

**Anne Roudaut**  
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## CAREER SUMMARY

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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 in best HCI archival venues: **15 papers at CHI** (the main conference in HCI, ACM SIGCHI, with an acc. rate ~20%).
- I **published 24 papers since the start of my lectureship**, including 9 papers at CHI 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 medias<sup>1</sup>.
- 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

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Apr. '15-now     **Lecturer** at the Department of Computer Science, University of Bristol, UK.  
**Leverhulme Trust Fellow** (Early Career).  
**Hourly paid Lecturer** Cardiff Metropolitan University.  
**Co-leader** of the Bristol Interaction Group (BIG).

## PREVIOUS POSITIONS

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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

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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.

## PRIZES AND AWARDS

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2018     Two **honorable mentions** award at CHI 2018.  
 2016     Selected as **EPSRC Associate Peer Review College Member**.

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<sup>1</sup> E.g. 1st page of the Daily Telegraph on 20/04/13, Wired ([www.wired.co.uk/news/archive/2013-04/29/morphees](http://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](http://www.theverge.com/2013/5/1/4283050/morphees-prototype-smartphone-display-changes-shape-on-demand))

- 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

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- 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 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.

### PUBLICATIONS

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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 10 with more than 680 citations** (google scholar). Below my publications ordered by importance (conferences first).

#### Peer Reviewed Conferences (full paper)

- [1] 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%). **CHI'18**
- [2] 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**
- [3] Kim H., Coutrix C., **Roudaut A.** Morphees+: Refining the Shape Resolution Taxonomy Through Everyday Reconfigurable Objects. (acc.25%). **CHI'18**
- [4] Kim H., Coutrix C., **Roudaut A.** KnobSlider: Bottom-Up Design of a Shape-Changing UI for Parameters Control. (acc.25%). **CHI'18**
- [5] Eardley R., **Roudaut A.**, Gill S., Thompson, S. Investigating How Smartphone Movement is Affected by Body Posture. (acc.25%). **CHI'18**
- [6] Al Maimani A., **Roudaut A.**, Frozen Suit: Designing a Changeable Stiffness Suit and its Application to Increase Realism in Games. (acc.25%). **CHI'17**
- [7] Serrano M., **Roudaut A.**, Irani P. Visual Composition of Graphical Elements on Non-Rectangular displays. (acc.25%). **CHI'17**
- [8] Eardley R., **Roudaut A.** Gill, S., Thompson S. Understanding Grip Shifts: How Form Factors Impact Hand Movements on Mobile Phones. (acc.25%). **CHI'17**
- [9] Kim, H., Coutrix, C., **Roudaut A.**, KnobSlider: Design of a Shape-Changing Device Grounded on Users' Needs. IHM'17
- [10] Serrano M., **Roudaut A.**, Irani P. Investigating Text Legibility on Non-Rectangular Displays. (acc.23%)\*. **CHI'16**
- [11] **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
- [12] Omirou T., Marzo, A. Subramanian S., **Roudaut A.** Floating Charts: Data Plotting using free-floating acoustically levitated representations. (acc.30%). 3DUI'16

- [13] 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
- [14] **Roudaut A.**, Reed R., Hao T., Subramanian, S. Changibles: Analyzing and Designing Shape Changing Constructive Assembly. (acc.22.8%). CHI'14
- [15] **Roudaut A.**, Karnik, A., Lochtefeld, M., Subramanian, S. Morphees: Toward High "Shape Resolution" in Self-Actuated Flexible Mobile Devices. (acc.19.7%)\*. CHI'13
- [16] **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
- [17] Chen L., Muller S., **Roudaut A.**, Baudisch P. Sensing Stacks of Building Blocks, Dials and Sliders on Capacitive Touch Screens. (acc.23%). CHI'12
- [18] **Roudaut A.**, Pohl H., Baudisch P. Touch input on curved surfaces. (Acceptation rate: 26%)\*. CHI'11
- [19] **Roudaut A.**, Lecolinet E., Guiard Y. MicroRolls: expanding touch-screen input vocabulary by distinguishing rolls vs. slides of the thumb. (acc.25%)\*. CHI'09
- [20] **Roudaut A.**, Baglioni, M., Lecolinet, E. TimeTilt: Using Sensor-Based Gestures to Travel Through Multiple Applications on a Mobile Device. (acc.29%). Interact'09
- [21] **Roudaut A.**, Bailly G., Lecolinet, E., Nigay, L. Leaf Menus: Linear Menus with Stroke Shortcuts for Small Handheld Devices. (acc.29%)\*. Interact'09
- [22] **Roudaut A.**, Huot S., Lecolinet E. TapTap and MagStick: improving one-handed target acquisition on small touch-screens. (acc.27%)\*. AVI'08
- [23] Bailly, G., **Roudaut A.**, Lecolinet, E., Nigay, L. Menu Leaf : Enrichir les menus lineaires par des gestes. (acc. 44%)\*. IHM'08
- [24] **Roudaut A.**, Lecolinet, E. Un espace de classification pour l'interaction sur dispositifs mobiles. (acc. 44%)\*. IHM'07
- [25] **Roudaut A.**, Coutaz J. Méta-IHM, comment controler son espace interactif ambient. (acc. 45%)\*. Ubimob'06

#### Reviewed Conferences (extended abstract 4-6 pages)

- [26] Qamar I. **Roudaut A.**, 3D printing of morphing interactive devices. Smart Materials, Adaptive Structures and Intelligent Systems. SMASIS'17
- [27] 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
- [28] 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
- [29] 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
- [30] 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
- [31] 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
- [32] **Roudaut A.**, Martinez D., Chohan A., Otrocol V., Cobbe R., Steele M., Patrichi I. CHI'14

Rubikon: a highly reconfigurable device for advanced interaction.

- [33] **Roudaut, A.** Visualization and Interaction Techniques for Mobile Devices, CHI'09 doctoral consortium. 3153-3156.\*
- [34] **Roudaut, A.** Visualisation et Interaction sur dispositifs mobiles, doctoral consortium. IHM'08

### Professional Journal Papers

- [35] **Roudaut A.,** Subramanian, S. Creating the future of interactive devices, together. **Material Today** (2013). Volume 16, Issues 7–8, Page 254–255.
- [36] Jones H., **Roudaut A.,** Chatzimichali A., Potter K., Ward C., The Dibber: Designing a Standardised Handheld Tool for Lay-up Tasks. *Journal Applied Ergonomics*.
- [37] **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.

### Other publications (refereed)

- [38] Kim, H., Coutrix, C., **Roudaut A.** Leveraging Everyday Deformation for Shape-Changing Interfaces. Workshop paper. CHI'16
- [39] Serrano M., **Roudaut A.,** Irani P. Challenges in Designing Content for Non-Rectangular Displays. Workshop paper. CHI'16
- [40] Acosta, M., **Roudaut A.,** Changible Packaging: Dynamic Affordance to Enhance Medication. Workshop paper. CHI'16
- [41] **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
- [42] **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
- [43] Krusteva, D., **Roudaut A.** Origami-based deformable displays. Workshop. CHI'13
- [44] Holman, D., **Roudaut A.** simulating interaction via computer-aided-design. Workshop paper. CHI'13
- [45] **Roudaut A.,** Subramanian, S. Designing and Developing Self-Actuated Flexible Touch Screens. Workshop paper. Mobile HCI'12

## SUPERVISION ACTIVITIES

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**1 Postdoc** (Isabel Qamar, started Dec. 2016)

### PhD students

Daniel Bennet on eudaimonic experiences

Lulwah Al-Barrack on subliminal priming and HCI

Gareth Barnaby on designing a CAD software for virtual reality using haptic glove

Helen Deeks on virtual environments for molecular modelling

Hyunyoung Kim on flexible and tangible controllers

Rachel Eardley on how physicality influences the user experience of digital technology

Themis Omirou on acoustic levitation for data visualisation (finished)

Tom Carter on interactive systems featuring multi-point, mid-air haptic feedback (finished)

**TEACHING ACTIVITIES**

Since 2015 I am directing two units (COMSM0009 Interactive Devices, COMS21301 Human Computer Interaction). Evidence to support my teaching quality is provided by consistent high positive feedback from the students (rating 4.3/5). Since 2006 I taught more **than 300 hours** of lectures to undergraduate and master students in France, Germany and UK (details over the last 2 years below).

Year and title	Capaci	Curric	Level of	Nature of	Hours	Assessment
2015-2017-COMS21301 Human-Computer Interaction	~60	2 <sup>nd</sup>	Director Lecturer	Lectures	24	Coursework (50%), Exam
2015-2017-COMSM0009 Interactive Devices	~40	3 <sup>rd</sup> , 4 <sup>th</sup>	Director Lecturer	Workshop Lectures	24	Coursework (100%)
2015-2017-COMSM2202 Research Skills	~100	4 <sup>th</sup>	Advisor Marker	Supervision	N/A	Presentations and
2015-2017-COMSM3100 MSc Advanced Project	~40	4 <sup>th</sup>	Advisor Marker	Supervision	N/A	Presentations and
2015-2017- COMS30400 Group Project	~50	3 <sup>rd</sup>	Advisor Marker	Examination	N/A	Coursework (100%)
2015-2017- Undergraduate weekly seminar	~10	3 <sup>rd</sup> , 4 <sup>th</sup>	Superviso r	Seminar	~20	None

**FACULTY LEARNING COMMUNITY**

2015-2016 Research-led teaching in Engineering and Applied Sciences, project within the newly formed Faculty Learning Community at the University of Bristol.

**COMMISSIONS OF TRUST**

2016 PhD thesis Internal Examiner of Hannah Limerick (University of Bristol).  
PhD thesis Internal Examiner of Austin Gregg-Smith (University of Bristol).  
Since 2006 Regular reviewer for HCI conferences and journals.

**ORGANISATION OF SCIENTIFIC MEETINGS**

2018 Interactive Metamaterial Workshop.  
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	Funding body	Dates	Award £
<b>As PI</b>			
Shape Changing Handheld Devices for Carpal Tunnel Syndrome Rehabilitation	IES\R2\170109	Feb. 18 2 years	11,870
Returning careers' scheme	Uni. Bristol	Jan. 18 2 years	7,460
Highly organic and programmable electronics	Leverhulme Fellowship	Apr. 15 3 years	87,000
Automorph: Bringing Rigor to The Creation of Morphing Interactive Devices	EP/P004342/1	Oct. 16 2 years	90,000
Returning careers' scheme	Uni. Bristol	Jul. 15 1 year	7,360

Reconfigurable metamorphic structures for shape changing devices	EPSRC bger EP/K004581/1	Dec. 12 4 months	5,790
Post-Trust Tour Guide: A Tool for Experimental Museum Navigation	Brigstow	2017	5,000
Bone Conducting Lollipop	Brigstow	2017	5,000
<b>As collaborator</b>			
Breaking the glass: multimodal, malleable interactive mobile surfaces for hands interactions	EPSRC EP/N013948/1	Jan. 16 42 mo.	N/A
Flexible and tangible Controllers for HCI	ANR-15-CE23-0011-01	Oct. 15 3 years	N/A

## 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 ACROYSMS

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.