Michael Wessely

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Employment

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.

[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'21)*, 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 Nuengsigkapian, 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 Punpongsanon, 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

[NP6] 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 *Late Breaking Work, CHI'22*

[NP5] Faraz Faruqi, Kenneth Friedman, Leon Cheng, **Michael Wessely**, Sriram Subramanian, Stefanie Mueller.
SliceHub: Augmenting Shared 3D Model Repositories with Slicing Results for 3D Printing
In *Late Breaking Work, CHI'22*

[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

[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 (82 total)	ACM CHI ('17 - '22) 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) ACM SCF'17

Funding

$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	22nd 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 **Engineering Interactive Technologies**, MIT CSAIL
Co-Lecturer with Prof. Stefanie Mueller & Course Developer
ca. 30 students (undergrad)

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 stundents (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 (paper in preparation) Junyi Zhu, PhD student (advised paper: MorphSensor [P9]) Yunyi Zhu, PhD student (advised paper: LenticleObjects [P11]) Paolo Boni, undergrad Sabina Chen, master's thesis 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** Cattalyya Neungsigkapian, master's thesis (advised paper: ChromoUpdate [P10]) Aleksey 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.

References

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