Let's Sketch! A Hands-on Introductory Course on Sketching in HCI

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Figure 1: Left: Live sketching by Miriam Sturdee from the ACM ISS 2016 reception and demo session; Right: Lettering practice, and summary of a virtual visit to Mauritshuis Museum in Netherlands by Makayla Lewis, 2020.

ABSTRACT

Sketching is a universal activity but an often overlooked skill – yet it can benefit researchers and practitioners in HCI – sketching has proven to be a valuable addition to skill-sets in academic and industrial contexts. Many individuals lack the confidence to take up sketching after years of non-practice, but it is possible to re-learn, improve, and apply this skill in practical ways. This course is a sketching journey, from scribbles and playful interpretations, to helpful theory, storytelling and practical applications. Attending individuals will learn techniques and applied methods for utilizing sketching within the context of HCI, guided by experienced instructors.

CCS CONCEPTS

• **Human-centered computing** → **Visualization techniques**.

KEYWORDS

Sketching, Drawing, Visual Thinking, HCI

1 INTRODUCTION

Sketching is an ancient practice: from cave painting to picture-books, we have explored the world with our visual senses. 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, this co-existence can be embodied in ideation, design spaces, storytelling and impact and much more – such as a section of code, rapid prototyping, algorithmic recognition, a digital representation and so forth. To learn to sketch gives a researcher or industry practitioner a toolkit of skills, images and creativity that can support and influence insightful work. We learn to sketch much as we learn to speak, so this is a skill that can be learned at any stage in life. The purpose of this course is to take the learner from basic, hands-on sketching to practical research contexts, with opportunities for practice, feedback and creative thinking. Attendees will leave with the confidence to begin to employ sketching in their own HCI research and practice.

2 COURSE SUMMARY

2.1 Benefits & Learning Outcomes:

Sketching is often overlooked in many disciplines, or referred to as a 'soft' skill, however, it can support HCI researchers and practitioners to ideate [18], collaborate, document [23], and explore and discover complex themes and spaces [8, 22]. 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.

2.2 Intended 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.

2.3 Prerequisites:

Attendees should have experience with sketching, but prior knowledge regarding its HCI applications is not required.

2.4 Duration of Course:

2x 75 minute sessions.

2.5 Content and Practical Work:

Participants will be guided through selected sketching techniques and strategies. These techniques will be based on well-established sketching, interaction design and computer science material, e.g. [3, 9, 10], 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. Sketching in HCI course feedback, this course will consist of 10 parts and 16 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) **Icebreaker 'Participant Portraits':** Activity #2: Participants will be asked to work in pairs to draw each other. They will then be asked to give their drawing to the person and ask: what is your name? where do you work and what is your role? Why have you joined today's Sketching in HCI course?

(3) **Exemplar Sketch Gallery:** Exemplar presentation and discussion outlining visual thinking and sketching with examples from HCI, interaction design and computer science followed by a question and answer to establish participants key motivations and goals.

(4) **Visual Language:** Participants will sketch-along with the instructors, following a series of best practice examples that will be live drawn and digitally projected for immediacy: Activity #3: Shapes, connectors, & separators. Activity #4: People, gestures and actions + Show & Tell. Activity #5: Scenes including buildings, place (indoors/outdoors) + Show & Tell. Activity #6: Icon dictionary, participants will work together to rapidly build a visual dictionary of objects and concepts present in HCI. Activity #7: Typography & hand lettering, participants will explore the role of annotation and notes in sketches by hand-lettering using instructor examples (worksheets) + Show & Tell, followed by an exemplar presentation and discussion outlining the role of color & shading (color theory) in sketching.

(5) **Applying Sketching in HCI Research & Practice:** Exemplar presentation and discussion outlining visual thinking and sketching from HCI, interaction design and computer science. Activity #8: Instructors and participants will produce a visual mind map exploring significance, benefits, and pitfalls of sketching in HCI and how participants may apply sketching into their everyday work practice.

(6) **"Without Words":** Activity #9: Participants will be asked to sketch their research area or industry practice (e.g. a recent project) without the use of text or verbalization. Sketches will be placed in a 'sketch gallery', an easy to access wall or large table within the course room. Using digital post-it notes participants will be asked to identify the field of study and key insights of each sketch, each post-it will be stuck next to each sketch. The purpose of this activity is to get to know course peers and to provide constructive feedback on narrative depiction.

(7) **Visual Narratives:** Storyboards & Comics Exemplar presentation followed by Activity #10: An instructor led group discussion about the use of comics and scenarios in HCI e.g. data comics [1], storyboards [3, 17, 22] followed by best practice techniques for creating coherent and engaging comics and scenarios. Activity #11: Visual Economy, participants will be asked to draw a scenario/sequence in only 3 panels, then 1 panel. The purpose of this is for publications where size/length is at a premium.

(8) **Design Fiction & Speculative Scenarios:** Exemplar presentation followed by Activity #12: An instructor led group discussion: 'How can researchers & practitioners use sketching for design fiction subjectively and in co-creation?' e.g. [17, 18, 22]. Activity #13: Group brainstorming session to explore 'Applying sketching to your own research/practice?'.

(9) **Sketching with Participants:** Generation & Analysis Exemplar presentation followed by Activity #14: Instructor led group discussion about gathering and working with participant-generated sketches. Activity #15: Sketch Analysis, participants will be given sketches from existing published work and taken through the methodologies that can be used to generate meaningful data from these visuals.

(10) **Accessibility of Sketches:** Presentation about accessibility of sketches in HCI, best practice and examples, e.g. using screen readers and the need for text alternatives (alt text) www.w3.org/WAI/alt/, and how such measures also support search engine optimization, followed by Activity #16: Participants will be asked to return to their Activity #9 and #11 outputs and add alt text followed by show and tell with a neighbour ensuring constructive critique is given.

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2.6 Resources and Tools:

The instructors will introduce recommended resources, best practices, and demonstrate tools. Course attendees will be provided with a resource and reading list at the end of the course. The course will be planned to run either in person, fully online, or as a blended experience which will incorporate both forms of attendance.

In-Person Event: In designated 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.

Remote Event: As a result of COVID-19 social distancing measures during 2020, the authors believe an introductory presentation that includes resources, tools (e.g. Zoom conference calling and Miro whiteboard), and exemplars of best practice to carrying out collaborative sketching in HCI research at a distance is an essential knowledge acquisition and skill for HCI researchers and practitioners. Participants will be given the opportunity to ask questions.

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 [11, 12]. 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 Adobe XD sketching feature. Other helpful resources include *Sketching User Experiences: The Workbook* [3], *The Back of the Napkin* [14], *The Sketchnote Handbook* [15], and *Doodle Revolution* [2] books (a further reading list will be provided), 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.

2.7 Promotion strategy:

Authors organizers intend to recruit attendees through relevant mailing lists, and by reaching out to HCI researchers that have previously shown an interest in sketching in HCI. To encourage international community building, social media will be used e.g. Twitter and Instagram. A course website is available at: www.sketchhci.wordpress.com/

3 INSTRUCTOR BACKGROUNDS

Makayla Lewis is a lecturer in Technology Innovation at Birmingham City University, researching and teaching human factors in business, cybersecurity, smart money, and AI. Makayla is an accomplished visual thinker and sketcher who organizes sketching events and courses and provides visuals for international companies and conferences such as ACM CHI & ISS. ***Selected publications:*** *A Tactile Visual Library To Support User Experience Storytelling* [6]; *Are You Feeling It? The Use Of Comic Strips To Encourage Empathy in Design* [4]; *I've Got Something To Say: The Use Of Animation To Create A Meta-Story About Professional Identity* [5]; *Makayla Lewis on The Power of Sketchnoting in UX Design* (an Adobe featured blog) [13].

Miriam Sturdee is a research fellow in Creative Practice in Computing at Lancaster University, specialising in investigating how sketching and the arts can support the design and development of novel technology. She also has an MFA in Visual Communication from Edinburgh College of Art. ***Selected publications:*** *Sketching & Drawing as Future Inquiry in HCI* [22]; *Sketching Sustainability in Computing* [23]; *Sketch & The Lizard King: Supporting image inclusion in HCI publishing* [16]; *Visual Methods for the Design of Shape-Changing Interfaces* [18].

Collaborative publications: In addition to previous iterations of the sketching in HCI course [7, 9, 10, 21] and associated ACM CHI Special Interest Groups [11, 12, 21], the authors have also co-authored ACM Interactions magazine features *Feeling SketCHI? the lasting appeal of the drawn image in HCI.* and *SketchBlog #1: the rise and rise of the sketchnote* [19, 20] – the latter is also an ACM featured blog.

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