So You Think You Can't Draw? A Hands-on Introductory Course on Sketching in HCI Techniques

Makayla Lewis
University of the Arts London
London, UK
Makayla.Lewis@arts.ac.uk

Miriam Sturdee
Lancaster University
Lancaster, UK
M.Sturdee@lancaster.ac.uk

Figure 1: Visual icon dictionary *CHI' 2018* [9] (top), Sketch outputs *DIS' 2017* [12] (middle) and Sketching people demo by Miriam Sturdee (bottom).

Abstract
Hand-drawn sketching is a practice as old as our ancestors. From cave painting to picture-books, we have explored the world with our visual senses. Within Human-Computer Interaction, sketches can be used to document, ideate, and describe concepts between researcher, user, or client. Attendees will leave the course with the confidence to engage actively with sketching on an everyday basis in their research practice.

Author Keywords
Sketching, Drawing, Visual Thinking, HCI.

CSS Concepts
• Human-centered computing → Visualization → Visualization techniques.

Introduction
Sketching is a practice as old as our ancestors. From cave painting to picture-books, we have explored the world with our visual senses [3]. Now as technology develops, we are discovering ways in which the traditional visual arts can co-exist alongside the complexity of computing. Within Human Computer Interaction (HCI), this co-existence can be embodied in
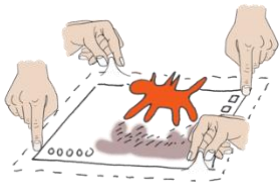
Figure 2: Hand gestures (interactions) sketch [16].

Figure 3: Participant's storyboard sketch at *NordiCHI' 2016*.

Figure 4: Sample sketching techniques (people) covered in the *CHI' 2019* sketching in HCI course [11].

ideation, design spaces, storytelling and impact and section of code [1], rapid prototyping [4], converted into digital representations [6], and input [7].

Detailed course structure
Course website:
https://sketchhci.wordpress.com/introductory-course/
Duration of course: two units, 80-minute sessions.
Course category: Methods, Hot Topic. **Audience size:** 35 (maximum to 50 participants). **Audience:** The content of this course is suitable for individuals from industry and academia that have an interest in learning and or improving their sketching skills. Novices, experts and those with an interest are welcome to attend.
Benefits: Sketching us often overlooked in many disciplines, or referred to as a 'soft' skill, however, it can support HCI researchers and practitioners to ideate, collaborate, document, and explore and discover complex themes and spaces. This hands-on introductory course intends to celebrate and promote the diverse role of sketching to all practitioners, but also to generate discussion – encouraging participants to adopt sketching in their everyday research and practice. **Prerequisites:** No prerequisites. **Course content and practical work:** Participants will be

guided through selected sketching techniques and strategies (Fig. 1 (middle) and 4). These techniques will be based on well-established sketching, interaction design and computer science material, e.g. [5], but will also include additional techniques and examples. Participants will also be encouraged to bring an idea which they feel would benefit from a sketching approach, in order to make a start on their own work and gain helpful feedback from the instructors and their peers. As a result of CHI 2018 [9] and CHI 2019 [11] Sketching in HCI course feedback, this course will consist of 7 parts and 10 hands-on activities:

1. **Warm up 'The Humble Line':** Activity #1 participants will be asked to embrace their 'younger selves' by mark-making (scribbling), its purpose is to let go of perfection.
2. **'Sketchy' ice breaker:** Activity #2 participants will be given a sticky label and asked to quickly (1 minute) sketch the person next to them then give their drawing to the person. The recipient will be asked to write their name next to the sketch, then, in turn, introduce themselves (name, institution, motivation for taking part in the course, and a fun fact about themselves). The purpose is to create a safe and friendly sketching environment.
3. **Sketch gallery:** Exemplar presentation (e.g. Fig. 2) and discussion outlining visual thinking and sketching with examples from HCI, interaction design, and computer science followed by a question and answer session to establish participants key motivations and goals of (sharing of activity #2 outputs).
4. **Visual language:** Participants will sketch-along with the instructors, following a series of best

Course history

Sketching in HCI courses at CHI 2018 [9] and CHI 2019 [11] and a special interest groups Sketching in HCI at CHI 2018 [8] and Sketching in HCI 2.0 CHI 2019 [10] has been previously given by the authors. Similar courses and workshops have been provided by the authors at: DIS 2017, NordiCHI 2016, and TReSSPASS Summer School 2016. Lewis has provided industry tuition at Design Exchange UK 2019, Agile in the City: London 2019, UX Cambridge 2018, UX in the City: Manchester 2018, UX Oxford 2017, UX Scotland 2017, UX Leeds 2017, UX Bristol 2016, UCD 2015, and TCUK 2014. Sturdee has carried out sketching in HCI related research. The CHI 2020 course will have a greater focus on developing core sketching skills and sustaining sketching in HCI on an everyday basis.

practice examples that will be live drawn and digitally projected for immediacy: Activity #3

5. shapes, connectors, and separators. Activity #4 People, gestures and actions (Fig. 1 (bottom) and 4) + Show & Tell. c) Activity #5 Scenes including buildings, place (indoors and outdoors) + Show & Tell. Activity #6 icon dictionary, participants will work together to rapidly build a visual dictionary of objects and concepts present in HCI (Fig. 1 (top) and 6). Activity #7 Typography and hand lettering, participants will explore the role of annotations and notes in sketches by hand-lettering using instructor examples (worksheets) + Show & Tell, followed by an exemplar presentation and discussion that outlines the role of colour and shading (colour theory) in sketching.

6. **Visual Storytelling:** Participants will sketch individually and collaboratively (group work): Activity #8 rapid story sketching, participants will be asked to use 'Once upon a time…' visual template, developed by the instructors, to practice quick ideation, storytelling and sketching + Show & Tell. Activity #9 interview your neighbour, participants will be asked to work in groups of 2 to 3 using image-interview techniques to visualize another person experience + Show & Tell. The purpose of these activities is to bring together learnings from parts 4 and 5.

7. **Applying Sketching in HCI:** Exemplar presentation and discussion outlining visual thinking and sketching from HCI, interaction design and computer science (e.g. Fig. 2). Activity #10 instructors and participants will produce a visual mind map exploring significance, benefits, and pitfalls of sketching in HCI and how participants

could/will apply sketching into their everyday work practice.

8. **'Browse and try' resources and tools:** The course will culminate in destinated area in the course room, a large table and poster board will be used to display key introductory papers, books, pens and papers, and drawing tablets. Instructors will introduce recommended resources and demonstrate tools. Participants will be given the opportunity to ask questions, browse materials, and try different sketching paper, pens, tablets, and apps.

The instructors will ensure feedback is given to each participant throughout the course. Participants will also be provided with crib sheets and practice sheets and invited to join our existing network, *Sketching in* HCI on Slack: a community engaging with sketching research and practice in HCI [8].

Instructors biography
Makayla Lewis is a postdoctoral research fellow at University of the Arts London, she uses participatory and visual methods to explore human factors of cybersecurity, smart money, and artificial intelligence. Makayla is also an accomplished visual thinker and sketcher who organizes the monthly *SketchnoteHangout.com*, *SketchnoteLDN* amongst other sketching events and courses, and provides visuals and sketchnotes for international companies and conferences such as CHI and ISS.

Miriam Sturdee is a Research Fellow at Lancaster University, specialising in creative practices in computer science. She holds an MFA in Visual Communication from Edinburgh college of art, and works at the

Resources

Makayla Lewis
www.makaylalewis.co.uk
contains HCI sketchnotes, daily
sketches and illustrations, and
links to public engagement
events e.g. SketchnoteLDN,
sketching crib sheets and
worksheets, and an Adobe XD
sketching feature. Authors co-
authored ACM Interactions
magazine features [14, 15] the
latter is also ACM featured
blog. Other helpful resources
include Sketching User
Experiences: The Workbook
[7], The Sketchnote Handbook
[13], and Visual Thinking:
Empowering People &
Organizations through Visual
Collaboration [2] books, which
offer a beginner's perspective
on different sketching
approaches. Course notes will
be produced before course and
shared. Following the course, a
visual summary 'sketchnotes'
and crib sheet will be produced
and shared.

intersection of art and computing, as well investigating
how sketching practice can support the development of
novel technologies and public engagement.

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