Dr.-Ing. David Lindlbauer – CV

ETH Zurich, Switzerland
Advanced Interactive Technologies Lab
www.davidlindlbauer.com
info@davidlindlbauer.com

Personal details

Birthday	March 6th 1986
Nationality	Austria

Academic positions

Postdoctoral researcher at ETH Zurich, Department of Computer Science
Advanced Interactive Technologies (AIT) Lab
Zurich, Switzerland, 09/2018 – current
AIT Lab is headed by Prof. Otmar Hilliges
Funded through personal ETH Zurich Postdoctoral Fellowship ($229K for 2 years)

Education

Doktor der Ingenieurwissenschaften (Dr.-Ing.) at Technische Universität Berlin
Computer Graphics Group
Berlin, Germany, 11/2014 – 09/2018
Advisor: Prof. Marc Alexa
PhD thesis: Bridging the Virtual World and the Physical World with Optically Dynamic Interfaces
Thesis committee: Prof. Marc Alexa, Prof. Ravin Balakrishnan, Prof. Jörg Müller, Prof. Olaf Hellwich
Graduated with distinction (summa cum laude)
(*) Doctoral degree is comparable to PhD in Anglo-American educational system

PhD candidate | Teaching and Research Assistant at Technische Universität Berlin
Mobile and Physical Interaction Group
Berlin, Germany, 01/2014 – 11/2014
Advisor: Prof. Jörg Müller (now Bayreuth University, Germany)

PhD candidate | Teaching and Research Assistant at University of Applied Sciences Upper Austria
Media Interaction Lab
Hagenberg, Austria, 11/2012 – 12/2013
Advisor: Prof. Michael Haller

Master of Science at University of Applied Sciences Upper Austria, Campus Hagenberg
Program: Interactive Media
Hagenberg, Austria, 10/2010 – 08/2012,
Master's thesis: *Perceptual Grouping of Digital Sketches.* Advised by Prof. Michael Haller
Graduated with high distinction.

Term abroad at University of Waterloo
Waterloo, Ontario, Canada, 05/2012 – 10/2012
Advisors: Prof. Mark Hancock, Prof. Stacey Scott

Bachelor of Science at University of Applied Sciences Upper Austria, Campus Hagenberg
Program: Media Technology and Design
Hagenberg, Austria, 10/2006 – 08/2009,
Bachelor's thesis: *The OpenSocial API.* Advised by FH-Prof. DI Rimbert Rudisch-Sommer
Graduated with distinction

Publications

Conference papers (fully refereed)
Top-tier venues in Human-Computer Interaction are ACM CHI and ACM UIST (acceptance rate 20-25%)

[C.13] *Remixed Reality: Manipulating Space and Time in Augmented Reality.*
D. Lindlbauer, A. Wilson
CHI 2018, Montreal, QC, Canada

[C.12] *HeatSpace: Automatic Placement of Displays by Empirical Analysis of User Behavior.*
A. Fender, **D. Lindlbauer**, P. Herholz, M. Alexa, J. Müller
UIST 2017, Quebec, QC, Canada

[C.11] *Changing the Appearance of Real-World Objects by Modifying Their Surroundings*
D. Lindlbauer, J. Müller, M. Alexa
CHI 2017, Denver, CO, USA.

[C.10] *Changing the Appearance of Physical Interfaces Through Controlled Transparency.*
D. Lindlbauer, J. Müller, M. Alexa
UIST 2016, Tokyo, Japan.

[C.9] *Combining Shape-Changing Interfaces and Spatial Augmented Reality Enables Extended Object Appearance.*
D. Lindlbauer, J.E. Grønbæk, M. Birk, K. Halskov, M. Alexa, J. Müller
CHI 2016, San Jose, CA, USA.

[C.8] *Influence of Display Transparency on Background Awareness and Task Performance.*
D. Lindlbauer, K. Lilija, R. Walter, J. Müller
CHI 2016, San Jose, CA, USA. **Best Paper Honorable Mention Award**

[C.7] *GelTouch: Localized Tactile Feedback Through Thin, Programmable Gel.*
V. Miruchna, R. Walter, **D. Lindlbauer,** M. Lehmann, R. von Klitzing, J. Müller
UIST 2015, Charlotte, North Carolina, USA. **Best Paper Honorable Mention Award**

[C.6] *Creature Teacher: A Performance-Based Animation System for Creating Cyclic Movements.*
A. Fender, J. Müller, **D. Lindlbauer**
SUI 2015, Los Angeles, California, USA.

[C.5] *Analyzing Visual Attention During Whole Body Interaction with Public Displays.*
R. Walter, A. Bulling, **D. Lindlbauer**, M. Schuessler, J. Müller
UBICOMP 2015, Osaka, Japan. Short paper.

[C.4] *Tracs: Transparency Control for See-through Displays.*
D. Lindlbauer, T. Aoki, R. Walter, A. Höchtl, Y. UEMA, M. Haller, M. Inami, J. Müller.
UIST 2014, Honolulu, Hawaii, USA.

[C.3] *A Chair as Ubiquitous Input Device: Exploring Semaphoric Chair Gestures for Focused and Peripheral Interaction.*
K. Probst, **D. Lindlbauer,** M. Haller, B. Schwartz, A. Schrempf.
CHI 2014, Toronto, Canada.

[C.2] *Perceptual Grouping: Selection Assistance for Digital Sketching.*
D. Lindlbauer, M. Haller, M. Hancock, S. D. Scott, W. Stuerzlinger.
ITS 2013, St. Andrews, Scotland.

[C.1] *Exploring the Use of Distributed Multiple Monitors Within an Activity-Promoting Sit-and-Stand Office Workspace.*
K. Probst, **D. Lindlbauer**, F. Perteneder, M. Haller, B. Schwartz, A. Schrempf.
Interact 2013, Cape Town, South Africa.

Journal articles

[J.1] *Measuring Visual Salience of 3D Printed Objects.*
X. Wang, **D. Lindlbauer**, C. Lessig, M. Maertens, M. Alexa
IEEE Computer Graphics and Applications 36/4. Special Issue on Quality Assessment and Perception in Computer Graphics, 2016.

Book chapters

[B.2]   *Accuracy of Monocular Gaze Tracking on 3D Geometry.*
X. Wang, **D. Lindlbauer**, C. Lessig, M. Alexa
In *Eye Tracking and Visualization*. Foundations, Techniques, and Applications. ETVIS 2015
Springer International Publishing 2017. M. Burch, L. Chuang, B. Fisher, A. Schmidt and D.
Weiskopf (Eds.), ISBN 978-3-319-47023-8

[B.1]   *Beyond Prototyping.*
J. Ängeslevä, I. Nicenboim, J. Wunderling, **D. Lindlbauer**
In *Rethink! Prototyping*. Springer International Publishing 2016.
C. Gengnagel, E. Nagy, R. Stark (Eds.), ISBN 978-3-319-24439-6

Other publications

[EA.3]   *Optically Dynamic Interfaces.*
D. Lindlbauer
UIST 2017 Adjunct (Doctoral Symposium). Quebec City, QC, Canada.

[EA.2]   *A Collaborative See-through Display Supporting On-demand Privacy.*
D. Lindlbauer, T. Aoki, A. Höchtl, Y. UEMA, M. Haller, M. Inami, J. Müller
Siggraph 2014 Emerging Technologies, Vancouver, BC, Canada.

[EA.1]   *Rotating, Tilting, Bouncing: Using an Interactive Chair to Promote Activity in Office Environments.*
K. Probst, **D. Lindlbauer**, P. Greindl, M. Trapp, M. Haller, B. Schwartz, A. Schrempf
CHI 2013 Extended Abstracts, Paris, France.

[W.2]   *Accuracy of Monocular Gaze Tracking on 3D Geometry.*
X. Wang, **D. Lindlbauer**, C. Lessig, M. Alexa
Workshop on Eye Tracking and Visualization (ETVIS) co-located with IEEE VIS 2015.

[W.1]   *Exploring the Potential of Peripheral Interaction through Smart Furniture.*
K. Probst, **D. Lindlbauer**, M. Haller, B. Schwartz, A. Schrempf
Workshop on Peripheral Interaction at CHI 2014, Toronto, Canada.

[TR.1]   *Understanding Mid-Air Hand Gestures: A Study of Human Preferences in Usage of Gesture Types for HCI.* R. Aigner, D. Wigdor, H. Benko, M. Haller, **D. Lindlbauer**, A. Ion, S. Zhao, and J.T.K.V. Koh
Microsoft Tech Report MSR-TR-2012-11, Redmond, WA, USA.

Demonstrations & exhibits

[D.7]   *ad infinitum: a parasite that lives off human energy.* Ars Electronica 2017.

[D.6]   *Changing the Appearance of Real-World Objects by Modifying Their Surroundings*, CHI 2017.

[D.5]   *Changing the Appearance of Physical Interfaces Through Controlled Transparency*, CeBit 2017.

[D.4]   *ad infinitum: a parasite that lives off human energy.* Science Gallery Dublin 2017.

[D.3]   *Changing the Appearance of Physical Interfaces Through Controlled Transparency*, UIST 2016.

[D.2]   *Tracs: Transparency Control for See-through Displays*, UIST 2014.

[D.1]   *A Collaborative See-through Display Supporting On-demand Privacy*, SIGGRAPH 2014.

Theses

Bridging the Virtual World and the Physical World with Optically Dynamic Interfaces
2018, PhD thesis, Technische Universität Berlin

Perceptual Grouping of Digital Sketches.
2012, Master's thesis, University of Applied Sciences Upper Austria, Hagenberg.

The OpenSocial API.
2009, Bachelor's thesis, University of Applied Sciences Upper Austria, Hagenberg

Grants

ETH Zurich Postdoctoral Fellowships (2018, Principal investigator)   CHF 229,600 / $229,068
A Computational Framework for Increasing the Usability of Augmented Reality and Virtual Reality

Shapeways Educational Grant (2015, Contributor) $1,000
Exploring Visual Saliency of 3D Objects

Performance scholarship (2011, Awardee)   *€725 / $850*
One of twelve awardees for scholarship by FH Hagenberg (Leistungsstipendium)

Awards & recognitions

Best Paper Honorable Mention Award CHI 2016
Influence of Display Transparency on Background Awareness and Task Performance.

Best Paper Honorable Mention Award UIST 2015
GelTouch: Localized Tactile Feedback Through Thin, Programmable Gel.

Special recognitions for reviewing:
UIST 2014, 2 x CHI 2016, UIST 2016, CHI 2017, UIST 2017, CHI 2018

Research internships

Microsoft Research
Perception and Interaction Group. Supervised by Andy Wilson.
Redmond, WA, USA, 06/2017 – 09/2017

Professional experience

iOS developer [part time]
Interactive Pioneers (former Powerflasher)
Aachen, Germany, 09/2010 – 02/2012

Software / iOS developer [full time]
Interactive Pioneers (formerly Powerflasher)
Aachen, Germany, 10/2009 – 09/2010

Software developer [internship]
Interactive Pioneers (formerly Powerflasher)
Aachen, Germany, 03/2009 – 09/2009
Developer for WPF and Silverlight. Involved in concept & technical planning.

Web developer [internship]
Lomographic Society Vienna
Vienna, Austria, 08/2008 – 09/2008

Screen designer [internship]
Monte Video & Point advertising agency
Linz, Austria, 08/2001 – 09/2001

Professional activity

Program committee

Program committee member for CHI 2019

Program committee member for UIST 2018

Program committee member for ISS 2017

Organizing committee

SIGCHI Operations committee (since 02/2016)

Student innovation contest co-chair for UIST 2019

Student innovation contest co-chair for UIST 2018

Student volunteers co-chair for UIST 2016

Poster chair for PerDis 2016

Video capture chair for CHI 2016 - 2020

Video capture chair for UIST 2015, UIST 2018

Reviewing

2018 CHI, ISS, TEI, IEEE VR, TOCHI

2017 CHI, UIST, ICMI, IMWUT (Ubicomp), MobileHCI, DIS, DESFORM

2016 CHI, UIST, ISS, ICMI, SUI, AH, IJHCI

2015 CHI, ICMI, ITS, SUI, PerDis, PERCOMP Journal

2014 CHI, UIST, ICMI, NordiCHI, SUI

Student volunteering

ITS 2014, UIST 2014, CHI 2015

Teaching

Teaching assistant

Includes organization of courses, teaching and presentation of exercises, and correction of homework and exams

Winter term 2018, Human-computer interaction, ETH Zurich

Summer term 2018, Computer Graphics 2, TU Berlin

Winter term 2016 / 2017, Computer Graphics 1, TU Berlin

Winter and summer term 2015 / 2016 / 2017 / 2018, Computer Graphics project & seminar, TU Berlin

Winter term 2013, Computer Graphics 2, University of Applied Sciences Hagenberg

Student teaching assistant

Correction of homework and exams

Winter term 2011, Digital Imaging, University of Applied Sciences Hagenberg

Summer term 2011, Hypermedia programming, University of Applied Sciences Hagenberg

Summer term 2010, Computer Graphics (OpenGL), University of Applied Sciences Hagenberg

Co-supervised Bachelor's theses and Master's theses

Tobias Bernard, 2017, *Design and Evaluation of Spatial Interfaces in Virtual Reality*.

Leonardo Hahn, 2017, *Hiding Objects by Creating Camouflage Surroundings*.

Patrick Engelhard, 2016. *3D Modeling using Sparse Sensor Data*.

Klemen Lilija, 2015. *Interaction with Transparent Displays*.

Viktor Miruchna, 2015. *Exploring the Potential Usage of Hydrogels for Tactile Feedback Systems*.

Andreas Fender, 2014. *Design and Implementation of a Performance Based Animation System for Prototyping Non-Humanoid Character Movements*.

Eva-Maria Grossauer, 2013. *Supporting Seamless Integration of Handwritten Casual Notes in Digital Tools Through Semantic Classification*.

Invited Talks

2018/05/22   Interact Lab – University of Sussex. Hosted by Diego Martinez.
2018/03/02   IST Austria. Hosted by Bernd Bickel.
2018/02/21   DGP – University of Toronto. Hosted by Seongkook Heo.
2017/12/15   ETH Zurich. Hosted by Otmar Hilliges.
2017/12/14   Disney Research Zurich. Hosted by Anselm Grundhöfer.
2017/12/12   INRIA Bordeaux. Hosted by Martin Hachet.
2017/10/05   Aarhus University.

Selected press

MSPowerUser. Microsoft aims to Remix Reality with new VR technology. 2018

Virtual Reality Summit. *Microsoft Research Demoing New Remixed Reality Technology*. 2018

VRRoom. *Remixed Reality Manipulates Space & Time In AR*. 2018

Shiropen (Japan). *Remixed Reality*. 2018

Fast Co.Design. *It's Alarmingly Easy For Machines To Control Us*. 2017.

Fast Co.Design. *An Invisibility Cloak for Distracting Gadgets*. 2016.

Vice Motherboard. *Origami-Like' Objects Can Instantly Change Their Transparency*. 2016.

Futurism. *Controlled Transparency Is The Chameleon of Technology*. 2016.

MIT Technology Review. *Make Your Own Buttons with a Gel Touch Screen*. 2015.

Wired Germany. *Berliner Forscher haben einen Weg gefunden, Touchscreens temporäre Tasten zu verpassen*. 2015.

El País. *Teclas en relieve que aparecen y desaparecen de la pantalla del móvil*. 2015.

Engadget. *Gel-filled touchscreen creates real buttons on demand*. 2015.

Gizmodo. *7 Experimental Interfaces That Show the Future of UI Design*. 2014.