory** **Cambridge, MA, USA**  
*Undergraduate Research Opportunities Program (UROP) Researcher.*  
**++ UROP, Tangible Media Group. Summer 2001.**  
Designed and built 'PegBlocks', a distributed, tangible interface of networked grids of wooden-peg transducers. Appeared at Ars Electronica, 2001-2003.  
**++ UROP, Digital Life Consortium. Winter 1999.** Designed and prototyped electronics for "MediaVest", a wearable device that wirelessly reports localised environmental and physiological sensor signals. Vest used to monitor vital metrics of climbers on Mt. Everest.  
**++ UROP, Spatial Imaging Group. September 1998 – September 1999.**  
Worked on various research projects, including one-step, full-color holography, auto-stereoscopic displays and holographic hard-copy printing.
- 2000 **Apple Computer** **Cupertino, CA, USA**  
*Engineering Intern, User Interface Hardware Engineering.* Collaborated on redesign and verification of new capacitance-sensing technology. Conducted feasibility studies on new human interface devices.
- 1998 **华东师范大学第二附属中学 (No. 2 High School Attached to East China Normal University (ECNU))** **Shanghai, China**  
*Course Instructor, MIT-China Educational Technology Initiative (CETI).* Co-developed and presented a course on network theory and web programming (HTML, VRML, JavaScript) to secondary school students.

## Education

- 2004 **Certificate, Cuisine de Base** **Sydney, NSW, Australia**  
Le Cordon Bleu. Awarded "Dux", best overall performance.
- 2001 **Bachelor of Science, Electrical Engineering and Computer Science**  
Massachusetts Institute of Technology **Cambridge, MA, USA**

## Lecturing

- 2007 – 2013 **Digital Class.** Lecturer, Project and thesis advisor, Universität der Künste Berlin. Berlin, Germany.
- 2007 – 2013 **All About Electronics and Mechanics.** Lecturer, Universität der Künste Berlin. Berlin, Germany
- 2010 – 2013 **Engineering Fundamentals: Design and Innovation Lab.** Lecturer / Advisor, New York University, Abu Dhabi. Abu Dhabi, United Arab Emirates.
- 2006 **MM118: Electronics.** Lecturer, University of Dublin, Trinity College, (Master of Science in Mul Media) MSCMM. Dublin, Ireland.
- 2006 **MSCMM Program.** Lecturer and tutor, University of Dublin, Trinity College. Dublin, Ireland.
- 2006 **Sacral Design.** Lecturer and tutor, Universität der Künste Berlin. Berlin, Germany.
- 2006 **Show-Off Devices.** Guest Professor, Hochschule für Gestaltung. Karlsruhe, Germany.
- 2005 **Touching.** Guest Professor, Hochschule für Gestaltung, Karlsruhe. Karlsruhe, Germany.
- 2003 **Electronics for Designers.** Lecturer, University of Dublin, Trinity College. Dublin, Ireland.
- 1998 **MIT-CETI.** Instructor, No. 2 Secondary School attached to ECNU. Shanghai, China.

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## Workshops

- 2008 **Hi-Five**. Funchal, Madeira.
- 2007 **Hi-Five – Remote Interaction Design**. Forres, Scotland / Sibiu, Romania.
- 2006 **RFID – Touch**. Oslo School of Architecture. Oslo, Norway.
- 2006 **RFID & The Internet of Things**. Mediamatic. Amsterdam, Netherlands.
- 2005 **GPS, RFID, and Microcontrollers**. Re/Act 2005. Heidelberg, Germany.
- 2005 **Triggered by RFID 2**. Mediamatic. Amsterdam, Netherlands.
- 2005 **Triggered by RFID**. Mediamatic. Amsterdam, Netherlands.
- 2004 **Electronics and Interactive Textiles**. MIT Media Lab Europe. Dublin, Ireland.

2002 – 2004 **Workshops at Ark Children’s Cultural Centre**. The Ark. Dublin, Ireland.

- Selected Publications** **“RAW: Rethinking the editing process and mediation in audiovisual narrative experience”**; Bitton, Agamanolis, Karau. Proceedings of ISEA 2004.  
**“RAW: Conveying minimally-mediated impressions of everyday life with an audio-photographic tool”**; Bitton, Agamanolis, Karau. Proceedings of ACM CHI 2004.  
**“Transparent Hearing”**; Mueller, Karau. Proceedings of ACM CHI 2002.

## Exhibitions

- February 2012 **Laserinne**. Levi Ski Resort. Levi, Finland.
- July 2011 **Al Halqa**. Haus der Kulturen der Welt (House of the Cultures of the World). Berlin, Germany.
- February 2006 – April 2006 **Makroskop**. Museum für Fotografie, H. Newton Stiftung. Berlin, Germany.
- December 2005 – January 2006 **Student Projects**. Re/Act 2005. Heidelberg, Germany.
- July 2005 **Urban Chameleon**. Wired Nextfest. Chicago, IL, USA.
- June 2005 – August 2005 **Mutsugoto**. Touch Me Exhibition. Victoria & Albert Museum, London, U.K.
- 2001 – 2003 **Pegblocks**. Get In Touch Exhibition. Ars Electronica, Linz, Austria.

**Skills** Mixed-signal electronics design, embedded electronics design, interaction design, CAD, CAM, manual/CNC machining, Audio and Video production.

**Computing** Windows, Apple, \*nix, C, C++, Java, Lisp/Scheme, PERL, php, SQL, \*nix shell scripting, system administration, network administration.

**Software Used** Solidworks, AutoCAD, Altium Designer, SPICE, QUCS, Matlab, Mathematica, R, Arduino, avr-gcc, Processing, OpenOffice, Eclipse, Adobe CS, The Gimp, Final Cut Pro.

**Activities** Alpine skiing, mountain biking, ice hockey, roller hockey, rock climbing, cooking, adventure eating, photography, oil pastels, pottery, woodworking.

**<MetaTags>** Engineer, inventor, would-be chef, avid traveller, incurable tinkerer, lover of music, analyst of film, collector of links, organizer of chaos.

**Extraneous Information** Born in Indiana, USA. Grew up, surrounded by automotive engineering minds, near Flint, Michigan, USA. Lived 4 years in Boston, Massachusetts, USA, 5 years in Dublin, Ireland, 2 years in Inverness Scotland, and moved to Berlin, Germany in 2008.

**Links** **Art+Com** (<http://www.artcom.de>)  
**Universität der Künste Berlin** (<http://www.udk-berlin.de>)  
**Digital Class at UdK** (<http://digital.udk-berlin.de>)

References available upon request.