Research Statement

I am an Assistant Professor of Computer Science at the University of San Francisco, where I am creating the Human-Computer Interaction teaching and research programs. My research focuses on advancing Human-Computer Interaction by using computer input such as brain-computer interfaces, physiological and affective computing as well as paradigms based in cognitive and social psychology to build models of user state using machine learning. These user models provide the computer with an increased knowledge of the user, thus allowing for a more intelligent, personalized and adaptive response from the computer to the human.

This broad, application driven research agenda is intrinsically interdisciplinary. In addition to working with Rob Jacob at Tufts University, this has involved collaborations with experts in many different fields of Computer Science including visual analytics (Remco Chang, Tufts), affective computing and embodied agents (Mary Czerwinski, Microsoft Research), physiological computing (Dan Morris, Microsoft Research), computer graphics and virtual reality (Anthony Steed, UCL), biomedical engineering (Sergio Fantini, Tufts), music and engineering (Paul Lehrman, Tufts), as well as with industry product teams at Microsoft.

Professional Appointments

**August 2016 - current**
*Tenure Track Assistant Professor in Computer Science*, University of San Francisco.
Creating Human-Computer Interaction research and teaching programs focusing on adaptive, intelligent systems that respond in real-time to user cognitive and affective state.

**Jan 2012 – Spring 2016**
*Research Assistant in Computer Science*, Tufts University, Medford, MA.
Research Topic: Adaptive, intelligent user interfaces that respond to user modeling using brain sensing and paradigms in social psychology.

**June – August 2015**
*Research Intern, Microsoft Research*, Redmond, WA.
Research Topic: Engendering Trust between Humans and Embodied Agents (in conjunction with Cortana product team)

**June 2009 – Sept 2010**
*Research Assistant, University College London*, UK.
Research Topic: Brain-Computer Interfaces Using Physical and Virtual Objects

Academic Degrees

**Jan 2012 – May 2016**
*PhD in Computer Science*, Tufts University, Medford, MA.
Thesis Topic: Adaptive, intelligent user interfaces that respond to user modeling using brain sensing and paradigms in social psychology.
Adviser: Rob Jacob

**Sept 2010 – Sept 2011**
*MSc in Neuroscience*\*, King’s College, University of London*, UK.
Adviser: Marco Catani

* MSc degrees in the UK are 12 months in length. BSc degrees in the UK are 3 years in length.

Thesis: “Using a Hybrid BCI in the CAVE to Select and Move Objects”

Advisor: **Anthony Steed**


Thesis: “A Novel Brain-Computer Interface Using a Multi-Touch Surface”

Advisor: **Anthony Steed**

Select Refereed Conference Publications**


[Acceptance rate: 23% (529/2325) Best Paper Award: 1% (23/2325)]


[Acceptance rate: 20.6% (79/384)]


[Acceptance rate for 2014: 23% (26/113)]


[Acceptance rate: 22% (74/333)]


[Acceptance rate: 20% (392/1963)]


*Refereed Journal Publications***


*Book Chapter Publications*


*Workshop Papers*


*Refereed Poster Publications*


*Technical Reports and Other*


**Unlike many academic fields, conferences such as CHI and UIST are highly selective venues with full-length paper archives. Such conference proceedings are viewed as important archival venues with contributions equal to, and sometimes better than, journal papers. For an analysis of the impact of ACM conference proceedings, see Conference Paper Selectivity and Impact by Jilin Chen and Joseph A. Konstan.**
Teaching and Advising

Assistant Professor
CS 107 “Computing, Mobile Apps, and the Web”, University of San Francisco, Fall 2016.

Co-Instructor
Graduate Class “Affective Interfaces”, Tufts University COMP 250-01, Fall 2015.
Co-created, designed, and taught class with Prof Rob Jacob.

Advisor
Senior Undergraduate Thesis Advisor, Tufts University, Fall 2014 – Spring 2015.
Advisee awarded prestigious De Florez Prize in Human Engineering and highest honours for Thesis: “An Adaptive fNIRS-based BCI for Learning Music on the Piano”.

Head Teaching Assistant/Grader
“Object Oriented Programming for GUIs”, Tufts University COMP 86, Instructor: Rob Jacob, Fall 2012.
Designed and graded all homework assignments.

Head Teaching Assistant/Grader
Graded all homework and lab assignments; ran all lab sessions.

Head Teaching Assistant/Grader
“Programming Languages”, Tufts University COMP 105, Instructor: Norman Ramsey, Spring 2012.
Graded all homework assignments and quizzes. This class is well-known for being challenging.

Awards and Honors

2016 Best Paper Award ACM SIGCHI 2016 (first author)
2015 Awarded First Prize at Tufts Ignite (Grad student Competition across all Departments)
2015 Undergrad Advisee Awarded De Florez Prize in Human Engineering (1 student/year)
2015 Grace Hopper Scholarship (21% acceptance rate)
2015 CRA-W Early Career Mentoring Workshop Scholarship
2015 SPIE Travel Grant Award (PW15B, Yuksel 9319-26)
2014 Grace Hopper Scholarship (26% acceptance rate)
2010 Grant for MSc Neuroscience, King’s College London
2006 Dean’s Prize for Biological Sciences, University of Lincoln, UK (Top student in Dept)
2005 Vacation Scholarship for undergraduate research from UFAW

Professional Academic Service

Program Committee: Associate Chair for ACM SIGCHI 2017 Program Committee
Reviewing:

• ACM Transactions on Computer-Human Interaction (TOCHI) 2014, 2015
• ACM Transactions on Computer Supported Cooperative Work (CSCW) 2015
• IEEE Computer 2015
• Int. Journal of Human-Computer Studies (IJHCS) 2015
• Int. Journal of Computer Assisted Radiology and Surgery (IJCARS) 2015
• Physiological Computing Systems (PhyCS) 2014

Invited Talks


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Professional Service for Diversity

- Founder and President of Graduate Women in CS Group - meet weekly
- Applied for funding for Women in CS from Diversity Fund Committee
- Given Technical Talks at All-Women’s Colleges and at Grace Hopper
- Procured Funding to students to Lesbians Who Tech Conference 2016
- Served on Graduate Panel in oSTEM chapter (out in STEM)
- Currently Reviving ACM-W Chapter
- Working with Two Faculty Members to Organize Speakers for Women in CS

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Selected Press

**Feb 2016**  **This Brain Reading Tool can Teach You a New Skill in No Time** Fast Company. [http://www.fastcompany.com/3056869/this-brain-reading-tool-can-teach-you-a-new-skill-in-no-time/](http://www.fastcompany.com/3056869/this-brain-reading-tool-can-teach-you-a-new-skill-in-no-time/)


March 2014 Warning: your brain is overheating. The Times (London). http://www.thetimes.co.uk/tto/science/article4023140.ece


References

Robert Jacob, Ph.D. Professor Member of ACM CHI Academy Human-Computer Interaction Lab Department of Computer Science Tufts University 161 College Avenue Medford, MA 02155 jacob@cs.tufts.edu

Mary Czerwinski, Ph.D. Research Manager, Principal Researcher Member of ACM CHI Academy ACM Distinguished Scientist ACM Lifetime Service Award Microsoft Research One Microsoft Way Redmond, WA 98052 marycz@microsoft.com

Remco Chang, Ph.D. Associate Professor Visual Analytics Lab Department of Computer Science Tufts University 161 College Avenue Medford, MA 02155 remco@cs.tufts.edu

Anthony Steed, Ph.D. Professor Virtual Environments & Computer Graphics Group Department of Computer Science University College London 66-72 Gower Street, Room 4.13 London WC1E 6BT, UK A.Steed@ucl.ac.uk

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