Abdullah Muhammad - CV

Hasso Plattner Institute
Prof.-Dr.-Helmert.-Str. 2-3, 14482, Potsdam, Germany
muhammad.abdullah@hpi.de
www.muhammad-abdullah.com

Academic Affiliations

University of Sydney, Australia 2027
Incoming Lecturer (Asst. Prof. Tenure-Track) in Computer Science

Education

Hasso Plattner Institute, Germany (nationwide 1st in Computer Science) 2019-2026
Ph.D. in Computer Science / Human Computer Interaction
Advisor: Patrick Baudisch

Kyung Hee University, South Korea 2016-2018
M.S. in Computer Engineering

National University of Science and Technology (NUST), Pakistan 2008-2012
(nationwide 1st in Engineering & Technology)
B.E. in Electrical Engineering

Full papers at CHI/UIST/SCF top-tier HCI conferences with 20-25% acceptance rate

[19] Antonius Naumann, Chiao Fang, Lukas Rambold, Martin Taraz, Tom Haas, Jonas Baron, Katharina Posegga, Edgar Bennemann, Corvin Kögler, Leonard Hinrich del Federico, Julian Arnold, Gustav Ahlgrimm, Shohei Katakura, **Abdullah Muhammad**, Robert Kovacs, and Patrick Baudisch. Personal 5DOF Laser Cutting: Allows Making Clean-Looking, Load-Bearing, and Cut-In-Place Objects. **UIST26**

[18] Shohei Katakura, Chiao Fang, Lukas Rambold, Martin Taraz, Lino Hellige, Robert Kovacs, **Abdullah Muhammad**, and Patrick Baudisch. PÅCKER: Making Large Laser-Cut Objects Easy to Store and Transport. **UIST26**

[17] Lukas Rambold, Robert Kovacs, Min Deng, Antonius Naumann, Konrad Gerlach, Horatio Hamkins, Helena Lendowski, Chiao Fang, Shohei Katakura, Conrad Lempert, **Abdullah Muhammad**, and Patrick Baudisch. AirForce: Personal Fabrication of Large-Scale, Load-Bearing Animatronics Structures from a Single Tube. **CHI26**

[16] Maxine Perroni-Scharf, Jennifer Xiao, Cole Paulin, Zhi Ray Wang, Ticha Sethapakdi, **Abdullah Muhammad**, Patrick Baudisch, and Stefanie Mueller. SustainaPrint: Making the Most of Eco-Friendly Filaments. **UIST25**

[15] Shohei Katakura, Chiao Fang, Mehdi Gouasmi, Lino Hellige, Yoan Tchorenev, David Bizer, Conrad Lempert, Martin Taraz, **Abdullah Muhammad**, and Patrick Baudisch. Enabling the Assembly of Load-Bearing Laser-Cut Models. **UIST25**

[14] **Abdullah Muhammad**, Laurenz Seidel, Ben Wernicke, Mehdi Gouasmi, Anton Hackl, Thomas Kern, Conrad Lempert, Clara Lempert, David Bizer, Wieland Storch, Chiao Fang, and Patrick Baudisch. PopCore: Personal Fabrication of 3D Foamcore Models for Professional High-Quality Applications in Design and Architecture. **SCF24**

[13] Lukas Rambold, Robert Kovacs, Conrad Lempert, **Abdullah Muhammad**, Helena Lendowski, Lukas Fritzsche, Martin Taraz, and Patrick Baudisch. AirTied: Automatic Personal Fabrication of Truss Structures. **UIST23**

[12] Shohei Katakura, Martin Taraz, **Abdullah Muhammad**, Paul Methfessel, Lukas Rambold, Robert Kovacs, and Patrick Baudisch. Kerfmeter: Automatic Kerf Calibration for Laser Cutting. **CHI23**

[11] **Abdullah Muhammad**, Romeo Sommerfeld, Bjarne Sievers, Leonard Geier, Jonas Noack, Marcus Ding, Christoph Thieme, Laurenz Seidel, Lukas Fritzsche, Erik Langenhan, Oliver Adameck, Moritz Dzingel, Thomas Kern, Martin Taraz, Conrad Lempert, Shohei Katakura, Hany Mohsen Elhassany, Thijs Roumen, and Patrick Baudisch. HingeCore: Laser-Cut Foamcore for Fast Assembly. **UIST22**

[10] Keunwoo Park, Conrad Lempert, **Abdullah Muhammad**, Shohei Katakura, Jotaro Shigeyama, Thijs Roumen, and Patrick Baudisch. FoolProofJoint: Reducing Assembly Errors of Laser Cut 3D Models by Means of Custom Joint Patterns. **CHI22**

[9] **Abdullah Muhammad**, Romeo Sommerfeld, Laurenz Seidel, Jonas Noack, Ran Zhang, Thijs Roumen, and Patrick Baudisch. Roadkill: Nesting Laser-Cut Objects for Fast Assembly. **UIST21** Best Paper Honorable Mention (top 5%)

[8] Thijs Roumen, Yannis Kommana, Ingo Apel, Conrad Lempert, Markus Brand, Erik Brendel, Laurenz Seidel, Lukas Rambold, Carl Goedecken, Pascal Crenzin, Ben Hurdelhey, **Abdullah Muhammad**, and Patrick Baudisch. Assembler^3: 3D Reconstruction of Laser-Cut Models. **CHI21**

[7] **Abdullah Muhammad**, Martin Taraz, Yannis Kommana, Shohei Katakura, Robert Kovacs, Jotaro Shigeyama, Thijs Roumen, and Patrick Baudisch. FastForce: Real-Time Reinforcement of Laser-Cut Structures. **CHI21**

[6] Thijs Roumen, Ingo Apel, Jotaro Shigeyama, **Abdullah Muhammad**, and Patrick Baudisch. Kerf-canceling mechanisms: making laser-cut mechanisms operate across different laser cutters. **UIST20**

Full papers at other conferences and in journals

[5] Waseem Hassan, Ahsan Raza, **Abdullah Muhammad**, Mohammad Shadman Hashem, and Seokhee Jeon. HapWheel: Bringing In-Car Controls to Driver's Fingertips by Embedding Ubiquitous

Haptic Displays into a Steering Wheel. **IEEE Transactions on Intelligent Transportation Systems, 2022 (8.4 impact factor)**

[4] Joolekha Bibi Joolee, Ahsan Raza, **Abdullah Muhammad**, and Seokhee Jeon. Tracking of Flexible Brush Tip on Real Canvas: Silhouette-Based and Deep Ensemble Network-Based Approaches. **IEEE Access, 2020 (3.6 impact factor)**

[3] **Abdullah Muhammad**, Waseem Hassan, Ahsan Raza, and Seokhee Jeon. Haptic Logos: Insight into the feasibility of digital haptic branding. **Eurohaptics 2018**
Best Paper Honorable Mention (top 8%)

[2] **Abdullah Muhammad**, Minji Kim, Waseem Hassan, Yoshihiro Kuroda, and Seokhee Jeon. HapticDrone: An encountered-type kinesthetic haptic interface with controllable force feedback: Example of stiffness and weight rendering. **IEEE Haptics Symposium 2018**

[1] Waseem Hassan, Arsen Abdulali, **Abdullah Muhammad**, Sang Chul Ahn, and Seokhee Jeon. Towards universal haptic library: Library-based haptic texture assignment using image texture and perceptual space. **IEEE Transactions on Haptics, 2017 (2.8 impact factor)**

Awards and Honors

Research school scholarship, Hasso Plattner Institute 2019-2023
Best paper honorable mention, ACM UIST 2021
Best paper honorable mention, EuroHaptics 2018
President's scholarship, Kyung Hee University 2016-2018
Research scholarship, Haptics and Virtual Reality Lab 2016-2018

Professional Activities

Member of program committees
CHI 2027,2026 (full papers)
UIST 2026, 2024 (full papers)
DIS 2026, 2024 (full papers)
TEI 2022 (work-in-progress)

Member of organizing committees
UIST 2026,2024 Best Paper Committee
UIST 2026, 2025 Posters Chair
UIST 2024 Ask Me Anything Chair
DIS 2024 Best Paper Committee

Reviewer
ACM CHI (2021-2026)
ACM UIST (2022-2026)
ACM SCF (2023-2025)
ACM DIS (2024-2026)
IEEE Transactions on Visualization and Computer Graphics
IEEE Transactions on Haptics and other ACM and IEEE venues

Special recognitions for reviews
6x UIST, 5x CHI, 1x DIS, 1x C&C

References

Prof. Patrick Baudisch
PhD advisor
Hasso Plattner Institute
patrick.baudisch@hpi.de

Prof. Scott Hudson
Carnegie Mellon University
scott.hudson@cs.cmu.edu

Prof. Hiroshi Ishii
MIT Media Lab
tmgadmin@media.mit.edu

Prof. Takeo Igarashi
University of Tokyo
takeo@acm.org

Assoc. Prof. Andrea Bianchi
KAIST
andrea@kaist.id

Invited Talks

[18] **Max Planck Institute**, hosted by Katherine J. Kuchenbecker	31.10.2025
[17] **EPFL**, hosted by Mark Pauly	28.10.2025
[16] **University of Copenhagen**, hosted by Valkyrie Savage	22.10.2025
[15] **Aarhus University**, hosted by Michael Wessely	21.10.2025
[14] **Saarland University**, Hosted by Jürgen Steimle	25.06.2025
[13] **Adobe**, Hosted by Alexa Siu	27.05.2025
[12] **Harvard**, Hosted by Elena Glassman	21.05.2025
[11] **MIT**, Hosted by Stefanie Mueller	20.05.2025
[10] **Carnegie Mellon University**, Hosted by Scott Hudson	16.05.2025
[9] **Boston University**, Hosted by Emily Whiting	15.05.2025
[8] **University of Tokyo**, Hosted by Takeo Igarashi	25.04.2025
[7] **UC Berkeley**, Hosted by Lining Yao	23.04.2025
[6] **Purdue University**, Hosted by Liang Hee	18.04.2025
[5] **University of Chicago**, Hosted by Pedro Lopes	17.04.2025
[4] **Texas A&M**, Hosted by Jeeeun Kim	15.04.2025
[3] **Cornell Tech**, Hosted by Thijs Roumen	20.02.2025
[2] **SIGGRAPH**, The Future of Advanced User Interfaces	09.08.2023
[1] **SAP** Symposium	05.05.2022

Teaching

Created Courses (15 lectures), primary lecturer at Hasso Plattner Institute, Germany

[5] Algorithmic Folding	2025
[4] Algorithmic Folding	2024
[3] Algorithmic Folding	2023
[2] Algorithmic Folding	2022
[1] Algorithmic Folding	2021

Evaluated by students with a 1.3 grade on a scale of 5.0-1.0, where 1.0 is the best (avg over 5 years)

Teaching Assistant at Hasso Plattner Institute, Germany

[5] Robotics and Computer Vision	2025
[4] HCI Future Interactive Technology, co-lectured	2023
[3] HCI Future Interactive Technology, co-lectured	2022
[2] HCI Future Interactive Technology	2021
[1] HCI Future Interactive Technology	2020

Teaching Assistant at Kyung Hee University, South Korea

[2] Advanced HCI	2019
[1] Expert Systems	2018

Funding

Rethinking product design of 3d printed objects with recycled materials (100k)	2024-ongoing
Personalizing product design with minimal material waste (100k)	2023-2024

Mentoring

Research Intern (4 months full time)

[2] Charles Cai	2024
[1] Keunwoo Park (PhD)	2021

Master Thesis (6 months full time)

[5] Julian Arnold	2026
[4] Chiao Fang	2025
[3] Lukas Fritzsche	2023
[2] Lukas Budach	2022
[1] Laurenz Seidel	2022

Master Project Students (6 month—3 days per week)

[16] Julian Arnold	2025	[8] Jonas Embach	2024
[15] Enriketa Krriku	2025	[7] Maximilian Goetz	2024
[14] Phillip Keese	2025	[6] Bjarne Sievers	2021
[13] Johannes Poetzsch	2025	[5] Marcus Ding	2021
[12] Lino Hellige	2025	[4] Erik Langenhan	2021
[11] Chiao Fang	2024	[3] Jonas Noack	2020
[10] Julian Egbert	2024	[2] Lukas Fritzsche	2020
[9] Daphna Beljavskij	2024	[1] Oliver Adameck	2020

Research Project Students (1 days per week for a semester)

[16] Tom Hass	2025	[8] Mehdi Gouasmi	2022
[15] Thomas Lin	2025	[7] Anton Hackl	2022
[14] Tobias Goergens	2025	[6] Ben Wernicke	2021/23
[13] Enriketa Krriku	2024/25	[5] Romeo Sommerfeld	2020/21
[12] Lino Hellige	2024	[4] Leonard Geier	2021
[11] Margarete Dippel	2024	[3] Moritz Dzingel	2021
[10] Ella Rosner	2024	[2] Laurenz Seidel	2020
[9] Daphna Beljavskij	2023	[1] Martin Taraz	2019