

Anne Roudaut

23/09/82 in Brest (France)

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CAREER SUMMARY

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 the best HCI archival venues and in the past 7 years I published **7 papers at CHI** (the main conferences in HCI, ACM CHI and UIST, with an acc. rate ~20%).
- I published **9 papers on my own in a year** within my position of lecturer, including one 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%), demonstrating my ability to secure research funding.
- I submitted an **EPSRC first grant** within 10 month of my lectureship and was successfully **accepted, as well as ranked first**.
- I am program **subcommittee Chair at CHI** (best HCI venue) in 2017 and 2018, have been **associate chair at CHI** since 2011, and have been invited speaker in both industry and academia, demonstrating further my leadership exposure. Note that serving as subcommittee Chair for CHI is rare and only offered to leaders or emerging leaders of the field.
- I had extensive media coverage. E.g. [16] and [3] 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 [13] and I published the first modular mobile devices at the top conference in **robotics** [3].

CURRENT POSITIONS

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

PREVIOUS POSITIONS

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

2013 Postgraduate certificate in Teaching and Learning in Higher Education, Bristol.
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

2016 Selected as **EPSRC Associate Peer Review College Member**.
2015 **Leverhulme Early Career Fellowship** (3 years).
2014 The societal impact of the technique I created in [29] 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.

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)

PROGRAM COMMITTEE ACTIVITIES

- 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

My publications are in highly competitive peer-reviewed conferences (ACM CHI, the second SIG of ACM, accepts 20% of submissions). Full papers at CHI are archival contributions equivalent to journal publications in other fields (full length paper submission follow a rigorously peer-reviewed process with rebuttal). **HCI journals have substantially lower scientific impact than conferences.** The UK's main agency for funding research (EPSRC) recognizes CHI as the top conference in HCI. My H-number is 9 with 496 citations.

Peer reviewed publications within my first year of lectureship (9 papers +3 workshop papers)

1. Hyunyoung Kim, Céline Coutrix, Anne Roudaut, KnobSlider: Design of a Shape-Changing Device Grounded on Users' Needs, IHM '16, Fribourg, Swiss, to appear.
 2. Rachel Eardley, Steve Gill, Anne Roudaut, Stephen Thompson, Joanna Hare. 2016. Investigating how the hand interacts with different mobile phones. MobileHCI '16. ACM, NY, USA, 698-705.
 3. Roudaut A., Krusteva D., McCoy M., Karnik A., Ramani K, Subramanian S., Cubimorph: Designing Modular Interactive Devices for End-Users, **ICRA'16**. (acc.34.7%).
 4. Serrano M., Roudaut A., Irani P. Investigating Text Legibility on Non-Rectangular Displays. **CHI'16**. (acc.23%).
 5. James Burnside, Ben Elgar, Sam Healer, Alexander Hill, Zac Ioannidis, Luke Mitchell, Paul Worgan, Anne Roudaut. Force Attraction Pen: A Haptic Pen with Variable Attraction Force. Late-Breaking-Work. CHIEA'16. (acc.43.4%).
 6. Christos Chacholiades, Cesar Flores Cano, Yuying Wang, Eman Meldah, Themis Omirou, Anne Roudaut. IStage: An Interactive Stage System. Late-Breaking-Work. CHIEA'16. (acc.43.4%).
 7. Alex Harman, Hristo Dimitrov, Ruisha Ma, Sam Whitehouse, Yiu Li, Paul Worgan, Themis Omirou, Anne Roudaut. NotiFall–Ambient Sonification System Using Water. CHIEA'16. (acc.43.4%).
 8. Omirou, T. Marzo, A. Subramanian, S., Roudaut, A. Floating Charts: Data Plotting using Free-Floating Acoustically Levitated Representations. 3DUI'16. (acc.30%).
 9. Seah S., Obrist M., Roudaut A., Subramanian S. Need for Touch in Human Space Exploration: Towards the Design of a Morphing Haptic Glove – ExoSkin. Interact'15. (acc.29.6%).
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10. Kim, H., Coutrix, C., Roudaut, A. Leveraging Everyday Deformation for Shape-Changing Interfaces. **CHI'16** (*workshop paper*).
 11. Serrano M., Roudaut A., Irani P. Challenges in Designing Content for Non-Rectangular Displays. **CHI'16** (*workshop paper*).
 12. Acosta, M., Roudaut, A., Changible Packaging: Dynamic Affordance to Enhance Medication. **CHI'16** (*workshop paper*).

Peer reviewed publications without PhD supervisor (8 papers +5 workshop or demo papers)

13. Roudaut A., Subramanian, S. Creating the future of interactive devices, together. Material Today (2013). Volume 16, Issues 7–8, Page 254–255.
14. Roudaut A., Reed R., Hao T., Subramanian, S. Changibles: Analyzing and Designing Shape Changing Constructive Assembly. **CHI'14**. (acc.22.8%). **Cited=6**.
15. Roudaut A., Martinez, D., Chohan, A., Otrocol V., Cobbe-Warburton, R., Steele, M., Patrichi, I., Rubikon: a highly reconfigurable device for advanced interaction. CHI EA'14. 1327-1332. **Cited=1**.
16. Roudaut A., Karnik, A., Lochtefeld, M., Subramanian, S. Morphees: Toward High "Shape Resolution" in Self-Actuated Flexible Mobile Devices. **CHI'13**. (acc.19.7%). **Cited=64**.
17. Roudaut A., Raus A., Sterz C. Plauth M., Lopes P., Baudisch P. Gesture Output: Eyes-Free Output

- Using a Force Feedback Touch Surface. **CHI'13**. (Acceptation 19.7%). **Cited=17**.
18. Chen L., Muller S., Roudaut A., Baudisch P. Sensing Stacks of Building Blocks, Dials and Sliders on Capacitive Touch Screens. **CHI'12**, 2189-2192. (acc.23%). **Cited=53**.
 19. Roudaut A., Pohl H., Baudisch P. Touch input on curved surfaces. **CHI'11**, 1011-1020. (acc. 26%). **Cited=30**.
 20. Roudaut, A. Visualization and Interaction Techniques for Mobile Devices. CHI EA'09, doctoral consortium. 3153-3156. (acc.16%).
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21. Roudaut, A., Raus, A., Sterz, C., Plauth, M., Lopes, P., Baudisch, P. Gesture Output: Eyes-Free Output Using a Force Feedback Touch Surface. **CHI'13** in Paris, France. 2013 (*Demo paper*).
 22. Roudaut, A., Raus, A., Sterz, C., Plauth, M., Lopes, P., Baudisch, P. Gesture Output: Eyes-Free Output Using a Force Feedback Touch Surface. WHC'13 in Daejeon, Korea. 2013. (*Demo paper*).
 23. Krusteva, D., Roudaut, A. Origami-based deformable displays. **CHI'13** (*workshop paper*).
 24. Holman, D., Roudaut, A. simulating interaction via CAD. **CHI'13** (*workshop paper*).
 25. Roudaut, A., Subramanian, S. Designing and Developing Self-Actuated Flexible Touch Screens. mobileHCI'12 (*workshop paper*),

Peer reviewed publications with PhD or MsC supervisors (8 papers)

26. Roudaut A., Lecolinet E., Guiard Y. MicroRolls: expanding touch-screen input vocabulary by distinguishing rolls vs. slides of the thumb. **CHI'09**, 927-936. (acc.25%). **Cited=99**.
27. Roudaut, A., Baglioni, M., Lecolinet, E. TimeTilt: Using Sensor-Based Gestures to Travel Through Multiple Applications on a Mobile Device. Interact'09. 830-834. (acc.29%). **Cited=24**.
28. Roudaut, A., Bailly, G., Lecolinet, E., Nigay, L. Leaf Menus: Linear Menus with Stroke Shortcuts for Small Handheld Devices. Interact'09. 616-619. (acc.29%). **Cited=20**.
29. Roudaut A., Huot S., Lecolinet E. TapTap and MagStick: improving one-handed target acquisition on small touch-screens. AVI'08, 146-153. (acc.27%). **Cited=139**.
30. Roudaut, A. Visualisation et Interaction sur dispositifs mobiles. IHM'08, doctoral consortium.
31. Bailly, G., Roudaut, A., Lecolinet, E., Nigay, L. Menu Leaf : Enrichir les menus lineaires par des gestes. IHM'08. 169-172. (acc. 44%). **Cited=6**.
32. Roudaut, A., Lecolinet, E. Un espace de classification pour l'interaction sur dispositifs mobiles. IHM'07. 99-106. (acc. 44%). **Cited=16**.
33. Roudaut, A., Coutaz J. Méta-IHM, comment contrôler son espace interactif ambiant. Ubimob'06.

SUPERVISION ACTIVITIES

1 Postdoc (Isabel Qamar, starting Dec. 2016)

6 PhD students

(To be confirmed) on designing a CAD software for virtual reality using haptic glove (starting Jan. 2017).
Helen Deeks on virtual environments for molecular modelling (started in Sept. 2016, co advised with Dr. Glowacki and Dr. Metatla)

Hyunyoung Kim on flexible and tangible controllers (started Oct. 2015, co advised with Dr. Coutrix)

Rachel Eardley on how physicality influences the user experience of digital technology (finishing Oct. 2018, co advised with Prof. Gill and Prof. Thompson).

Themis Omirou on acoustic levitation for data visualisation (finishing Nov. 2016, co advised with Prof. Subramanian).

Tom Carter on designing and creating interactive systems featuring multi-point, mid-air haptic feedback (finishing Oct. 2016, co advised with Prof. Subramanian). Tom also founded a which secured Seed Funding in 2014, raised one of the UK's largest technology A rounds in 2015 of £10.1m, as well as received a European Commission Grant of €1.49m.

Over 50 undergraduate and master students (successful completion) since 2006.

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 270 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 nd	Director Lecturer	Lectures	24	Coursework (50%), Exam
2015-2017-COMSM0009 Interactive Devices	~40	3 rd , 4 th	Director Lecturer	Workshop Lectures	24	Coursework (100%)
2015-2017-COMSM2202 Research Skills	~100	4 th	Advisor Marker	Supervision	N/A	Presentations and
2015-2017-COMSM3100 MSc Advanced Project	~40	4 th	Advisor Marker	Supervision	N/A	Presentations and
2015-2017-COMS30400 Group Project	~50	3 rd	Advisor Marker	Examination	N/A	Coursework (100%)

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

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

In addition to my fellowship I have secured direct funding from national and international sources, in particular I secured an EPSRC first grant as was ranked first.

Title	Role	Funding body	Dates	Award £
Breaking the glass: multimodal, malleable interactive mobile surfaces for hands-in	Collaborator	EPSRC EP/N013948/1	Jan. 2016 42 months	N/A
Flexible and tangible Controllers for HCI	Collaborator	ANR-15-CE23-0011-01	Oct. 2015 3 years	N/A
Returning careers' scheme	PI	University of Bristol	Jul. 2015 1 year	£7,500
Highly organic and programmable electronics	PI	Leverhulme Trust	Apr. 2015 3 years	£80,000
Reconfigurable metamorphic structures for shape changing devices	PI	EPSRC BGER - EP/K004581/1	Dec. 2012 4 months	£6,000
Automorph: Bringing Rigor to The Creation of Morphing Interactive Devices	PI	EPSRC first grant	Oct. 2016 24 months	£90,000

MAJOR COLLABORATIONS

My co-authors are globally distributed including UK (Lancaster, Swansea, Sussex), France (Grenoble, Toulouse, Paris), Denmark (Copenhagen University), USA (MIT media lab, Purdue), Canada (Toronto, Winnipeg) as well as industry (Intel in Portland, Tactual Labs in Toronto, Bell Labs in France).

INVITED PRESENTATIONS

I presented all publications at the conferences above in which I am the first author plus [4,24, 31]. In the last few years I was an invited speaker at: Microsoft Cambridge, UK. (Oct.'16); the University of Hasselt, Belgium. (Feb.'16); the University of Lancaster (Aug.'15); the ACCIS in Bristol (May.'15); the University College London. (Nov.'13); Nokia in Bristol (Sept.'13); the University of Canterbury in NZ (Feb.'13); the

FTIG in Lille France (Nov.'12); the Girl Geek Dinner in Bristol (Jul.'12); the INRIA team Potioc in Bordeaux France (Dec.'11); the Team Mint in Lille France. (Nov.'11); the BIG in Bristol (Nov.'11).

CAREER BREAKS

2014-2015 Maternity leave (8 months).

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

- Swimming, snow surfing
- Piano and creative arts (e.g. mechanics, drawing, couture).
- 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.