

Anne Roudaut
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CAREER SUMMARY

I am a **Reader in Computer Science**, researcher in Human Computer Interaction (HCI) and **Head** of the Bristol Interaction Group (BIG). My research is interdisciplinary and combines **hardware prototyping** expertise with a strong grounding in **experimental psychology**. I am recognized by the international peer-community as an emerging leader in HCI, particularly in the area of **shape-changing devices**. My track record shows that I am able to pursue a research agenda that is innovative and far-reaching.

- I published **19 papers in best HCI archival venues**: 2 at UIST and 17 at CHI (main conferences in HCI with an acc. rate ~20%). I received 2 honourable mention awards at CHI18 and 1 at DIS18.
- I published **31 papers since the start of my lectureship**, including 13 papers at CHI or UIST and one at the top conference in robotics (ICRA).
- I have established myself as an independent researcher through the award of a **Leverhulme Early Career Fellowship** (acc. rate ~12%).
- I submitted an **EPSRC first grant within 10 months** of my lectureship and was successfully accepted, as well as **ranked first**.
- I have been **program subcommittee chair at CHI 2017/2018**, **associate chair at CHI** every year since 2011.
- I had extensive media coverage. E.g. some of my work received **more than 1 million views on YouTube and TV** altogether and they were covered by international medias¹.
- My exposure reaches other fields as I was invited to write in a **material science journal**, published in a **material science** conference, in the top regarded **conference in robotics**, in the **journal of Applied Ergonomics** as well as Science Advance.
- I was interviewed along **world-leading experts in shape changes** (Schmidt A., The World Is Not Flat: Shape-Changing User Interfaces, An Interview with Anne Roudaut, Kasper Hornbæk, and Hiroshi Ishii. 2017 Oct.–Dec. IEEE Pervasive Computing).

CURRENT POSITIONS

Aug.19-now	Reader (Associate Professor) at the Department of Computer Science, University of Bristol, UK
Jan.19-now	Adjunct Research Professor, School of Information Technology, Carleton University, CA
Jan.16-now	Hourly paid Lecturer Cardiff Metropolitan University

PREVIOUS POSITIONS

Aug.18-Aug.19	Senior Lecturer at the Department of Computer Science, University of Bristol, UK
Apr.15-Jul.18	Leverhulme Trust Fellow (3 years) and Lecturer , Department of Computer Science, University of Bristol, UK.
May12-Mar15	Research assistant, Bristol Interaction Group, University of Bristol, UK.
Mar10-Apr12	Post-doctoral researcher, HCI lab, Hasso Plattner Institut (HPI), Germany.
Nov06-Feb10	Teaching assistant, Telecom ParisTech, France.

ACADEMIC QUALIFICATION

2010	Ph.D. Computer Science, highest honors, Telecom ParisTech, France. PhD Supervisor: Eric Lecolinet
2006	MSs Computer Science, valedictorian, Uni. Joseph Fourier, France. MSc Supervisor: Joelle Coutaz
2006	MSc Computer Science (double diploma), honors, Uni. Joseph Fourier, France.

¹ E.g. 1st page of the Daily Telegraph on 20/04/13, Wired (www.wired.co.uk/news/archive/2013-04/29/morphees), or The Verge (www.theverge.com/2013/5/1/4283050/morphees-prototype-smartphone-display-changes-shape-on-demand)

PRIZES AND AWARDS

- 2018 Two **honorable mentions** award at CHI18. One at DIS18.
- 2016 Selected as **EPSRC Associate Peer Review College Member**.
- 2015 **Leverhulme Early Career Fellowship** (3 years).
- 2014 The societal impact of a technique I created has been demonstrated by the inclusion of a similar technique in the Chrome web browser of Android devices.
- 2013 Won a contest to study on the Mars Desert Research Station (MDRS), designed around the NASA Design Reference Mission proposal, to prepare for future space missions.
- 2004 Won a merit scholarship (4000€) from the Uni. Joseph Fournier.

PROGRAM COMMITTEE ACTIVITIES

- 2021 Program chair at MobileHCI2021
- 2017 2018 **Chair at CHI** 2017 and 2018 (Papers, Interaction Technologies committee).
- 2017 **Chair** at ISS 2017 (Interactivity).
- Since 2011 **Associate chair at CHI** in 2020, 2019, 2016, 2014, 2013, 2012, 2011 (invited in 2015 but on career break). Member of the CHI'16 Best Paper Committee.
- 2017, 2012, 2013 Associate chair at MobileHCI in 2017, 2013 and 2012.
- 2015, 2016 Associate chair at ITS in 2016 and 2015.
- 2013 Associate chair at IHM'13, posters.
- (Invited as Associate chair at UIST 2017/2011 and demo chair at IHM 2017 but on maternity break).*

PUBLICATIONS

I publish in highly competitive peer-reviewed conferences (CHI, the second SIG of ACM accepts ~20% of papers). In the field of HCI, CHI is the single most prestigious conference, with lower acceptance rates and higher impact factors than any other venue, including best journals in HCI. The UK's main agency for funding research (EPSRC) recognizes CHI as the top conference in HCI. **My H-number is 13 with more than 920 citations** (google scholar). Below my publications ordered by importance (conferences first).

Peer Reviewed Conferences (full paper)

- [1] Teyssier, M., Bailly G., Pelachaud C., Lecolinet E., Conn A., **Roudaut A.**, Skin-On Interfaces: A Bio-Driven Approach for Artificial Skin Design to Cover Interactive Devices **UIST'19**
- [2] Barnaby G., **Roudaut A.**, Mantis: A Scalable, Lightweight and Accessible Architecture to Build Multiform Force Feedback Systems **UIST'19**
- [3] Kim H., Coutrix C., Guimaraes P., **Roudaut A.**, ExpanDial: Designing a Shape-Changing Dial DIS'19
- [4] Goguey A., Steer, C. Lucero A., Nigay L., Sahoo D., Coutrix, C., **Roudaut A.**, Subramanian S., Tokuda Y., Neate T., Pearson J., Robinson S., Jones M., PickCells: A Physically Reconfigurable Cell-composed Touchscreen **CHI'19**
- [5] Simon F., Roudaut A., Irani P., Serrano M., Finding Information on Non-Rectangular Interfaces **CHI'19**
- [6] Designing for Multiple Hand Grips and Body Postures within the UX of a moving Smartphone. *Award*. DIS'18
- [7] Qamar I., Groh R., Holman D., **Roudaut A.** HCI meets Material Science: A Literature Review of Morphing Materials for the Design of Shape-Changing Interfaces. (acc.25%). *Award*. **CHI'18**
- [8] Alexander J., **Roudaut A.**, Steimle J., Hornbæk K., Bruns M., Folder S., Merritt T., Grand Challenges in Shape-Changing Interface Research. (acc.25%)* **CHI'18**

- [9] Kim H., Coutrix C., **Roudaut A.** Morphees+: Refining the Shape Resolution Taxonomy Through Everyday Reconfigurable Objects. (acc.25%). *Award.* CHI'18
- [10] Kim H., Coutrix C., **Roudaut A.** KnobSlider: Bottom-Up Design of a Shape-Changing UI for Parameters Control. (acc.25%). CHI'18
- [11] Eardley R., **Roudaut A.**, Gill S., Thompson, S. Investigating How Smartphone Movement is Affected by Body Posture. (acc.25%). CHI'18
- [12] Al Maimani A., **Roudaut A.**, Frozen Suit: Designing a Changeable Stiffness Suit and its Application to Increase Realism in Games. (acc.25%). CHI'17
- [13] Serrano M., **Roudaut A.**, Irani P. Visual Composition of Graphical Elements on Non-Rectangular displays. (acc.25%). CHI'17
- [14] Eardley R., **Roudaut A.** Gill, S., Thompson S. Understanding Grip Shifts: How Form Factors Impact Hand Movements on Mobile Phones. (acc.25%). CHI'17
- [15] Kim, H., Coutrix, C., **Roudaut A.**, KnobSlider: Design of a Shape-Changing Device Grounded on Users' Needs. IHM'17
- [16] Serrano M., **Roudaut A.**, Irani P. Investigating Text Legibility on Non-Rectangular Displays. (acc.23%). * CHI'16
- [17] **Roudaut A.**, Krusteva D., McCoy M., Karnik A., Ramani K, Subramanian S., Cubimorph: Designing Modular Interactive Devices for End-Users. (acc.34.7%). * ICRA'16
- [18] Omirou T., Marzo, A. Subramanian S., **Roudaut A.** Floating Charts: Data Plotting using free-floating acoustically levitated representations. (acc.30%). 3DUI'16
- [19] Seah S., Obrist M., **Roudaut A.**, Subramanian S. Need for touch in human space exploration: towards the design of a Morphing Haptic Glove,ExoSkin. (acc.29.6%). Interact'15
- [20] **Roudaut A.**, Reed R., Hao T., Subramanian, S. Changibles: Analyzing and Designing Shape Changing Constructive Assembly. (acc.22.8%). CHI'14
- [21] **Roudaut A.**, Karnik, A., Lochtefeld, M., Subramanian, S. Morphees: Toward High "Shape Resolution" in Self-Actuated Flexible Mobile Devices. (acc.19.7%).* CHI'13
- [22] **Roudaut A.**, Raus A., Sterz C. Plauth M., Lopes P., Baudisch P. Gesture Output: Eyes-Free Output Using a Force Feedback Touch Surface. (Acceptation 19.7%).* CHI'13
- [23] Chen L., Muller S., **Roudaut A.**, Baudisch P. Sensing Stacks of Building Blocks, Dials and Sliders on Capacitive Touch Screens. (acc.23%). CHI'12
- [24] **Roudaut A.**, Pohl H., Baudisch P. Touch input on curved surfaces. (Acceptation rate: 26%).* CHI'11
- [25] **Roudaut A.**, Lecolinet E., Guiard Y. MicroRolls: expanding touch-screen input vocabulary by distinguishing rolls vs. slides of the thumb. (acc.25%).* CHI'09
- [26] **Roudaut A.**, Baglioni, M., Lecolinet, E. TimeTilt: Using Sensor-Based Gestures to Travel Through Multiple Applications on a Mobile Device. (acc.29%). Interact'09
- [27] **Roudaut A.**, Bailly G., Lecolinet, E., Nigay, L. Leaf Menus: Linear Menus with Stroke Shortcuts for Small Handheld Devices. (acc.29%).* Interact'09
- [28] **Roudaut A.**, Huot S., Lecolinet E. TapTap and MagStick: improving one-handed target acquisition on small touch-screens. (acc.27%).* AVI'08
- [29] Bailly, G., **Roudaut A.**, Lecolinet, E., Nigay, L. Menu Leaf : Enrichir les menus lineaires par des gestes. (acc. 44%).* IHM'08
- [30] **Roudaut A.**, Lecolinet, E. Un espace de classification pour l'interaction sur dispositifs mobiles. (acc. 44%).* IHM'07
- [31] **Roudaut A.**, Coutaz J. Méta-IHM, comment controler son espace interactif ambient. (acc. 45%).* Ubimob'06

Reviewed Conferences (extended abstract 4-6 pages)

- [32] Albarrak L., Metatla O., Roudaut A., An Exploratory Study for Evaluating the Use of Floor Visualisations in Navigation Decisions CHI'19
- [33] Mourouzis C., Qamar I., Roudaut A., SweepScreen: Sweeping Programmable Surfaces to Create Lowfi Displays Everywhere CHI'18
- [34] Qamar I. **Roudaut A.**, 3D printing of morphing interactive devices. Smart Materials, Adaptive Structures and Intelligent Systems. SMASIS'17
- [35] Baousi K., Fear N., Mourouzis C., Stokes B., Wood H., Worgan P., **Roudaut A.** Inflashoe: A Shape Changing Shoe to Control Underfoot Pressure. Late Breaking Work. CHI'17
- [36] Eardley R., Gill S., **Roudaut A.**, Thompson S., Hare J. Investigating how the hand interacts with different mobile phones. ACM, NY, USA, 698-705. Mobile HCI'16
- [37] James Burnside, Ben Elgar, Sam Healer, Alexander Hill, Zac Ioannidis, Luke Mitchell, Paul Worgan, **Roudaut A.** Force Attraction Pen: A Haptic Pen with Variable Attraction Force. Late-Breaking-Work. (acc.43.4%). CHI'16
- [38] Christos Chacholiades, Cesar Flores Cano, Yuying Wang, Eman Meldah, Themis Omirou, **Roudaut A.** IStage: An Interactive Stage System. Late-Breaking-Work. (acc.43.4%). CHI'16
- [39] Alex Harman, Hristo Dimitrov, Ruisha Ma, Sam Whitehouse, Yiu Li, Paul Worgan, Themis Omirou, **Roudaut A.** NotiFall–Ambient Sonification System Using Water. (acc.43.4%). CHI'16
- [40] **Roudaut A.**, Martinez D., Chohan A., Otrocol V., Cobbe R., Steele M., Patrichi I. Rubikon: a highly reconfigurable device for advanced interaction. CHI'14
- [41] **Roudaut, A.** Visualization and Interaction Techniques for Mobile Devices, doctoral consortium. 3153-3156.* CHI'09
- [42] **Roudaut, A.** Visualisation et Interaction sur dispositifs mobiles, doctoral consortium.* IHM'08

Journal Papers

- [43] **Roudaut A.** Bridging the Gap Between Teaching and Research: a Use Case for Engineering & Applied Science, **Journal of Higher Education Pedagogies**, special issue on Engineering & Applied Science Education Research.
- [44] Girouard A., Kun A., Roudaut, A., Shaer O., Pervasive Computing Education. Pervasive Computing 2018.
- [45] OConnor M., Deeks H., Dawn E., Metatla O., Roudaut A., Sutton M., Glowacki B., Sage R., Tew P., Wonnacott M., Bates P, Mulholland A., Glowacki D., An interactive multi-user framework for sampling molecular conformational dynamics in virtual reality. Science Advances. 2018
- [46] Jones H., **Roudaut A.**, Chatzimichali A., Potter K., Ward C., The Dibber: Designing a Standardised Handheld Tool for Lay-up Tasks. Journal Applied Ergonomics.
- [47] **Roudaut A.**, Subramanian, S. Creating the future of interactive devices, together. **Material Today** (2013). Volume 16, Issues 7–8, Page 254–255.

Other publications (refereed)

- [48] Kim, H., Coutrix, C., **Roudaut A.** Leveraging Everyday Deformation for Shape-Changing Interfaces. Workshop paper. CHI'16
- [49] Serrano M., **Roudaut A.**, Irani P. Challenges in Designing Content for Non-Rectangular Displays. Workshop paper. CHI'16

- [50] Acosta, M., **Roudaut A.**, Changible Packaging: Dynamic Affordance to Enhance Medication. Workshop paper. * CHI'16
- [51] **Roudaut A.**, Raus, A., Sterz, C., Plauth, M., Lopes, P., Baudisch, P. Gesture Output: Eyes-Free Output Using a Force Feedback Touch Surface. Demo.* CHI'13
- [52] **Roudaut A.**, Raus, A., Sterz, C., Plauth, M., Lopes, P., Baudisch, P. Gesture Output: Eyes-Free Output Using a Force Feedback Touch Surface. Demo. WHC'13
- [53] Krusteva, D., **Roudaut A.** Origami-based deformable displays. Workshop. CHI'13
- [54] Holman, D., **Roudaut A.** simulating interaction via computer-aided-design. Workshop paper.* CHI'13
- [55] **Roudaut A.**, Subramanian, S. Designing and Developing Self-Actuated Flexible Touch Screens. Workshop paper.* Mobile HCI'12

UNIVERSITY ROLES

2018-Now	Head of the Bristol Interaction group
2015-2018	Co-Head of the Bristol Interaction group
2018-2019	Post Graduate Senior Tutor
2018-2020	Bristol Institut Of Learning (BILT) fellow

SUPERVISION ACTIVITIES

- **1 Postdoc** (Isabel Qamar, started Dec. 2016)
- **9 PhD students (2 finished)**: Ollie Hanson, Daniel Bennet, Lulwah Al-Barrack, Gareth Barnaby , Helen Deeks , Hyunyoung Kim, Rachel Eardley, Themis Omirou (finished), Tom Carter (finished)

TEACHING ACTIVITIES

- I have 12 years of experience in high education teaching (undergraduate and postgraduate levels in France, Germany, UK) and have taught **327 hours of lecture** (without preparation time). I am **directing three units at UoB**, two of which I redesigned in 2015, and one that I introduced in 2018. I am additionally spontaneously organising a weekly seminar from February to August, which is attended by MSc students supervised by the academics in my research group (Bristol Interaction Group).
- I am involved in **high education research**, particularly research-led teaching, and have published journal article on the topic [43]**Error! Reference source not found.** I organized a Dagstuhl seminar on teaching in high education to discuss about grand challenges in high education pedagogy and innovative technologies. I have also received a **Bristol Institut of Learning fellowship** to further my research in this area.
- I am supervising an average of 5-10 master students per year since 2006. I have **9 PhD students**, two having graduated and one being close to (already started as a research assistant). I am also supervising one research assistant and one graphical designer.

Year and title	Capaci	Level	Type	Nature	Hour	Assessment
2015-2020-COMS21301 Human-Computer Interaction	~70	2 nd	Director Lecturer	Lectures	~20	Coursework/exa m
2015-2020-COMSM0009 Interactive Devices	~50	3 rd , 4 th	Director Lecturer	Workshop Lectures	~20	Coursework
2018-2020- COMS10011 - Probability and	~180	1 st	Lecturer	Lectures	~13	Coursework/exa m
2015-2020-COMSM2202 Research Skills	~100	4 th	Advisor Marker	Supervision	N/A	Presentations and Dissertation
2015-2020-COMSM3100 MSc Advanced Project	~40	4 th	Advisor Marker	Supervision	N/A	Presentations and Dissertation
2015-2020- COMS30400 Group Project	~50	3 rd	Advisor Marker	Examination	N/A	Coursework

2015-2020- Undergraduate weekly seminar	~10	3rd, 4th	Supervisor	Seminar	~20	None
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COMMISSIONS OF TRUST

2019	PhD thesis Internal Examiner of Shashitha Kularatna (University of Bristol).
2018	PhD thesis External Examiner of Michael Wessely (INRIA Saclay, France).
2018	Msc thesis External Examiner of Chacon Salas, (University of Merlbourne).
2018	PhD thesis Internal Examiner of Jess McIntosh (University of Bristol).
2017	PhD thesis Internal Examiner of Hannah Limerick (University of Bristol).
2017	PhD thesis Internal Examiner of Austin Gregg-Smith (University of Bristol).
Since 2006	Regular reviewer for HCI conferences and journals.

ORGANISATION OF SCIENTIFIC MEETINGS

2019	Dagstuhl Seminar on Ubicomp Education, Germany
2018	Interactive Metamaterial Workshop, Bristol
2018	Interactive Metamaterial Workshop, Bristol
2017	Shape-Changing Interfaces. Jason Alexander, Sean Follmer, Kasper Hornbæk, Anne Roudaut. Dagstuhl Seminar, Germany
2016	Interaction Techniques for Mobile Collocation, Andrés Lucero, Aaron Quigley, Jun Rekimoto, Anne Roudaut, Martin Porcheron, Marcos Serrano, workshop Mobilehci'16, Italy.
2013	Organic experiences: (re)shaping interactions with deformable displays, Jason Alexander, Ryan Brotman, David Holman, Audrey Younkin, Roel Vertegaal, Johan Kildal, Andrés A. Lucero, Anne Roudaut, Sriram Subramanian. 2013. Workshop on. CHI'13, Paris.

FUNDINGS

I have secured direct funding from national and international sources.

Title	Role	Funding body	Dates	Award £
As PI				
Shape Changing Handheld Devices for Carpal Tunnel	PI	Royal Society IES\R2\170109	Feb.18-Jan.20	11,800
Returning careers' scheme	PI	UoB	Jan.18-Dec.19	7,400
Post-Trust Tour Guide: A Tool for Experimental Museum Navigation	PI	Brigstow seedcorn	Jan.17-Jul.17	5,000
Bone Conducting Lollipop	PI	Brigstow seedcorn	Jan.17-Jul.17	5,000
Highly organic and programmable electronics	PI	Leverhulme Trust	Apr.15-Aug.18	87,000
Automorph: Bringing Rigor to The Creation of Morphing Interactive Devices	PI	EPSRC first grant	Oct.16-Feb.19	90,000
Returning careers' scheme	PI	UoB	Jul.15-Jun.16	7,360
Reconfigurable metamorphic structures for shape changing devices	PI	EPSRC bger EP/K004581/1	Dec.12-Apr.13	5,790
Merit s scholarship	PI	University Joseph Fourier	Sept.14-Jun.15	3,100
Empowering the maker community with fabrication material	PI	Pump Priming UoB	N/A	5,000
As collaborator				
Breaking the glass: multimodal, malleable interactive mobile surfaces for hands-in interactions	Collaborator	EPSRC EP/N013948/1	Jan.16-Jan.20	N/A

Flexible and tangible Controllers for HCI	Collabor	ANR-15-CE23-0011-01	Oct.15-Sept.18	N/A
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OPEN EDUCATION

- 2016 Gabrieli J. 9.00SC Introduction to Psychology. Massachusetts Institute of Technology: MIT OpenCourseWare, <https://ocw.mit.edu>. License: Creative Commons BY-NC-SA.
- Bear M., Seung S.. 9.01 Introduction to Neuroscience. Massachusetts Institute of Technology: MIT OpenCourseWare, <https://ocw.mit.edu>. License: Creative Commons BY-NC-SA.

SPECIFIC SKILLS

- Programming: C# (.Net Compact Framework), C/C++, Java, Python, Ada, Prolog, JavaScript, PHP, CSS.
- Computer vision: OpenCV and EMGU.CV for the .Net Framework.
- Computer graphics: Maya 3D programming.
- Robotic: OpenHaptics programming for articulated arms (e.g. PHANToM).
- Electronic: Arduino, Xmos, X-osc, electronic circuits
- Fabrication tool: 3D printers, laser cutters
- Statistic: Experimental design, software: Matlab, Stata, Excel.
- Image, animation and video: Adobe Flash, Photoshop, Premiere pro, After effect.

HOBBIES

- I love water and snow sports.
- Piano and crafting arts
- Reading and novel writing.
- Neurology and sleep troubles.

CONFERENCE ACROYMS

CHI and UIST are the most selective international conference of HCI, CHI being the second SIG of ACM after SIGGRAPH. IHM is the most selective conference in France.

- AVI, ACM SIGCHI's International Working Conference of Advanced Visual Interfaces.
- CHI, ACM SIGCHI's International Conference on Human Factors in Computing Systems.
- ICMI, ACM SIGCHI's International Conference on Multimodal Interaction.
- IHM, ACM Conférence Francophone Sur l'Interaction Homme-Machine.
- Interact, IFIP Conference on Human-Computer Interaction.
- ITS, ACM International Conference on Interactive Tabletops and Surfaces.
- MobileHCI, ACM SIGCHI's International Conference on Human-Computer Interaction with Mobile Devices and Services.

- UIST, ACM Symposium on User Interface Software and Technology.