

# Michael Wessely

Tenure-Track Assistant Professor  
Aarhus University, Department of Computer Science  
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## Employment

- Since Oct. 2022 **Aarhus University, Denmark**  
Tenure-Track Assistant Professor, Department of Computer Science
- Jan. 2019 – Sept. 2022 **MIT CSAIL, USA**  
Postdoctoral Associate, Electrical Engineering and Computer Science  
Advisor: **Prof. Stefanie Mueller**

## Education

- Nov. 2015 – Dec. 2018 **Inria, Université Paris-Saclay, France**  
PhD in Computer Science  
Advisor: **Prof. Theophanis Tsandilas, Prof. Wendy Mackay**  
Topic: Fabricating Malleable Interaction-Aware Materials
- Nov. 2012 – Apr. 2015 **Saarland University, Germany**  
M.Sc in Visual Computing and Computer Science  
Advisor: **Dr. Simon Olberding, Prof. Juergen Steimle**  
Topic: Fabricating Highly Customizable Thin Film Touch Displays

## Research Internships

- Jun. 2017 **UC Berkeley, USA**  
Advisor: **Prof. Eric Paulos**  
Topic: 3D printing interactive materials
- Jan. 2015 – Oct. 2015 **Max Planck Institute and Saarland University, Germany**  
Advisor: **Prof. Piotr Didyk**  
Topic: Computation and fabrication of a directional screens
- Mar. 2015 – Apr. 2015 **Max Planck Institute and Saarland University, Germany**  
Advisor: **Prof. Juergen Steimle**  
Topic: Foldable printed electronics

## Publications

ACM CHI and ACM UIST are the top venues in Human-Computer Interaction.

- [P14] Donghyeon Ko, Yoonji Kim, Junyi Zhu, Michael Wessely, Stefanie Mueller.  
FlexBoard: A Flexible Breadboard for Interaction Prototyping on Curved and Deformable Surfaces  
In *Proceedings of ACM Conference on Human Factors in Computing Systems (CHI'23)*, 11 pages.
- [P13] Marwa AlAlawi, Noah Pacik-Nelson, Junyi Zhu, Ben Greenspan, Andrew Doan, Brandon Wong, Benjamin Owen-Block, Shanti Mickens, Wilhelm Schoeman, Michael Wessely, Andreea Danielescu, Stefanie Mueller.  
MechSense: A Design and Fabrication Pipeline for Integrating Rotary Encoders into 3D Printed Mechanisms  
In *Proceedings of ACM Conference on Human Factors in Computing Systems (CHI'23)*, 13 pages.
- [P12] Yoonji Kim, Junyi Zhu, Mihir Trivedi, Dishita G. Turakhia, Ngai Hang Wu, Donghyeon Ko, **Michael Wessely**, Stefanie Mueller.  
SensorViz: Visualizing Sensor Data Across Different Stages of Prototyping Interactive Objects  
In *Proceedings of ACM Designing Interactive Systems (DIS'22)*, 13 pages.
- [P11] Jiani Zeng, Honghao Deng, Yunyi Zhu, **Michael Wessely**, Axel Kilian, Stefanie Mueller.  
LenticleObject: 3D Printed Objects with Lenticular Lens Surfaces that Can Change their Appearance Depending on the Viewpoint  
In *Proceedings of ACM Symposium on User Interface Software and Technology (UIST'21)*, 19 pages.
- [P10] **Michael Wessely**, Yuhua Jin, Cattalyya Nuengsigkapiyan, Aleksei Kashapov, Isabel Qamar, Dzimitry Tsetserukou, Stefanie Mueller.  
ChromoUpdate: Fast Design Iterations of Photochromic Color Textures Using Grayscale Previews and Local Color Updates

- In *Proceedings of ACM Conference on Human Factors in Computing Systems (CHI'21)*, 18 pages.
- [P9] Junyi Zhu, Yunyi Zhu, Jiaming Cui, Leon Cheng, Jackson C Snowden, Mark Chounlakone, **Michael Wessely**, Stefanie Mueller.  
MorphSensor: A 3D Electronic Design Tool for Reforming Sensor Modules.  
In *Proceedings of ACM Symposium on User Interface Software and Technology (UIST'20)*, 11 pages.
- [P8] **Michael Wessely**, Ticha Sethapakdi, Carlos Castillo, Jackson C Snowden, Ollie Hanton, Isabel Qamar, Mike Fraser, Anne Roudaut, Stefanie Mueller.  
Sprayable User Interfaces: Prototyping Large-Scale Interactive Surfaces with Sensors and Displays.  
In *Proceedings of ACM Conference on Human Factors in Computing Systems (CHI'20)*, 10 pages.
- [P7]  Ollie Hanton, **Michael Wessely**, Stefanie Mueller, Mike Fraser, Anne Roudaut  
ProtoSpray: Combining 3D Printing and Spraying to Create Objects with Interactive Displays.  
In *Proceedings of ACM Conference on Human Factors in Computing Systems (CHI'20)*, 10 pages.  
**Best Paper Honorable Mention Award (top 5% of submissions)**
- [P6]  Yuhua Jin\*, Isabel Qamar\*, **Michael Wessely\***, Aradhana Adhikari, Katarina Bulovic, Parinya Punpongsonan, Stefanie Mueller [**\*shared first authorship**].  
Photo-Chromeleon: Re-Programmable Multi-Color Textures Using Photochromic Dyes.  
In *Proceedings of ACM Symposium on User Interface Software and Technology (UIST'19)*, 11 pages.  
**Best Paper Award (top 1% of submissions), Best Talk Award**
- [P5] **Michael Wessely**, Theophanis Tsandilas, and Wendy E. Mackay.  
Shape-Aware Material: Interactive Fabrication with ShapeMe.  
In *Proceedings of ACM Symposium on User Interface Software and Technology (UIST'18)*, 10 pages.
- [P4] Michal Piovarči, **Michael Wessely**, Michał Jagielski, Marc Alexa, Wojciech Matusik, and Piotr Didyk.  
Design and Analysis of Directional Front Projection Screens.  
In *Journal 'Computers and Graphics'*, 2018, 12 pages.
- [P3] Michal Piovarči, **Michael Wessely**, Michał Jagielski, Marc Alexa, Wojciech Matusik, and Piotr Didyk.  
Directional Screens.  
In *Proceedings of ACM Symposium on Computation Fabrication (SCF'17)*, 10 pages.
- [P2] **Michael Wessely**, Theophanis Tsandilas, and Wendy E. Mackay.  
Stretchis: Fabricating Highly Stretchable User Interfaces.  
In *Proceedings of ACM Symposium on User Interface Software and Technology (UIST'16)*, 2016, 7 pages.
- [P1]  Simon Oberding, **Michael Wessely**, Jürgen Steimle.  
PrintScreen: Fabricating Highly Customizable Thin-Film Touch-Displays.  
In *Proceedings of ACM Symposium on User Interface Software and Technology (UIST'14)*, 2014, 10 pages.  
**Best Paper Award (top 1% of submissions)**

## Non-Peer-Reviewed or Juried Publications

- [NP5] Isabel P. S. Qamar, Sabina W.Chen, Dimitri Tskhovrebadze, Paolo Boni, **Michael Wessely**, Stefanie Mueller.  
ChromoPrint: A Multi-Color 3D Printer Based on Reprogrammable Photochromic Resin  
In Adjunct Proceedings of CHI 2022 *Late Breaking Work*
- [NP4] Faraz Faruqi, Kenneth Friedman, Leon Cheng, Michael Wessely, Sriram Subramanian, Stefanie Mueller.  
SliceHub: Augmenting Shared 3D Model Repositories with Slicing Results for 3D Printing  
arXiv:2109.14722
- [NP3] Yuhua Jin, Isabel Qamar, Michael Wessely, Stefanie Mueller.  
Photo-Chromeleon: Re-Programmable Multi-Color Textures Using Photochromic Dyes.  
In ACM SIGGRAPH 2020 Emerging Technologies (SIGGRAPH '20).
- [NP2] Jingy Li, Michael Wessely, Sean Follmer, Stefanie Mueller.  
Summer School for Computational Fabrication and Smart Matter.  
IEEE Pervasive Computing 2017.
- [NP1] Simon Olberding, Juergen Steimle, Michael Wessely.  
Digital Fabrication of flexible Touch-Displays.  
Mensch&Computer Workshopband 2014.

## Demonstrations

... of physical prototypes during hands-on sessions

- [D12] FlexBoard: A Flexible Breadboard for Interaction Prototyping on Curved and Deformable Surfaces  
ACM CHI 2023
- [D11] LenticleObject: 3D Printed Objects with Lenticular Lens Surfaces that Can Change their Appearance Depending on the Viewpoint  
ACM UIST 2021
- [D10] MorphSensor: A 3D Electronic Design Tool for Reforming Sensor Modules  
ACM UIST 2020
- [D9] ProtoSpray: Combining 3D Printing and Spraying to Create Objects with Interactive Displays  
ACM CHI 2020
- [D7] Photo-Chromeleon: Re-Programmable Multi-ColorTextures Using Photochromic Dyes  
ACM UIST 2019
- [D6] Interactive Tangrami: Rapid Protoyping with Modular Paper-folded Electronics  
ACM UIST 2018
- [D5] Shape-Aware Material: Interactive Fabrication with ShapeMe  
ACM UIST 2018
- [D4] Stretchis: Fabricating Highly Stretchable User Interfaces  
ACM SCF 2017
- [D3] Stretchis: Fabricating Highly Stretchable User Interfaces  
ACM UIST 2016
- [D2] PrintScreen: Fabricating Highly Customizable Thin-Film Touch-Displays  
ACM Symposium on Pervasive Displays 2015
- [D1] PrintScreen: Fabricating Highly Customizable Thin-Film Touch-Displays  
CeBIT 2015, One-week exhibition

## Awards

- 2020 **Best Paper Honorable Mention** for ProtoSpray [7] at CHI '20
- 2019 **Best Talk Award** for Photo-Chromeleon [6] at UIST '19
- 2019 **Best Paper Award** for Photo-Chromeleon [6] at UIST '19
- 2014 **Best Paper Award** for PrintScreen [1] at UIST '14

## Conference Service

- Program Committee ACM UIST'20,'21,'22  
ACM CHI'20,'22
- Organizing Committee ACM UIST'22: Demo Chair  
ACM UIST '21: Social Events Chair  
ACM UIST('18,'19): Publicity Chair
- Session Chair ACM UIST'20,'21
- Reviewing ACM CHI ('17 - '22)  
(82 total) ACM UIST ('17 - '21)  
ACM TEI ('18 - '20)  
ACM DIS'19,'21  
ACM NordiCHI'18  
ACM SUI'18  
ACM SIGGRAPH ASIA'18  
ACM SIGGRAPH'21
- Student Volunteer ACM UIST ('17,'18)

## Funding

4,000,000 kr.	Novo Nordisk Starter Grant	2022
\$130,000	MIT Accenture Initiative (Tools for Designing with Smart Materials)	2021
\$120,000	MIT Accenture Initiative (Soft Connectors for E-Textiles)	2021
\$300,000	MIT-Ford Initiative (Re-Programmable Multi-Color Textures using Photochromic Dyes)	2019
8000€	STIC Grant: Augmented Reality for Collaborative Physical Modeling and Design	2018

## Invited Talks

2022	Indiana University
2022	Aarhus University
2022	Aalto University
2021	22 <sup>nd</sup> Advanced Imaging International Festival, South Korea
2021	University of Chicago, Host: Prof. Pedro Lopes
2021	TU Dresden, Host: Prof. Ercan Altinsoy
2021	Stanford University, Host: Prof. Sean Follmer
2021	Carnegie Mellon University, Host: Prof. Alexandra Ion
2021	IST Austria, Host: Prof. Bernd Bickel
2021	ETH Zurich, Host: Prof. Matthias Kohler & Prof. Fabio Gramazio
2021	Functional Fabrics, MIT and AFFOA
2020	ACM ISS'20
2020	EmTech, MIT Technology Review
2020	ACM SIGGRAPH, Emerging Technologies
2019	Harvard University, Host: Prof Robert D. Howe
2019	MIT Nano Symposium
2018	Fab14, Science and Research Panel "Fab" is the major conference of the maker community

## Workshops

2018	Workshop on Print Technologies with Interactive Materials Ruhr-West University, Germany
2018	Workshop on Rapid Prototyping with Interactive Materials Fab14, Toulouse, France
2015	Inventor's Workshop on Printed Electronics, Saarland University, Germany

## Teaching

2021/ 2020	<b>Engineering Interactive Technologies</b> , MIT CSAIL Co-Lecturer with Prof. Stefanie Mueller & Course Developer ca. 30 students (undergrad)
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*The lecture covers practical and theoretical foundations of engineering interactive technologies. I developed practical labs that cover cutting edge fabrication technologies around printed electronics. The lectures introduce engineering related topics in HCI like sensing technologies, haptics, brain-computer interfaces, AR/VR, wearables, and tangibles.*

*Personal Rating from Students: 6.3 / 7*

2017 **Digital Fabrication**, Université Paris-Sud  
Co-Lecturer with Prof. Sarah Fdili  
ca. 25 students (undergrad)

*This course gives an introduction to prototyping techniques like 3D printing, laser cutting, soldering, and engineering interactive objects with an Arduino and breadboards.*

2017 **Computer Graphics**, Ecole Polytechnique Paris-Saclay  
Teaching Assistant with Prof. Tobias Isenberg  
ca. 40 students (undergrad)

*Covers fundamentals in computer graphics and OpenGL programming. I developed the programming labs and introduced a rendering competition at the end of the course.*

## Mentoring

2021 Marwa AlAlawi, PhD student (paper in preparation)  
Faraz Faruqi, PhD student (advised paper: SliceHub [NP4])

2020 Diego Pinochet, PhD student  
Junyi Zhu, PhD student (advised paper: MorphSensor [P9])  
Yunyi Zhu, PhD student (advised paper: LenticleObjects [P11])  
Paolo Boni, undergrad (advised paper: ChromoPrint [NP5])  
Sabina Chen, master's thesis, (advised paper: ChromoPrint [NP5])  
Daniela Zaidenberg, undergrad

2019 Aradhana Adhikari, undergrad (advised paper: Photo-Chromeleon [P7]), **Best Undergrad Research Award**  
Jackson Snowden, undergrad (advised paper: Sprayable User Interfaces [P9])  
Carlos Lozada, master's thesis (advised paper: Sprayable UIs [P9]), **Best Undergrad Research Award**  
Cattalya Neungsigkapijan, master's thesis (advised paper: ChromoUpdate [P10])  
Aleksy Kashapov, undergrad (advised paper: ChromoUpdate [P10])

2016 Niels Mourette, master thesis, (advised paper: Stretchis [P2])

## Selected Press

2021 **MIT News**. With a zapp of light, system switches objects' colors and patterns  
2021 **New Atlas**. MIT tech allows a single object to be "tried out" in different colors.  
2020 **ACM Tech News**. Integrating Electronics Onto Physical Prototypes.  
2020 **MIT News**. 3D-printed CurveBoards enable easier testing of circuit design on products.  
2020 **Engadget**. MIT project turns spray paint into a functional user interfaces.  
2020 **MIT News**. Sprayable User Interfaces.  
2019 **BBC**. Colour-changing ink allows objects to swap design.  
2019 **MIT News**. Objects can now change colors like a chameleon.  
2019 **Business Insider**. Scientists have invented an unbelievable 'reprogrammable' ink.  
2019 **Fast Company**. MIT's new color-changing ink lets you customize your stuff.  
2014 **Heise**. Displays aus dem Laserdrucker.  
2014 **Engineering**. Printable, Interactive Displays on their way to the market.