Demonstrating Shape-Kit: A Design Toolkit for Crafting On-Body Expressive Haptics

Ran Zhou
University of Chicago
Chicago, Illinois, USA
KTH Royal Institute of Technology
Stockholm, Sweden
ranzhou@uchicago.edu

Jianru Ding
University of Chicago
Chicago, Illinois, USA
jrding@uchicago.edu

Chenfeng Gao
University of Chicago
Chicago, Illinois, USA
Northwestern University
Evanston, Illinois, USA
chenfenggao2029@u.northwestern.edu

Wanli Qian
University of Chicago
Chicago, Illinois, USA
University of Southern California
Los Angeles, California, USA
wanliqian965@gmail.com

Benjamin Erickson
University of Colorado Boulder
Boulder, Colorado, USA
benjaminerickson@me.com

Madeline Balaam
KTH Royal Institute of Technology
Stockholm, Sweden
balaam@kth.se

Daniel Leithinger
Cornell University
Ithaca, New York, USA
dl2265@cornell.edu

Ken Nakagaki
University of Chicago
Chicago, Illinois, USA
knakagaki@uchicago.edu

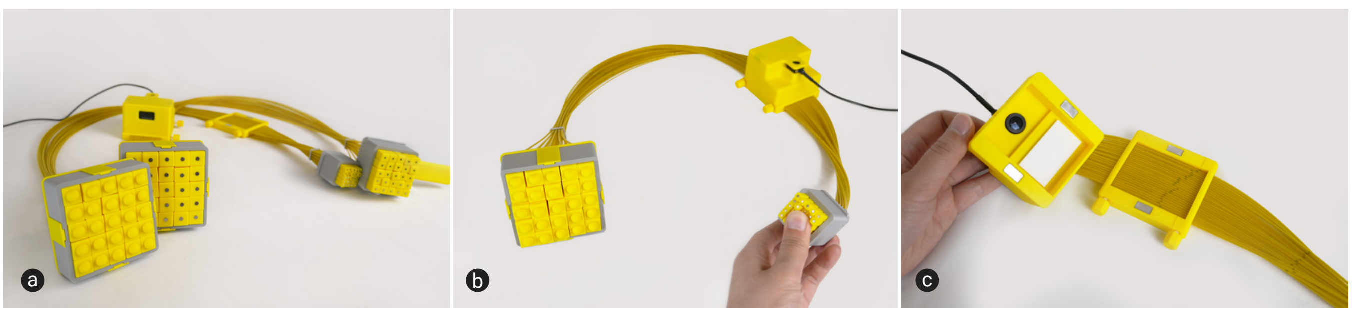

Figure 1: Shape-Kit: a hybrid haptic design toolkit for exploring crafting on-body haptics. (a) Two modules of Shape-Kit. (b) Hand behavior can be transduced to pin-based shape-change (c) Ad-hoc optical tracking module

Abstract

Driven by the vision of everyday haptics, the HCI community is advocating for "design touch first" and investigating "how to touch well." However, a gap remains between the exploratory nature of haptic design and technical reproducibility. We present Shape-Kit, a hybrid design toolkit embodying our "crafting haptics" metaphor. The Shape-Kit analog tool can transduce and amplify (or minify) human touch behaviors into dynamic pin-based haptic sensations through a flexible and long transducer, enabling free-form sensorial exploration of touch across the body. An ad-hoc tracking module captures and digitizes these patterns, while our graphical user interface includes real-time 3D visualization, recording, tuning, and playback functionalities. To showcase a full design cycle, we built a programmable shape display for tangible playback. This demonstration invites attendees to experience how the analog crafting method offers an intuitive entry point for collaborative touch prototyping while excelling at uncovering subtle nuances that shape touch quality and how touch digitization enables touch recording and playback while enhancing reflective creation.

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CCS Concepts

• **Human-centered computing** → **Haptic devices**; **Interaction design**.

Keywords

Haptic Design Toolkit, Crafting Haptics, On-body Expressive Haptics, Design Research, Passive Shape Display, Computer Vision, Soma Design, Collaborative Haptic Design, Sensorial Exploration

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1 Introduction

With the maturing of haptic technology, there is a promising vision of integrating haptic interaction into everyday life, benefiting critical areas such as healthcare, communication, education, and accessibility [8, 9, 22, 26]. Toward this vision, and given the richness of human touch perception and interpretation, the haptic community in human-computer interaction (HCI) is beginning to advocate for "design touch first" [11] and emphasizing an investigation of "how the technology can touch well" [28], moving beyond technology-dominant development. Approaches like Soma Design argue for designing haptic experiences center on the designer's first-person somatic experiences [6, 7], which requires continuous engagement with the material on the body to judge, iterate, and validate throughout a design process [1, 25]. These methods typically employ low-fidelity prototypes or static materials (e.g., fabrics) for more visceral sensorial exploration [23, 27], capturing the qualitative richness of touch but limiting reproducibility. While many computational haptic design tools enable more reproducible outcomes, the burden and constraints of technical complexity often hinder more exploratory experiences for nuances. Thus, a new design approach that bridges this gap is needed.

Despite the decades of advocacy for multi-sensory interaction, touch as a design modality remains underutilized by much of the design community [17, 19, 21]. To foster design exploration in this domain, we draw inspiration from the evolution of visual design approaches. Designers have been greatly empowered by digital drawing platforms: from pixelated and later vector drawing with a mouse (e.g., Microsoft Paint [1] and Adobe Illustrator [2]) to fluid sketching with stylus pen and tablet (e.g., Procreate on iPad[3]). However, the foundation of design education always starts with analog tools, such as drawing using paper or canvas with paintbrushes. They are approachable and friendly to novices, and despite their simplicity, these analog drawing methods offer versatile drawing features based on experts' tacit knowledge, which could achieve the creation of masterpieces. In contrast, existing haptic design platforms typically consist of hardware haptic devices and software authoring tools. Most of them involve precise parameter control through sliders, buttons, line graphs [20, 30], or timelines with dragging blocks [5, 12]. Some platforms use hand sketching on tablets, translating drawing patterns into actuation sequences [2, 14], while some employ pressure sensors to track direct touch and replay it with a haptic interface [10]. However, there is a lack of haptic design tools that enable manual, analog, and intuitive exploration, like the classical drawing on canvas with paintbrushes.

The concept of *sketching haptics* emphasizes rapid prototyping with low-fi haptic design materials, focusing on experiential touch qualities [17] and somatic appreciation [27]. While our work shares a similar motivation, we propose a design metaphor of "*crafting haptics,*" which carries two layers of meaning. First, since haptics is inherently about touch, we aim to explore the design of expressive haptic interactions directly through hand manipulation, as intuitive as clay crafting in a dynamic way. Second, we strive to investigate how designers, using approachable, analog materials, can craft with "care, skill, and ingenuity" (Merriam-Webster [16]), potentially leading to virtuoso performances in haptic design. As a first attempt, this work explores how to enable designers to "craft" dynamic pin-based force feedback that can be experienced across the body. We chose the pin display format for its potential to render versatile tactile sensations and its recognition as a standard form factor in haptic interfaces [3].

We demonstrate Shape-Kit [29], a novel hybrid haptic design toolkit that bridges the gap between exploratory design and reproducibility, embodying the "crafting haptics" metaphor. By leveraging human power and hand dexterity, the Shape-Kit analog tool can transduce and amplify (or minify) human touch behaviors into pin-based haptic sensations through a flexible and long transducer, enabling free-form sensorial exploration of touch across the body. Shape-Kit allows designers to experiment with various crafting approaches, from bare-hand manipulation to using hand-held props, similar to sculpting with clay. Textures and materials can be attached to the output end, much like paintbrushes can have different tips for dipping in various pigments. Just as paintings can be photographed and music can be recorded, we employ an ad-hoc method to capture and digitize crafted touch patterns, which could be applied to computational pin-based haptic interfaces. Our graphical user interface (GUI) includes real-time 3D visualization, recording, tuning, and playback functionalities. To showcase a full design cycle, we built a programmable shape display for tangible playback. Our *crafting haptics* method aims to foster intuitive analog touch prototyping, while the tracking method enables convenient digitization of the crafted outcomes.

2 Design of Shape-Kit

Shape-Kit [29] is a design toolkit to embody the "crafting haptics" design metaphor, facilitating the exploration of on-body expressive haptics. In this section, we present the design of the Shape-Kit toolkit, incorporating both analog and digital systems. We open source the toolkit by sharing the hardware components, 3D printing models, and software package[4].

2.1 Shape-Kit Analog System

We developed Shape-Kit (Fig. 2), featuring two passive shape displays connected by flexible Bowden cables. Specifically, we used 914mm Gold-N-Rods cables[5], which consist of a stainless steel multistrand internal cable that moves smoothly within a nylon tube. Bowden cables transmit linear motion and force to a spatially distant and extended point from the actuation side, which has been employed in tabletop shape displays [4, 13, 18]. We leveraged its flexible feature to explore the hand-held potential. This design allows the touch perception area on the body to be distanced from

[1] https://www.microsoft.com/en-us/windows/paint
[2] https://www.adobe.com/products/illustrator.html
[3] https://procreate.com/

[4] https://www.ranzhourobot.com/shapekit
[5] Sullivan Cable Type .032 Gold-N-Rods Rods 36 inch

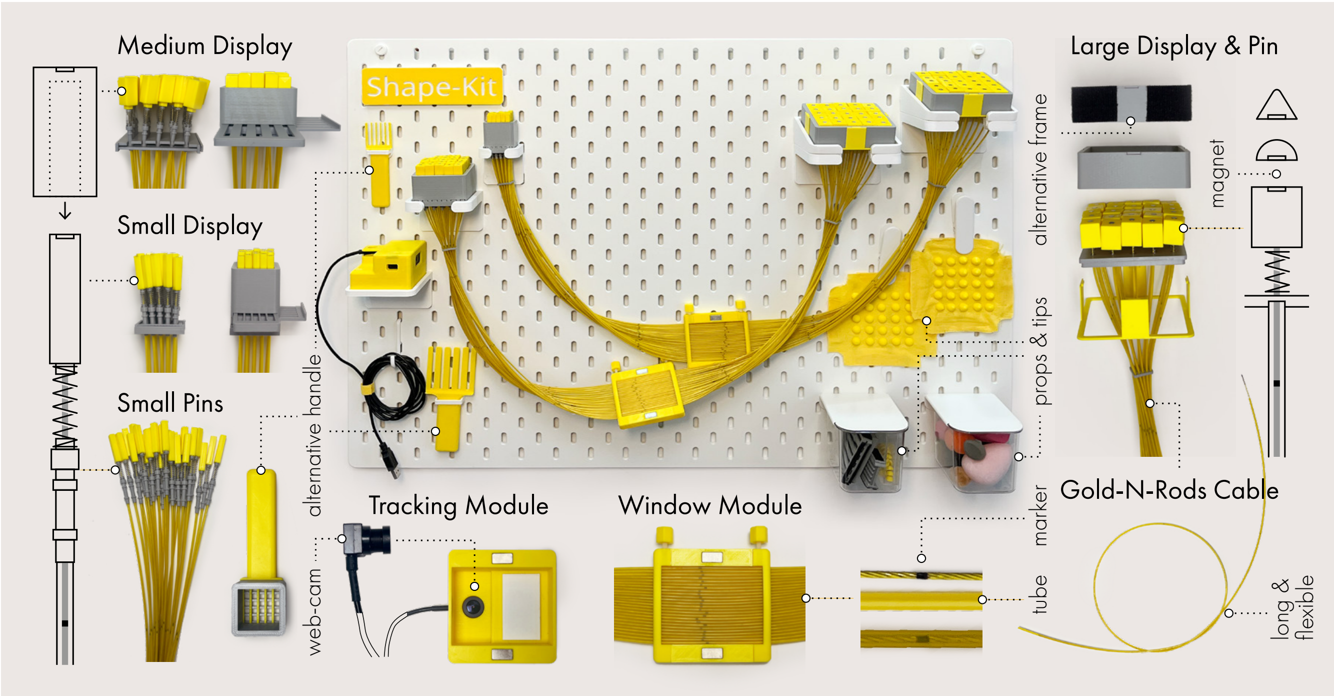

Figure 2: Shape-Kit Toolkit and its assembly

Table 1: Pin scales feature for displays in two Shape-Kit modules. Target areas are based on point localization threshold [15]

Module	Pin Display Scale	Target Area	Potential Crafting Method	Spring Scale
M1	Small Display (S) 5x5mm	Fingers, hallux, cheek	Use 1-2 fingers to actuate the entire display, creating uniform shapes amplified on the Large display	Coil diameter: 4mm; Free length: 15mm Wire diameter: 0.3mm; Revolutions: 12revs Spring constant: 0.1N/mm
M2	Medium Display (M) 10x10mm	Foot sole, calf, belly, forehead, forearm, palm	Actuate 2-3 pins with one finger for controlled patterns, or use the palm to create uniform shapes amplified on Large display	Coil diameter: 4mm; Free length: 15mm Wire diameter: 0.3mm; Revolutions: 12revs Spring constant: 0.1N/mm
M1&2	Large Display (L) 15x15mm	Back, thigh, breast, upper arm	Push individual pin or multiple pins with fingers or palm to create detailed patterns that can be minified to smaller scales	Coil diameter: 4mm; Free length: 8mm Wire diameter: 0.3mm; Revolutions: 5revs Spring constant: 0.3N/mm

the crafting hands, enabling more flexible body positioning for solo use and potentially reducing social discomfort during collaborative prototyping.

The shape displays are spring-back on both sides, enabling bi-directional crafting and rendering. We used stainless steel springs to accommodate the size and weight of the pins that required more resilient springs. The chosen springs are still soft and spongy to allow flexible actuation (Table 1). To provoke exploratory outcomes, we intentionally introduced ambiguity [8, 30] by incorporating mismatched scales between the 5x5 pin arrays on each side. The cubic-shaped pins, with minimal spacing, support fluid actuation and continuous shape rendering. Pin scales were determined based on point localization thresholds [15] while also accommodating various crafting strategies (Table 1). Shape-Kit includes two modules, both with large displays, paired with either small (M1) or medium displays (M2). They are lightweight and portable (M1: 290g, M2: 340g). By simply pressing or rubbing with hands on one side, Shape-Kit can amplify (or minify) the crafted touch signals into pin-based haptic patterns transduced through the long cables. The output display can be moved around to test on different body parts or on another person's body.

Shape-Kit is modular and reconfigurable (Fig.2), fabricated by FDM 3D printing. The small display can transform into a medium size by magnetically snapping pin caps, while the housings for the displays are also swappable. The large display can swap frames (e.g.,

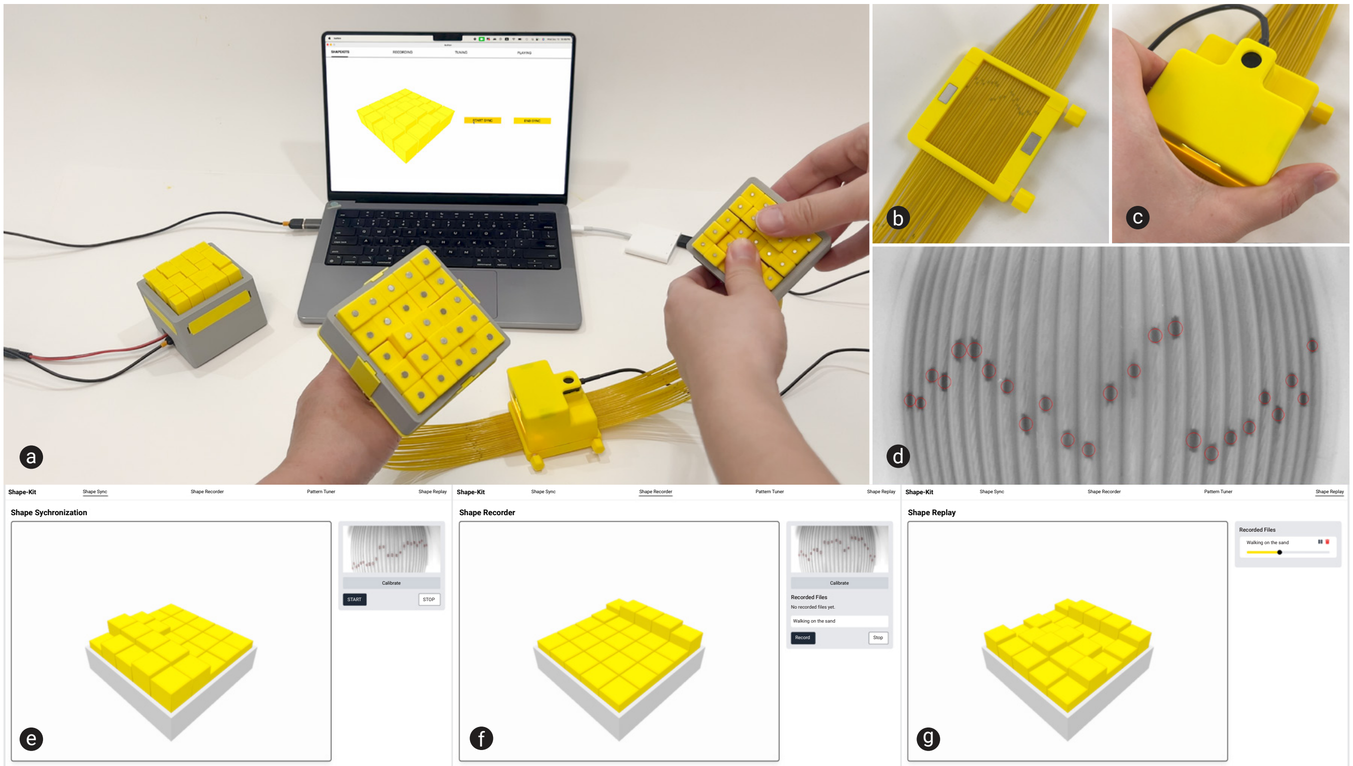

Figure 3: Tracking System and Shape-Kit GUI. (a) Synchronization on GUI (b) Window module (c) Tracking module (d) Computer vision tracking view (e) Tracking Synchronization Page (f) Pattern Recording Page (g) Pattern Playback Page

a frame attached with velcro was used in the user study), with future iterations potentially adopting the same modular approach as the smaller displays. The default pin tips are flat, but other shapes of tips can be attached via embedded magnets or flexible fabric covers. This reconfigurable feature enhances Shape-Kit's versatility as a haptic design tool.

2.2 Shape-Kit Digital System

2.2.1 Tracking System. The Shape-Kit tracking system was inspired by Skinflow [24], which used liquid transmission and optical sensors to measure pressure. Instead of dyed liquid, we leveraged Bowden cable's mechanism, where the internal cable moves within a semi-transparent tube. As the pin's actuation motion is transmitted through the cable, we applied dark markers (spaced 100mm apart) on the internal cable (Fig. 2 & 3b) to make the cable displacement more visible, enhancing precise computer vision tracking. The Bowden cables for each pin are meticulously arranged and secured in a window module, which allows clear detection of each pin's movement to map them into a data array. The window module can be moved along the cable and tightened using side knobs.

Designers can document crafted sensations by magnetically mounting the tracking module (Fig. 3c). After testing several optical sensors, we found a wide-angle webcam ideal for short-distance, low-latency tracking[6]. We also integrated a portable camera light into the module to ensure stable lighting. The weight of the tracking module, including the webcam and light, is 90g. To initiate tracking, the designer first turns on the light, connects the camera to a PC via USB and runs our custom Python script that opens a camera tracking view for calibration and detection. The vision system operates continuously to take image frames at a 30-Hz frame rate, detect the coordinates of each marker in the frame, and map them to a data array. By calibrating and calculating the relative changes in the marker coordinates, the vision system accurately tracks each pin's movement. They can then be proceeded by Shape-Kit GUI.

2.2.2 Graphic User Interface. Shape-Kit GUI used in our design study [29] was built with Processing and running on a PC, featuring a digital simulation of the shape display (Fig. 3a). The GUI accesses the Python script for tracking, allowing designers to synchronize the digital simulation with the touch patterns crafted on analog Shape-Kit in real-time. When pressing the "Start Sync" button, the software automatically calibrates the first frame as the baseline. Subsequent movements are tracked as displacement differences from this baseline and are mapped to each pin's height, which is displayed in the 3D simulation.

Designers can also digitally record and playback shape patterns, with additional controls for tuning general pin height and motion speed. We also developed a web-app version of the GUI for enhanced usability and stability (Fig. 3e-g). Both software applications' packages are open-sourced.

[6]HD 1080P USB CCTV Mini Security Camera (2.8 mm lens, 120-degree angle)

2.2.3 Programmable Shape Display. To fully demonstrate the "crafting haptics" design metaphor, we developed a programmable shape display (Fig. 4) matching the scale of the large analog Shape-Kit display (15×15mm) and weighing 330g. Each pin is actuated by a micro plastic-gear linear servo [7] and arranged in modular units for easy reconfiguration and repairs. The display is entirely 3D-printed and controlled by an Arduino Nano with two Adafruit PCA9685 16-channel servo drivers. When connected to the Shape-Kit GUI, it can playback recorded touch patterns in tangible form.

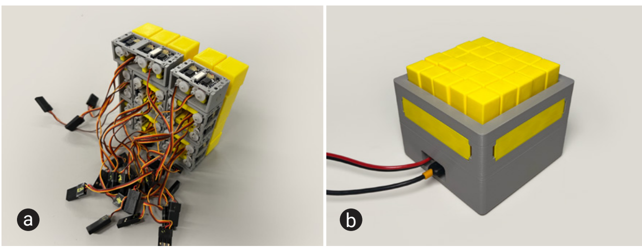

Figure 4: Servo-driven programmable shape display.

3 Conclusion

We present Shape-Kit, a hybrid haptic design toolkit that bridges the gap between exploratory design through analog touch prototyping and reproducibility through ad-hoc digitization. It embodies our "crafting haptics" design metaphor, where we envision designing expressive on-body haptics through intuitive hand-crafting, inspired by how visual design stems from paper-pen sketching. We demo Shape-Kit to showcase how it facilitated collaborative sensorial exploration and diverse crafting methods to create rich and versatile on-body expressive touch stimulations.

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References

[1] Madeline Balaam, Anna Ståhl, Guðrún Margrét Ívansdóttir, Hallbjörg Embla Sigtryggsdóttir, Kristina Höök, and Caroline Yan Zheng. 2024. Exploring the Somatic Possibilities of Shape Changing Car Seats. In *Proceedings of the 2024 ACM Designing Interactive Systems Conference* (Copenhagen, Denmark) *(DIS '24)*. Association for Computing Machinery, New York, NY, USA, 3354–3371. https://doi.org/10.1145/3643834.3661518

[2] Xi Laura Cang, Ali Israr, and Karon E MacLean. 2023. When is a haptic message like an inside joke? digitally mediated emotive communication builds on shared history. *IEEE Transactions on Affective Computing* 14, 1 (2023), 732–746.

[3] Heather Culbertson, Samuel B Schorr, and Allison M Okamura. 2018. Haptics: The present and future of artificial touch sensation. *Annual review of control, robotics, and autonomous systems* 1, 1 (2018), 385–409.

[4] Sean Follmer, Daniel Leithinger, Alex Olwal, Akimitsu Hogge, and Hiroshi Ishii. 2013. inFORM: dynamic physical affordances and constraints through shape and object actuation. In *Proceedings of the 26th Annual ACM Symposium on User Interface Software and Technology* (St. Andrews, Scotland, United Kingdom) *(UIST '13)*. Association for Computing Machinery, New York, NY, USA, 417–426. https://doi.org/10.1145/2501988.2502032

[5] Hapticlabs. 2024. Hapticlabs. https://www.hapticlabs.io/ Accessed on Sep 3, 2024.

[6] Kristina Hook. 2018. *Designing with the body: Somaesthetic interaction design*. MIt Press.

[7] Kristina Höök, Baptiste Caramiaux, Cumhur Erkut, Jodi Forlizzi, Nassrin Hajinejad, Michael Haller, Caroline CM Hummels, Katherine Isbister, Martin Jonsson, George Khut, et al. 2018. Embracing first-person perspectives in soma-based design. In *Informatics*, Vol. 5. MDPI, 8. https://doi.org/10.3390/informatics5010008

[8] Kevin Huang, Thad Starner, Ellen Do, Gil Weinberg, Daniel Kohlsdorf, Claas Ahlrichs, and Ruediger Leibrandt. 2010. Mobile music touch: mobile tactile stimulation for passive learning. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (Atlanta, Georgia, USA) *(CHI '10)*. Association for Computing Machinery, New York, NY, USA, 791–800. https://doi.org/10.1145/1753326.1753443

[9] Gijs Huisman. 2017. Social Touch Technology: A Survey of Haptic Technology for Social Touch. *EEE Trans. Haptics* 10, 3 (jul 2017), 391–408. https://doi.org/10.1109/TOH.2017.2650221

[10] Gijs Huisman, Aduen Darriba Frederiks, Betsy Van Dijk, Dirk Hevlen, and Ben Kröse. 2013. The TaSSt: Tactile sleeve for social touch. In *2013 World Haptics Conference (WHC)*. IEEE, 211–216. https://doi.org/10.1109/WHC.2013.6548410

[11] Carey Jewitt, Sara Price, Jürgen Steimle, Gijs Huisman, Lili Golmohammadi, Narges Pourjafarian, William Frier, Thomas Howard, Sima Ipakchian Askari, Michela Ornati, et al. 2021. Manifesto for digital social touch in crisis. *Frontiers in Computer Science* 3 (2021), 754050.

[12] Kevin John, Yinan Li, and Hasti Seifi. 2024. AdapTics: A Toolkit for Creative Design and Integration of Real-Time Adaptive Mid-Air Ultrasound Tactons. In *Proceedings of the CHI Conference on Human Factors in Computing Systems* (Honolulu, HI, USA) *(CHI '24)*. Association for Computing Machinery, New York, NY, USA, Article 229, 15 pages. https://doi.org/10.1145/3613904.3642090

[13] Peter Kammermeier, Martin Buss, and Günther Schmidt. 2000. Dynamic display of distributed tactile shape information by a prototypical actuator array. In *Proceedings. 2000 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2000)(Cat. No. 00CH37113)*, Vol. 2. IEEE, 1119–1124.

[14] Lawrence H. Kim and Sean Follmer. 2019. SwarmHaptics: Haptic Display with Swarm Robots. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* (Glasgow, Scotland Uk) *(CHI '19)*. Association for Computing Machinery, New York, NY, USA, 1–13. https://doi.org/10.1145/3290605.3300918

[15] Susan J Lederman and Roberta L Klatzky. 2009. Haptic perception: A tutorial. *Attention, Perception, & Psychophysics* 71, 7 (2009), 1439–1459.

[16] Merriam-Webster. 2024. Craft. https://www.merriam-webster.com/dictionary/craft

[17] Camille Moussette. 2012. *Simple haptics: Sketching perspectives for the design of haptic interactions*. Ph. D. Dissertation. Umeå Universitet.

[18] Ken Nakagaki, Yingda (Roger) Liu, Chloe Nelson-Arzuaga, and Hiroshi Ishii. 2020. TRANS-DOCK: Expanding the Interactivity of Pin-based Shape Displays by Docking Mechanical Transducers. In *Proceedings of the Fourteenth International Conference on Tangible, Embedded, and Embodied Interaction* (Sydney NSW, Australia) *(TEI '20)*. Association for Computing Machinery, New York, NY, USA, 131–142. https://doi.org/10.1145/3374920.3374933

[19] Oliver Schneider, Karon MacLean, Colin Swindells, and Kellogg Booth. 2017. Haptic experience design: What hapticians do and where they need help. *International Journal of Human-Computer Studies* 107 (2017), 5–21.

[20] Oliver S Schneider and Karon E MacLean. 2016. Studying design process and example use with Macaron, a web-based vibrotactile effect editor. In *2016 IEEE Haptics Symposium (Haptics)*. IEEE, 52–58.

[21] Hasti Seifi, Matthew Chun, Colin Gallacher, Oliver Schneider, and Karon E MacLean. 2020. How do novice hapticians design? A case study in creating haptic learning environments. *IEEE transactions on haptics* 13, 4 (2020), 791–805.

[22] Peter B Shull and Dana D Damian. 2015. Haptic wearables as sensory replacement, sensory augmentation and trainer–a review. *Journal of neuroengineering and rehabilitation* 12 (2015), 1–13. https://doi.org/10.1186/s12984-015-0055-z

[23] Marie Louise Juul Søndergaard, Ozgun Kilic Afsar, Marianela Ciolfi Felice, Nadia Campo Woytuk, and Madeline Balaam. 2020. Designing with Intimate Materials and Movements: Making "Menarche Bits". In *Proceedings of the 2020 ACM Designing Interactive Systems Conference* (Eindhoven, Netherlands) *(DIS '20)*. Association for Computing Machinery, New York, NY, USA, 587–600. https://doi.org/10.1145/3357236.3395592

[24] Gabor Soter, Martin Garrad, Andrew T Conn, Helmut Hauser, and Jonathan Rossiter. 2019. Skinflow: A soft robotic skin based on fluidic transmission. In *2019 2nd IEEE International Conference on Soft Robotics (RoboSoft)*. IEEE, 355–360.

[25] Anna Ståhl, Vasiliki Tsaknaki, and Madeline Balaam. 2021. Validity and Rigour in Soma Design-Sketching with the Soma. *ACM Trans. Comput.-Hum. Interact.* 28, 6, Article 38 (dec 2021), 36 pages. https://doi.org/10.1145/3470132

[26] Preeti Vyas, Unma Mayur Desai, Karin Yamakawa, and Karon Maclean. 2023. A Descriptive Analysis of a Formative Decade of Research in Affective Haptic System Design. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems* (Hamburg, Germany) *(CHI '23)*. Association for Computing Machinery, New York, NY, USA, Article 229, 23 pages. https://doi.org/10.1145/

[7] AGFRC 9mm coreless digital linear servo C1.5CLS-Pro

3544548.3580735

[27] Charles Windlin, Kristina Höök, and Jarmo Laaksolahti. 2022. SKETCHING SOMA BITS. In *Proceedings of the 2022 ACM Designing Interactive Systems Conference* (Virtual Event, Australia) *(DIS '22)*. Association for Computing Machinery, New York, NY, USA, 1758–1772. https://doi.org/10.1145/3532106.3533510

[28] Caroline Yan Zheng, Georgios Andrikopoulos, Mark Paterson, Nadia Berthouze, Minna Orvokki Nygren, Yoav Luft, and Madeline Balaam. 2024. Towards Robot and Technologies that Touch Well – Shaping an Experience-driven Design Paradigm. In *Companion Publication of the 2024 ACM Designing Interactive Systems Conference* (IT University of Copenhagen, Denmark) *(DIS '24 Companion)*. Association for Computing Machinery, New York, NY, USA, 409–412. https://doi.org/10.1145/3656156.3658401

[29] Ran Zhou, Jianru Ding, Chenfeng Gao, Wanli Qian, Benjamin Erickson, Madeline Balaam, Daniel Leithinger, and Ken Nakagaki. 2025. Shape-Kit: A Design Toolkit for Crafting On-Body Expressive Haptics. In *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems* (Yokohama, Japan) *(CHI '25)*. Association for Computing Machinery, New York, NY, USA. https://doi.org/10.1145/3706598.3713981

[30] Ran Zhou, Zachary Schwemler, Akshay Baweja, Harpreet Sareen, Casey Lee Hunt, and Daniel Leithinger. 2023. TactorBots: A Haptic Design Toolkit for Out-of-lab Exploration of Emotional Robotic Touch. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems* (Hamburg, Germany) *(CHI '23)*. Association for Computing Machinery, New York, NY, USA, Article 370, 19 pages. https://doi.org/10.1145/3544548.3580799