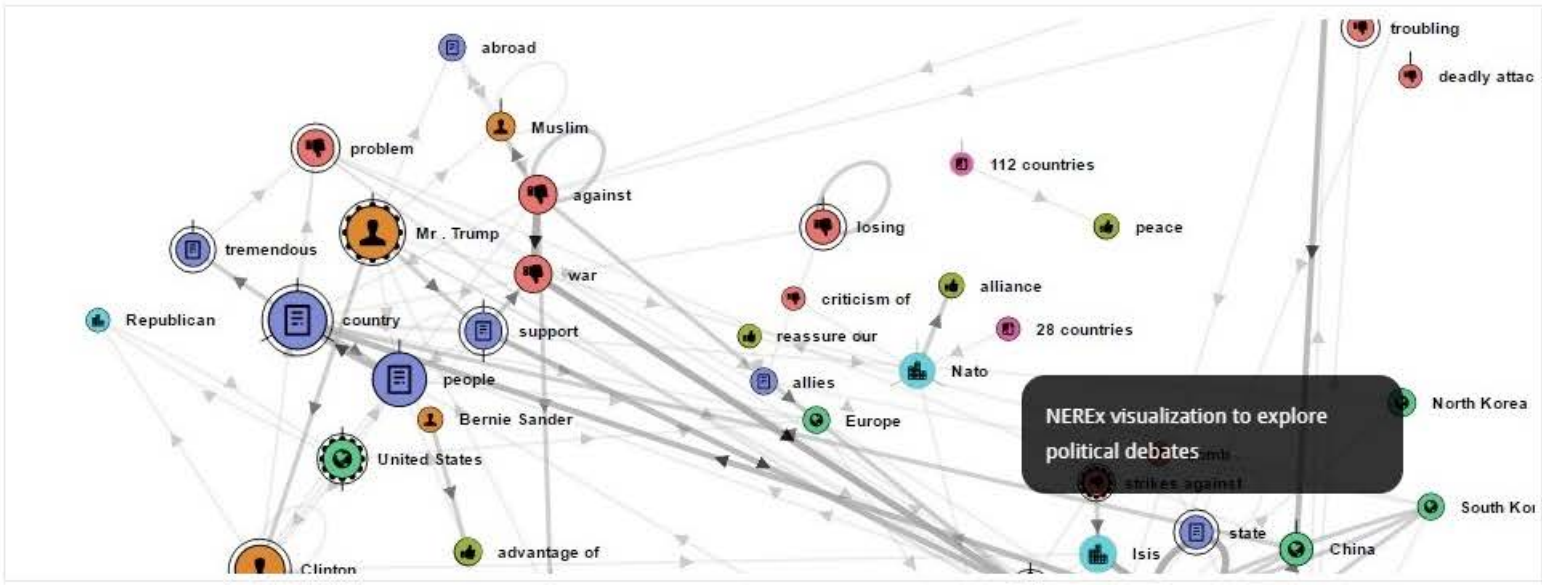
Landing Pages



OCT 18

Vialab contributions to IEEE VIS 2017

ENTRIES / FEATURED

Vialab members had several contributions to the IEEE VIS conference in Phoenix this month. Our contributions also represented the extent of the lab's collaborations, from France, Scotland, Germany, Canada, and the USA. Menna El-Assady (also affiliated with University of Konstanz) presented our paper on progressive learning of topic model parameters, for which we received an [...]

Read More»

posted by ADMIN

JUN 14

Vialab member Menna El-Assady presented 'NEREx: Named-Entity Relationship Exploration in Multi-Party Conversations' at EuroVis 2017 in Barcelona.

We are pleased to announce that this month, a Vialab member has presented a new paper. "NEREx:[...]

Read More»

MAR 17

Funded PhD Position in Explainable Artificial Intelligence

Funded PhD Position in Interfaces for Explainable Artificial Intelligence When an artificial intelli[...]

Read More»

SOCIAL MEDIA

Christopher Collins
@ChrisNF

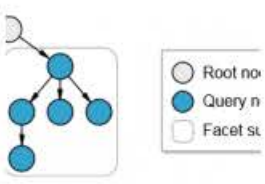
@HrimMehta and Mariana Shimabukuro did a great job presenting posters on data tours and abbreviating long labels at #ieeevis - see vialab.ca

Oct 7, 2017

Christopher Collins
@ChrisNF

Congrats @manunna_91 and UOIT/Konstanz team on an honourable mention award for best

Research Projects



Sayamindu Dasgupta

Moore/Sloan & WRF Innovation in Data Science Postdoctoral Fellow

University of Washington

Curriculum Vitæ
Research Statement
Teaching Statement

I am a postdoctoral fellow with the eScience Institute at the University of Washington, where I am also affiliated with the Community Data Science Collective and the Human-Centered Data Science Lab.

My research focuses on *developing tools to support data science education for youth* and on using *data science in the service of education*. I design, build, and study systems that engage young people in doing data science. I also use (mostly) quantitative methods to advance theories of how young people learn.

I received my doctorate degree from MIT in 2016, where I was a part of the Lifelong Kindergarten Research Group, and my work was centered around the Scratch programming language and online community.

My research has received recognition and awards at a number of human-computer interaction conferences (CHI, CSCW, VL/HCC, IDC). In 2014, I was selected as a member of the Forbes 30 under 30 list for Education.

Recent updates

CHI Program Committee

I'm serving on the CHI 2018 PC as an Associate Chair in the "specific application areas" subcommittee.

September 2017

Blog post on L@S paper

We wrote a blog post about our Learning@Scale paper on learning to code in one's own language.

June 2017

CHI Honorable Mention

Our systems paper on kids programming with their social media and learning data got a honorable mention award for CHI 2017.

February 2017

Publications

Peer-reviewed publications

Scratch Community Blocks: Supporting Children as Data Scientists

Sayamindu Dasgupta and Benjamin Mako Hill
Honorable mention ACM CHI 2017 [ACM DL][Blog Post]

Youth Perspectives on Critical Data Literacies
Samantha Hautea, Sayamindu Dasgupta, and Benjamin Mako Hill
ACM CHI 2017 [ACM DL][Blog Post]

Learning to Code in Localized Programming Languages
Sayamindu Dasgupta and Benjamin Mako Hill
ACM Conference on Learning @ Scale (L@S) 2017 [ACM DL][Blog Post]

Children's Civic Engagement in the Scratch Online Community
Ricarose Roque, Sayamindu Dasgupta, and Sasha Costanza-Chock
Social Sciences. 2016; 5(4):55 [MDPI]

Skill Progression in Scratch Revisited
J. Nathan Matias, Sayamindu Dasgupta, and Benjamin Mako Hill
ACM CHI 2016 [ACM DL]

Remixing as a Pathway to Computational Thinking

Sayamindu Dasgupta, William Hale, Andrés Monroy-Hernández, and Benjamin Mako Hill
Honorable mention ACM CSCW 2016 [ACM DL][Blog Post]

Extending Scratch: New Pathways into Programming

Sayamindu Dasgupta, Shane M. Clements, Abdulrahman Y. idlbi, Chris Willis-Ford, and Mitchel Resnick
Best short paper IEEE VL/HCC 2015 [pre-print PDF][IEEE DL]

Engaging Novices in Programming, Experimenting, and Learning with Data

We're the comp.social lab at Georgia Tech.
We build and study social media.

BYPASSING WEIBO CENSORSHIP
ICWSM 2015 PAPER

Here, we show that it is possible to computationally generate homophone substitutions for banned terms on Sina Weibo, a technique that is difficult for the censorship apparatus to defend against.
read paper † (photo credit)

PIGGYBACK PROTOTYPING
CHI 2015 PAPER

A 6-stage prototyping mechanism for designing new social computing systems on top of existing ones. This allows a focus on what people do on a system rather than how to attract people to it.
read paper † (photo credit)

CREDBANK
ICWSM 2015 PAPER

In this paper we present CREDBANK, a corpus of tweets, topics, events and associated human credibility judgements based on the real-time tracking of events on Twitter.
read paper † (photo credit)

MODELING FACTUALITY
ACL 2014 PAPER

We obtain annotations of perceived certainty of quoted statements in Twitter. We find that readers are influenced by linguistic framing devices, not other factors, e.g. sources, journalist.
read paper † (photo credit)

HOME
PAPERS
PEOPLE
COURSES

Us on Twitter
Our code and data

The comp.social lab is led by Eric Gilbert, an Assistant Professor in Georgia Tech's School of Interactive Computing. The lab focuses on the design and analysis of social media. We like puppies, mixed methods and new students (particularly MS).

Social Technologies Lab

We design, build, and study systems that support social interactions in online and physical spaces

FUTURE INTERFACES GROUP

Carnegie Mellon University

The Future Interfaces Group (FIG) is an interdisciplinary research laboratory within the Human-Computer Interaction Institute at Carnegie Mellon University. We create new sensing and interface technologies that aim to make interactions between humans and computers more fluid, intuitive, and powerful. These efforts often lie in emerging use modalities, such as mobile computing, touch interfaces and gestural interaction.

LATEST RESEARCH

Zensors: Adaptive, Rapidly Deployable, Human-Intelligent Sensor Feeds

The promise of "smart" homes, workplaces, schools, and other environments has long been championed. Unattractive, however, has been the cost to run wires and install sensors. More critically, raw sensor data tends not to align with the types of questions humans wish to ask, e.g., do I need to restock my pantry? In response, we built Zensors, a new sensing approach that fuses real-time human intelligence from online crowd workers with automatic approaches to provide robust, adaptive, and readily deployable intelligent sensors. With Zensors, users can go from question to live sensor feed in less than 60 seconds. Through our API, Zensors can enable a variety of rich end-user applications and moves us closer to the vision of responsive, intelligent environments. Published at CHI 2015.

Acoustruments: Passive, Acoustically-Driven, Interactive Controls for Handheld Devices

Acoustrument are low-cost, passive, and powerless mechanisms, made from plastic, that can bring rich, tangible functionality to handheld devices. Through a structured exploration, we identified an expansive vocabulary of design primitives, providing building blocks for the construction of tangible interfaces utilizing smartphones' existing audio functionality. By combining design primitives, familiar physical mechanisms can all be constructed. On top of these, we can create end-user applications with rich, tangible interactive functionalities. Acoustruments adds a new method to the toolbox HCI practitioners and researchers can draw upon, while introducing a cheap and passive method for adding interactive controls to consumer products. Published at CHI 2015.

Skin Buttons: Cheap, Small, Low-Power and Clickable Fixed-Icon Laser Projections

Smartwatches are a promising new interactive platform, but their small size makes even basic actions cumbersome. Hence, there is a great need for approaches that expand the interactive envelope around smartwatches, allowing human input to escape the small physical confines of the device. We propose using tiny projectors integrated into the smart- watch to render icons on the user's skin. These icons can be made touch sensitive, significantly expanding the interactive region without increasing device size. Through a series of experiments, we show that these "skin buttons" can have high touch accuracy and recognizability, while being low cost and power-efficient. Published at UIST 2014.

Air+Touch: Interweaving Touch & In-Air Gestures

Air+Touch is a new class of interactions that interweave touch events with in-air gestures, offering a unified input modality with expressiveness greater than each input modality alone. We demonstrate how air and touch are highly complementary: touch is used to designate targets and segment in-air gestures, while in-air gestures add expressivity to touch events. For example, a user can draw a circle in the air and tap to trigger a context menu, do a finger 'high jump' between two touches to select a region of text, or drag and in-air 'pigtail' to copy text. Published at UIST 2014.

Toffee: Enabling Ad Hoc, Around-Device Interaction with Acoustic Time-of-Arrival Correlation

Toffee is a sensing approach that extends touch interaction beyond the small confines of a mobile device and onto ad hoc adjacent surfaces, most notably tabletops. This is achieved using a novel application of acoustic time differences of arrival (TDOA) correlation. Our approach requires only a hard tabletop and gravity – the latter acoustically couples mobile devices to surfaces. We conducted an evaluation, which shows that Toffee can accurately resolve the bearings of touch events (mean error of 4.3° with a laptop prototype). This enables radial interactions in an area many times larger than a mobile device; for example, virtual buttons that lie above, below and to the left and right. Published at MobileHCI 2014.

Probabilistic Palm Rejection Using Spatiotemporal Touch Features and Iterative Classification

Tablet computers are often called upon to emulate classical pen-and-paper input. However, touchscreens typically lack the means to distinguish between legitimate stylus and finger touches and touches with the palm or other parts of the hand. This forces users to rest their palms elsewhere or hover above the screen, resulting in ergonomic and usability problems. We present a probabilistic touch filtering approach that uses the temporal evolution of touch contacts to reject palms. Our system improves upon previous approaches, reducing accidental palm inputs to 0.016 per pen stroke, while correctly passing 98% of stylus inputs. Published at CHI 2014.

Expanding the Input Expressivity of Smartwatches with Mechanical Pan, Twist, Tilt and Click

We propose using the face of a smartwatch as a multi-degree-of-freedom mechanical interface. This enables rich interaction without occluding the screen with fingers, and can operate in concert with touch interaction and physical buttons. We built a proof-of-concept smartwatch that supports continuous 2D panning and twist, as well as binary tilt and click. To illustrate the potential of our approach, we developed a series of example applications, many of which are cumbersome – or even impossible – on today's smartwatch devices. Published at CHI 2014.

TouchTools: Leveraging Familiarity and Skill with Physical Tools to Augment Touch Interaction

The average person can skillfully manipulate a plethora of tools, from hammers to tweezers. However, despite this remarkable dexterity, gestures on today's touch devices are simplistic, relying primarily on the chording of fingers: one-finger pan, two-finger pinch, four-finger swipe and similar. We propose that touch gesture design be inspired by the manipulation of physical tools from the real world. In this way, we can leverage user familiarity and fluency with such tools to build a rich set of gestures

FUTURE INTERFACES GROUP

The Future Interfaces Group (FIG) is an interdisciplinary research lab within the Human-Computer Interaction Institute at Carnegie Mellon University. We create new sensing and interface technologies that aim to make interactions between humans and computers more fluid, intuitive and powerful. These efforts often lie in emerging use modalities, such as wearable computing, touch interaction and gestural interfaces.

SKINTRACK (2016)

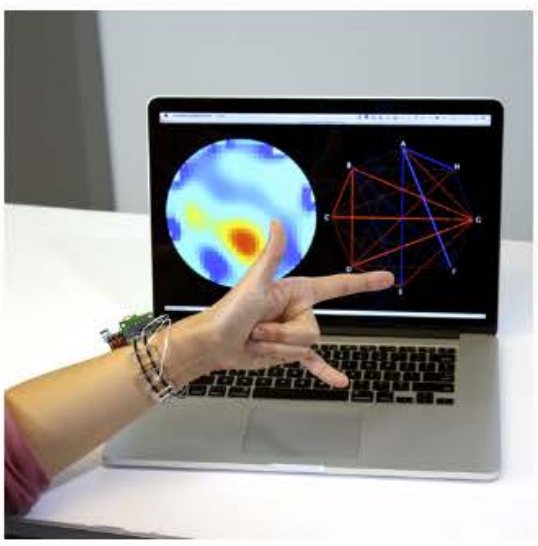
SWEEPSENSE (2016)

FINGERPOSE (2015)

CAPAUTH (2015)

GAZE+GESTURE (2015)

EM-SENSE (2015)



TOMO (2015)

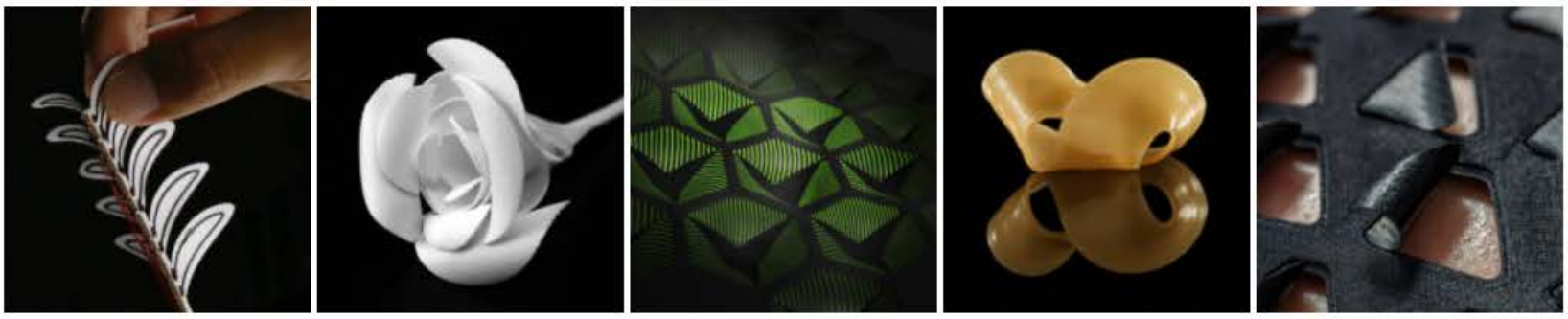
3D-PRINTED HAIR (2015)

ZENSORS (2015)

Morphing Matter Lab

Morphing Matter lab develops materials, tools, and applications of adaptive, dynamic and intelligent morphing matter from nano to macro scales. We turn fictional future into the present.

Projects



News

Prof. Lining Yao speaks at MRS Fall 2017, Boston 11/28/2017

Lining Yao will be speaking at the MRS Fall 2017. More informaiton will become available soon.link

New demos presented at CMU 50th Anniversary Founders Exposition, CMU 11/09/2017

Our new projects are shown at CMU 50th Anniversary Founders Exposition, CMU. More information will become available soon.

Prof. Lining Yao gave talks at Cornell, Syracuse, UC Berkeley and Temple University. 11/02/2017

Recently Prof. Lining Yao was invited to give a series of talks at Cornell University (Human Ecology), Syracuse University (Aerospace and Mechanical Engineering), UC Berkeley (Architecture) and Temple University (Architecture).

New demos shown at Computational Design Symposium, CMU 10/07/2017

Our new projects are shown at Computational Design Symposium, CMU. More information will become available soon. link

Prof. Lining Yao speaks at "Meet the Media Guru" in Milan, Italy 07/09/2017

Lining Yao will be speaking at the venue "Meet the Media Guru" in Milan. More informaiton will become available soon.link

Rosie Lee

We are a hybrid creative agency. With expertise in retail design, branding and digital, we deliver the mould-breaking ideas brands need to flourish.

Work Europe

Nike & JD Sports
Air Max 2016 European Retail Launch

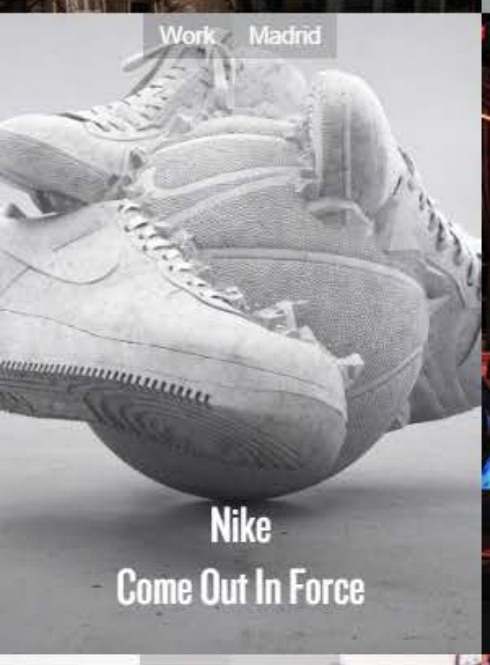
Launch of Nike's Air Max Con 2016

News Moscow

Launch of new specialty sneaker store DRoP!

Punkt.
MP 01 Mobile Phone Launch

A3 Retail Group
Stride Multi-Brand Running Store



Nike
Come Out In Force

Activision
Call of Duty Black Ops II Launch Event

John Tree
Visual Identity & Website

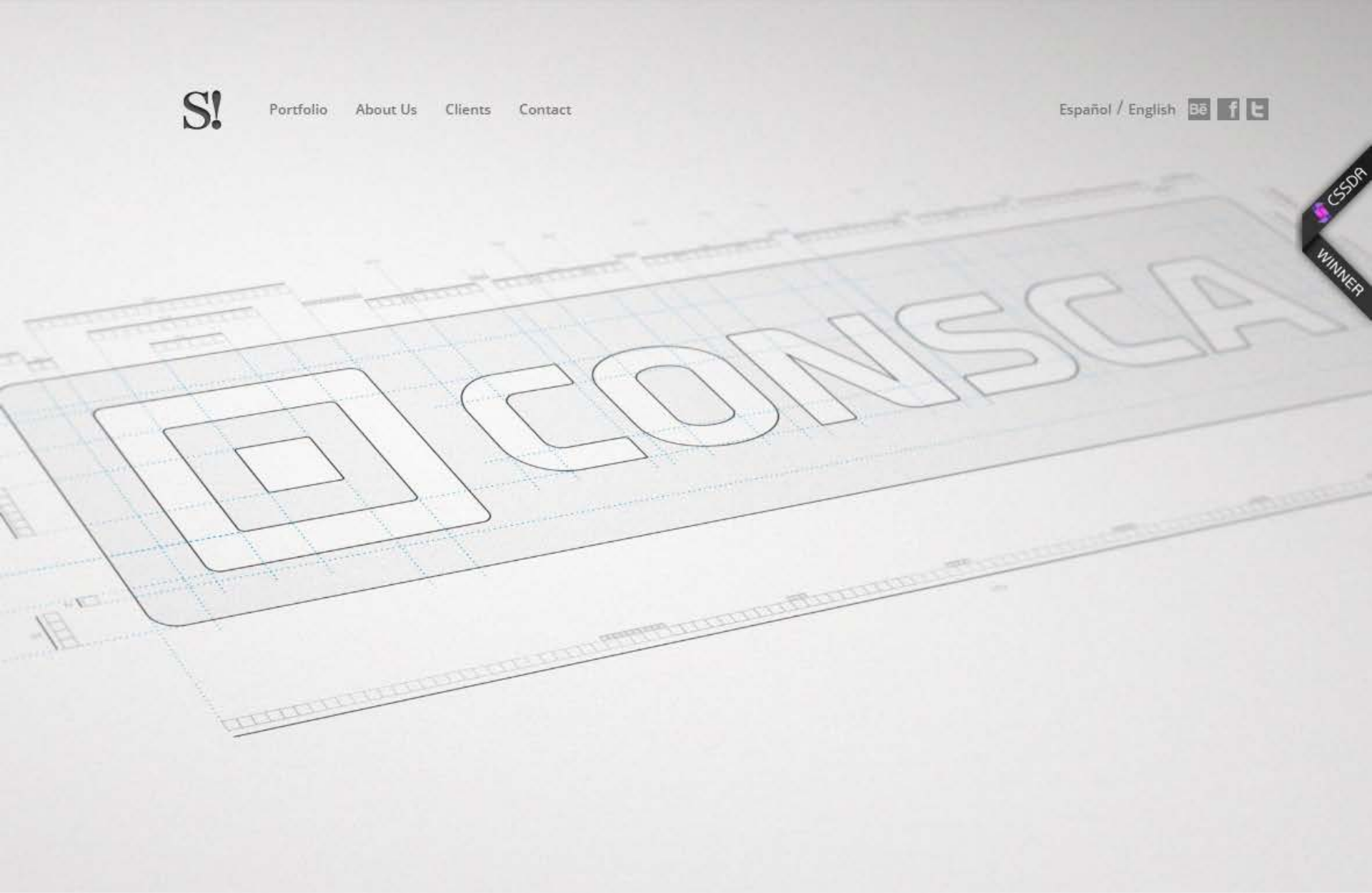
Nike
Air Max Day 2015

Nike
Redesign of UK Headquarters

Somerset Art Weeks
Migration

Uniqlo
Ultra Light Down Retail Campaign

Infinite Objects
Brand Identity & Website Design


CONSCA
CSSDA
WINNER

Portfolio


JERRYTHOMAS
JERRYTHOMAS
MAS
JERRYTHOMAS
JERRYTHOMAS
JERRYTHOMAS
JERRYTHOMAS
Menorca
Menorca
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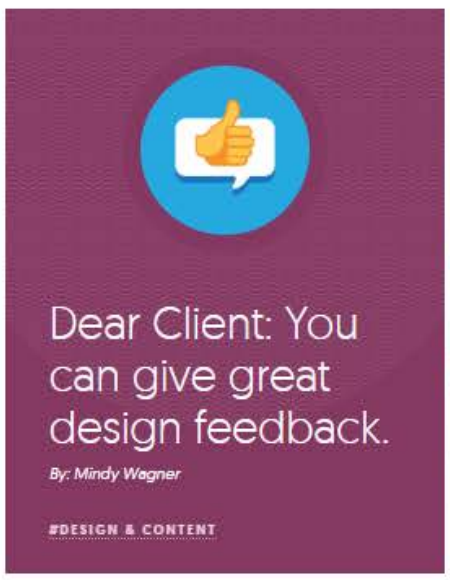
Menorca

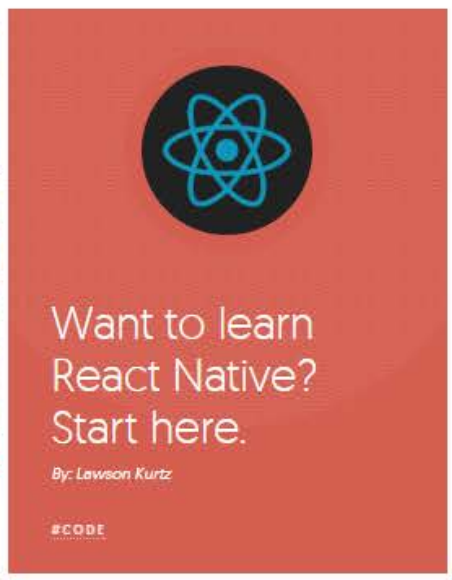
VIGET IS

Ideas + Execution

We are 64 people in 3 offices with a 16-year history of making award-winning digital products, experiences, and tools that inspire customers, extend capabilities, and advance business. Happily independent since 1999.

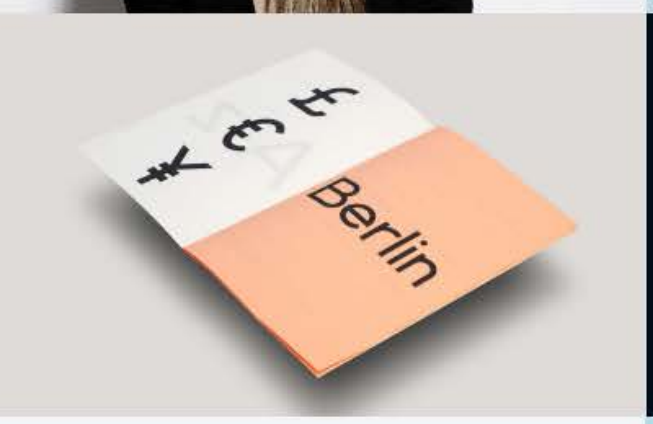
WHAT WE OFFER →





Hi! I am John Doe, a Designer based out of *London* UK and I design *beautiful & functional* websites and mobile applications

See my works below, learn more about me & get in touch.



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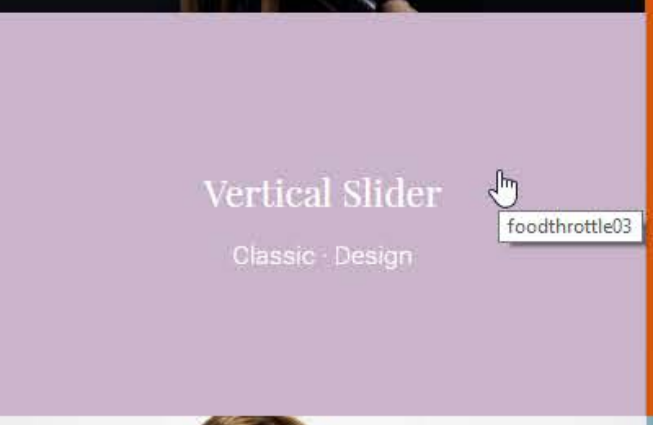

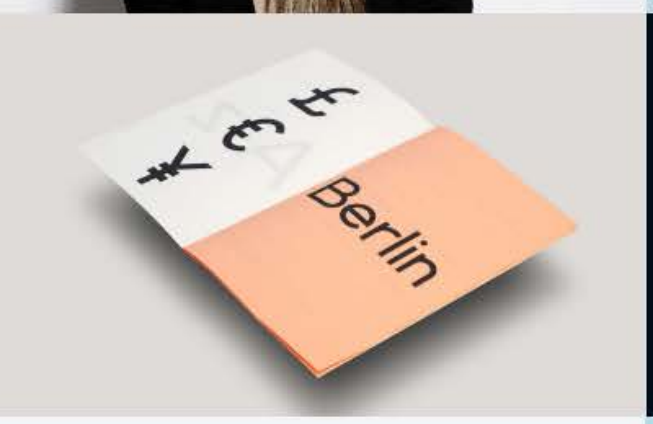











LEAVE

MONIN


ELECTRIC
AGENCY TEMPLATE

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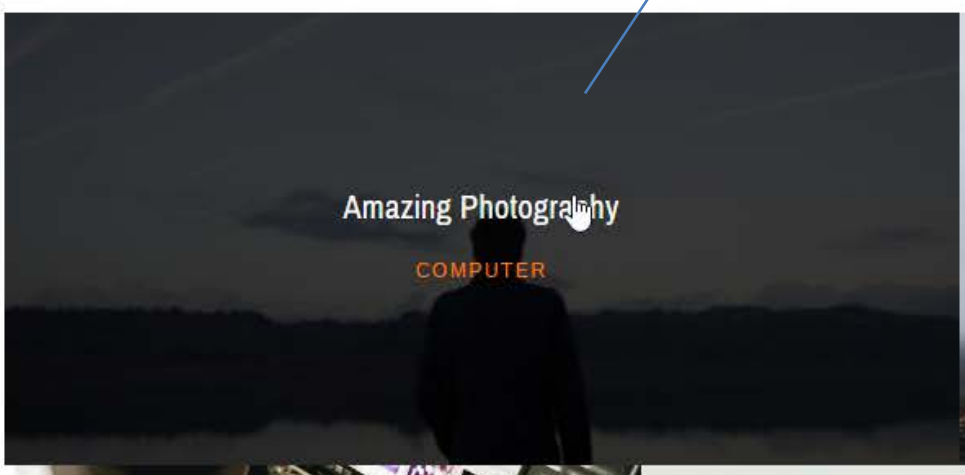
Has cool mouse over animation effect



STANFORD HCI GROUP

COURSES PEOPLE RESEARCH CONNECT DIRECTIONS

Search Go

PEOPLE

Maneesh Agrawala · Michael Bernstein · James Landay · Stu Card · Terry Winograd · Affiliated Faculty · Students · Visitors · Alumni

CO-CONSPIRATORS

d.school · Liberation Tech · Graphics · Visualization · Project Open Mobile Internet · MobiSocial · Lytics Lab

SEMINAR SUBSCRIBE

FRIDAYS 12:30-2:20PM · FREE & OPEN TO THE PUBLIC

1 Apr **Ivan Poupyrev**

Making Everything Interactive or Why Physical World is The Next Frontier for Interaction Technology

8 Apr **Tanzeem Choudhury**

Tracking behavioral symptoms of mental health and delivering personalized interventions using smartphones and wearables

15 Apr **Julie Kientz**

Understanding and Reducing the User Burdens in Applications for Health and Families

22 Apr **Eric Gilbert**

WHAT'S HAPPENING

- Ge Wang awarded Guggenheim Fellowship
- Empath wins best paper at CHI; Augur wins honorable mention
- Maneesh Agrawala joins the CS HCI faculty
- Jeff Hancock joins the Communications faculty
- Soylent in the Communications of the ACM [video]
- Sean Follmer joins the ME faculty
- Five best paper honorable mentions at CHI 2015
- Flash Teams wins Best Paper at UIST 2014

PAPERS

CHI 2016

Pay It Backward: Per-Task Payments on Crowdsourcing Platforms Reduce Productivity
Kazushi Ikeda, Michael Bernstein

The Web Is Flat: The Inflation of Uncommon Experiences Online
Danaë Metaxa-Kakavouli, Gili Rusak, Jaime Teevan, Michael Bernstein *Best Paper*

Atelier: Repurposing Expert Crowdsourcing Tasks as Micro-internships
Ryo Suzuki, Niloufar Salehi, Michelle S. Lam, Juan C. Marroquin, Michael S. Bernstein

Empath: Understanding Topic Signals in Large-Scale Text
Ethan Fast, Binbin Chen, Michael Bernstein PROJECT *Best Paper*

Augur: Mining Human Behaviors from Fiction to Power Interactive Systems
Ethan Fast, William McGrath, Pranav Rajpurkar, Michael Bernstein *Honorable Mention*

Embracing Error to Enable Rapid Crowdsourcing
Ranjay Krishna, Kenji Hata, Stephanie Chen, Joshua Kravitz, David A. Shamma, Li Fei-Fei, Michael Bernstein

ActiVibe: Design and Evaluation of Vibrations for Progress Monitoring
Jessica R. Cauchard, Janette L. Cheng, Thomas Pietrzak, James A. Landay

L@S 2016

Effects of In-Video Quizzes on MOOC Lecture Viewing
Geza Kovacs

HRI 2016

Emotion Encoding in Human-Drone Interaction
Jessica Rebecca Cauchard, Kevin Y. Zhai, Marco Spadafora, and James A. Landay

TWEETS

Tweets by @StanfordHCI

Stanford HCI group Retweeted

Jacob O. Wobbrock @wobbrockjo
Good seeing old friends at #chi2016. @marissamayer @StanfordHCI

Embed View on Twitter

Our research is made possible by the generous financial support of the National Science Foundation, Hasso Plattner Research Program, and Media X.

Pub Listings

comp.social papers

« home

2016

#thyghgapp: Instagram Content Moderation and Lexical Variation in Pro-Eating Disorder Communities
Chancellor, Pater, Clear, Gilbert & De Choudhury | CSCW 2016

We present a quantitative study investigating pro-ED communities on Instagram in the aftermath of moderation and find that non-standard lexical variations of moderated tags are used to circumvent restrictions.

2015

Algorithmically Bypassing Censorship on Sina Weibo with Nondeterministic Homophone Substitutions
Hiruncharoenvate, Lin & Gilbert | ICWSM 2015

Here, we show that it is possible to computationally generate homophone substitutions for banned terms on Sina Weibo, a technique that is difficult for the censorship apparatus to defend against.

Why We Filter Our Photos and How It Impacts Engagement
Bakhshi, Shamma, Kennedy & Gilbert | ICWSM 2015

We present a large-scale data analysis and in-depth interviews to understand filter-work. We find many use cases for filters, and that filtered photos are much more likely to be viewed and commented on.

CREDBANK: A Large-scale Social Media Corpus With Associated Credibility Annotations
Tanushree Mitra & Eric Gilbert | ICWSM 2015
supplement: data set

In this paper we present CREDBANK, a corpus of tweets, topics, events and associated human credibility judgements based on the real-time tracking of events on Twitter.

Open Book: A Socially-inspired Cloaking Technique that Uses Lexical Abstraction to Transform Messages
Eric Gilbert | CHI 2015
best paper honorable mention

We introduce a technique called Open Book designed to address encryption's social usability problems. It uses data mining and NLP to make messages vaguer than the originals.

Comparing Person– and Process-centric Strategies for Obtaining Quality Data on Amazon Mechanical Turk
Tanushree Mitra, C.J. Hutto & Gilbert | CHI 2015
best paper honorable mention

We measure the efficacy of selected strategies for obtaining high quality data annotations from non-experts. Our results point to the advantages of person-oriented strategies over process-oriented strategies.

In-group Questions and Out-group Answers: Crowdsourcing Daily Living Advice for Individuals with Autism
Hong, Gilbert, Abowd & Arriaga | CHI 2015

We propose and evaluate a crowdsourcing approach to better support people with autism by offering rapid, concise, and socially appropriate coping strategies without compromising emotional support.

Piggyback Prototyping: Using Existing, Large-Scale Social Computing Systems To Prototype New Ones
Catherine Grevet & Eric Gilbert | CHI 2015
best paper honorable mention

We propose a 6-stage prototyping mechanism for designing new social computing systems on top of existing ones. This allows a focus on what people do on a system rather than how to attract people to it.

Red, Purple and Pink: The Colors of Diffusion on Pinterest
Saeideh Bakshi & Eric Gilbert | PLOS One 2015
press: The Atlantic

We investigate whether there is link between color and diffusion. We find that color significantly impacts the diffusion of images and adoption of content on image sharing communities such as Pinterest.

2014

Modeling Factuality Judgments in Social Media Text
Soni, Mitra, Gilbert & Eisenstein | ACL 2014

We obtain annotations of perceived certainty of quoted statements in Twitter. We find that readers are influenced by linguistic framing devices and do not consider other factors, e.g. sources, journalist.

Computing and Building Around Tie Strength in Social Media
Eric Gilbert | Foundations & Trends in HCI

This work presents a long-arc view of inferring tie strength via social media traces, and how we can alter interfaces to take advantage of it. Part of Eric's dissertation work, and set in the Twitter of 2010.

VADER: A Parsimonious Rule-based Model for Sentiment Analysis of Social Media Text
CJ Hutto & Eric Gilbert | ICWSM 2014
supplement: data set code (github) python package

We present VADER, a simple rule-based model for general sentiment analysis, and compare its effectiveness to eleven typical state-of-practice benchmarks. We see it as a bigger and badder LIWC.

Faces Engage Us: Photos with Faces Attract More Likes and Comments on Instagram
Saeideh Bakhshi, David A. Shamma & Eric Gilbert | CHI 2014
press: Mashable

This work finds that photos with human faces are 38% more likely to receive likes and 32% more likely to receive comments on Instagram, regardless of age and gender of the faces.

What If We Ask A Different Question?: Social Inferences Create Product Ratings Faster
Eric Gilbert | CHI 2014

This paper studies eliciting product reviews as *social inferences* (i.e., "How do you think other people will rate this product?"). I find that they substantially reduce variance.

Overload is Overloaded: Email in the Age of Gmail
Grevet, Choi, Kumar & Gilbert | CHI 2014

We find that email overload, both in terms of volume and of status, is still a problem today. While work email tends to be status overloaded, personal

Mor recently gave two different workshop [illegible] conference on Data Mining (ICDM 2015) in Atlantic City on November 14-17.

attention from others and the value in getting that attention. To that end, we harness machine learning methods as well as language and statistical modeling to analyze signals of human attention as they occurs naturally outside of lab settings.

Publications

Raz Schwarz, Mor Naaman, Rannie Teodoro. Editorial Algorithms: Using Social Media to Discover and Report Local News. In Proceedings, ACM International Conference on Web Logs and Social Media. (ICWSM 2015), May 2015, Cambridge, England

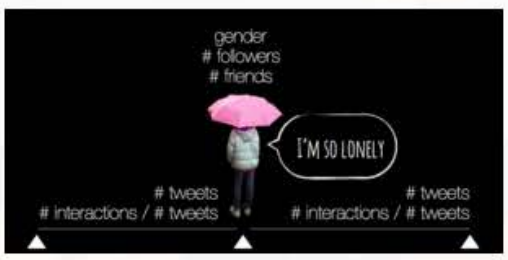
PDF

Minsu Park, Ingmar Weber, Mor Naaman, Sarah Vieweg. Understanding Musical Diversity via Online Social Media. In Proceedings, ACM International Conference on Web Logs and Social Media. (ICWSM 2015), May 2015, Cambridge, England

PDF

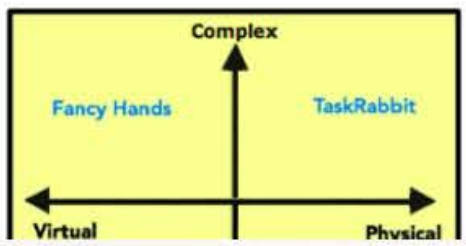
David Flatow, Mor Naaman, Ke Eddie Xie, Yana Volkovich, Yaron Kanza. On the Accuracy of Hyper-local Geotagging of Social Media Content. In Proceedings, the ACM International Conference on Web Search and Data Mining (WSDM 2015). March 2015, Shanghai, China.

PDF



Funda Kivran-Swaine, Jeremy Ting, Jed Richards Brubaker, Rannie Teodoro, Mor Naaman.Understanding Loneliness in Social Awareness Streams: Expressions and Responses. Eighth International AAAI Conference on Weblogs and Social Media. (ICWSM 2014)

PDF

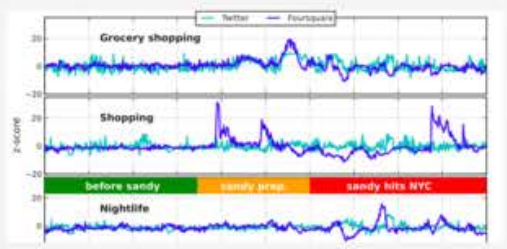


Rannie Teodoro, Pinar Ozturk, Mor Naaman, Winter Mason, and Janne Lindqvist. The Motivations and Experiences of the On-demand Mobile Workforce. In Proceedings, ACM Conference on Computer Supported Cooperative Work. (CSCW 2014), February 2014

PDF

Jessa Lingel, Mor Naaman and danah boyd. City, Self, Network: Transnational Migrants and Online Identity Work. In Proceedings, ACM Conference on Computer Supported Cooperative Work. (CSCW 2014), February 2014

PDF



Grinberg, Nir, Mor Naaman, Blake Shaw, and Gilad Lotan. "Extracting Diurnal Patterns of Real World Activity from Social Media." In ICWSM. 2013.

PDF

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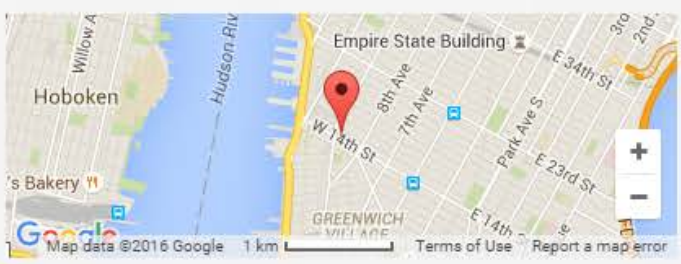

We're located at Cornell Tech. Come by and say hi!

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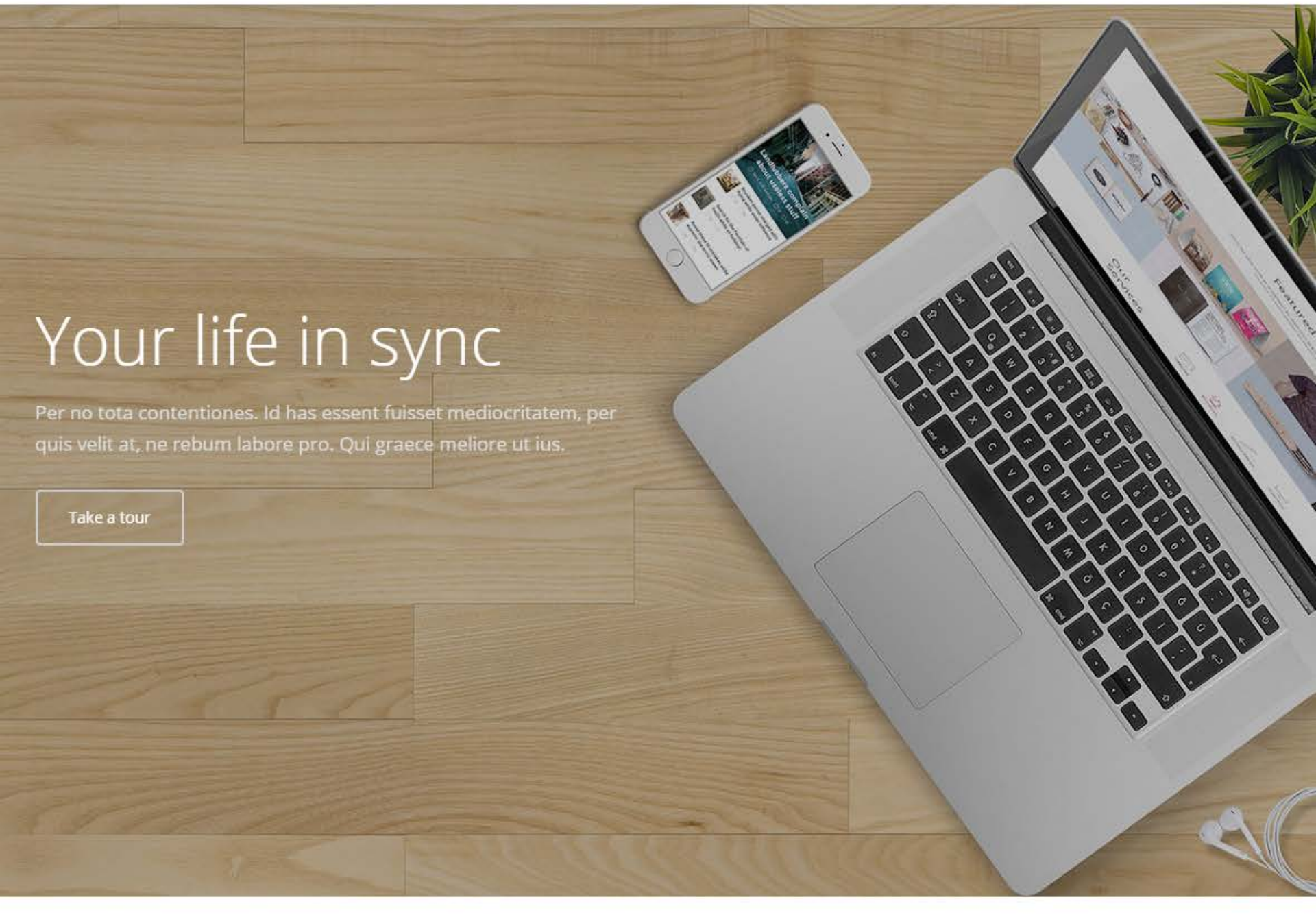
New York, NY



Your life in sync

Per no tota contentiones. Id has essent fuisset mediocritatem, per quis velit at, ne rebum labore pro. Qui graece meliore ut ius.

Take a tour

Welcome to revolutionary time tracking and event management.

Welcome to revolutionary time tracking and event management. Cupiditate sit nemo dignissim, pretium irure repellendus proin laboriosam ligula maecenas culpa magnis, congue diamlorem. Convallis perspiciatis quisquemod nihil vivamur.

Manage everything in one place

Lorem epsum dollar eveniet nec hendrerit, aliquid inceptos aliquip iure magnam nam donec! Varius,

Publications

Harnessing the Hygroscopic and Biofluorescent Behaviors of Genetically-Tractable Microbial Cells to Design Biohybrid Wearables

Wen Wang, Lining Yao, Chin-Yi Cheng, Teng Zhang, Hiroshi Atsumi, Luda Wang, Guanyun Wang, Oksana Anilionyte, Helene Steiner, Jifei Ou, Kang Zhou, Chris Wawrousek, Katherine Petrecca, Angela M. Belcher, Rohit Karnik, Xuanhe Zhao, Daniel I. C. Wang, Hiroshi Ishii.

Abstract: Cells' biomechanical responses to external stimuli have been intensively studied but rarely implemented into devic…

PDF | DOI | Details

Transformative Appetite: Shape Changing Food Transforms from 2D to 3D by Water Interaction through Cooking.

Wen Wang*, Lining Yao*, Teng Zhang, Chin-Yi Cheng, Daniel Levine and Hiroshi Ishii. (* Contributed Equally)

Abstract: We developed a concept of transformative appetite, where edible 2D films made of common food materials (prote…

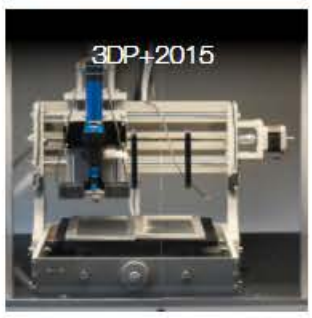
PDF | DOI | Video | Details
MIT News

xPrint: A Modularized Liquid Printer for Smart Materials Deposition.

Guanyun Wang, Lining Yao, Wen Wang, Jifei Ou, Chin-Yi Cheng, Hiroshi Ishii.

Abstract: To meet the increasing requirements of HCI researchers who are looking into using liquid-based materials (e.g.,…

PDF | DOI | Video | Details
3dprint.com

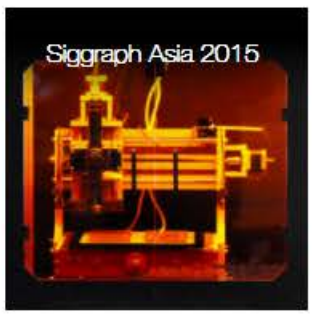


bioPrint: A Liquid Deposition Printing System for Natural Actuators.

Lining Yao, Jifei Ou, Guanyun Wang, Chin-Yi Cheng, Wen Wang, Helene Steiner, and Hiroshi Ishii.

Abstract: This article presents a digital fabrication platform for depositing solution-based natural stimuli-responsive material …

PDF | DOI | Details

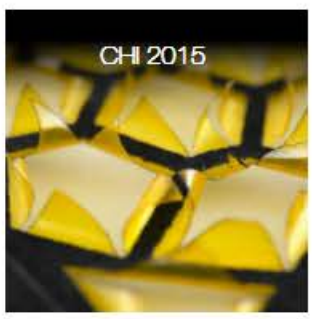


xPrint: From Design to Fabrication for Shape Changing Interfaces by Printing Solution Materials.

Guanyun Wang, Lining Yao, Wen Wang, Jifei Ou, Chin-Yi Cheng, Hiroshi Ishii.

Abstract: Intensive research regarding shape changing interfaces using novel stimuli-responsive materials have been…

PDF | DOI | Video | Details
3dprint.com



bioLogic: Natto Cells as Nanoactuators for Shape Changing Interfaces.

Lining Yao, Jifei Ou, Chin-Yi Cheng, Helene Steiner, Wen Wang, Guanyun Wang, and Hiroshi Ishii.

Abstract: Nature has engineered its own actuators, as well as the efficient material composition, geometry and structure to…

PDF | DOI | Video 1 | Video 2 | Video 3 | Details
2015 CHI Full Paper | Best Talk Award | Best Paper Nominee
MIT News | Wired | Wired UK | Discovery News | Dezeen | YAHOO! News UK | CNBC | Fast Company...

jamSheets: thin interfaces with tunable stiffness enabled by layer jamming

Jifei Ou, Lining Yao, Daniel Tauber, Jürgen Steimle, Ryuma Niiyama, and Hiroshi Ishii.

Abstract: This works introduces layer jamming as an enabling technology for designing deformable, stiffness-tunable, thin…

PDF | DOI | Video | Details
Core 77 Community Choice Prize | iF Design Award | IxDA Interaction Award finalist

PneUI: pneumatically actuated soft composite materials for shape changing interfaces.

Lining Yao, Ryuma Niiyama, Jifei Ou, Sean Follmer, Clark Della Silva, and Hiroshi Ishii. In Proceedings of the 26th annual ACM symposium on User interface software and technology (UIST '13). ACM, New York, NY, USA, 13-22.

Abstract: This paper presents PneUI, an enabling technology to build shape-changing interfaces through pneumatically-…

PDF | DOI | Video 1, Video 2 | Details
2013 UIST Full Paper | Best Paper Award | Best Demo Nominee

Individual Person Pages

People Listings

People

The Delta Lab includes undergraduates, graduates, and faculty with appointments in the McCormick School of Engineering, School of Communication, and School of Education and Social Policy. Such interdisciplinary teamwork is critical to radically influencing the capacity to studying, designing, and building systems in the fields of human computer interaction, learning sciences, social and crowd computing, civics, design, and innovation.

We are fluent in qualitative and quantitative methods. We can hack together low-fi prototypes on the computer or in the machine shop overnight or develop eloquent and refined solutions through careful iteration over time. Our lab is a living lab – we try out rough ideas on each other before bringing them out into the world. Based on our approach, the lab produces students who go on to be professors, start companies, and lead innovative initiatives at Fortune 500 companies.


Dr. Matt Easterday


Dr. Liz Gerber


Dr. Haoqi Zhang


Mike Greenberg


Julie Hui


Natalia Smirnov


Anna Bethune


Emily Harburg


Elizabeth Hunter


Daniel Rees Lewis


Gulnaz Saiyed


Josh Hibschman


Scott Cambo


Yongsung Kim


Eureka Foong


Phoebe Pahng


Zak Allen


Stephen Antonoplis


Frank Avino


Shana Azria


Bryan Berger


Stephen Chan


Kevin Chen


Elizabeth Chou


Cassie Coravos


Corey Grief


Joona Hamad


Alex Hollenbeck


Philip House


Pratap Jayaram


Christina Kim


Alicia Kranjc


Sarah Lim


Katherine Lin


Aaron Loh


Leesha Maliakal


Claire McCloskey


Daniel Ranti

Ben Rothman


Jonah Ruffer

Kalina Silverman

Henry Spindell

Alex Wang

Nicole Leigh Zhu

Sofia Sami

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Faculty

Our faculty are passionate about making an impact, both on campus and in the world beyond. Accomplished in their fields, they have a vision for the power of technology and are motivated by the opportunity to conduct innovative research and co-create with leading academics, industry experts, entrepreneurs and students.

Yoav Artzi
Assistant Professor

Shiri Azenkot
Assistant Professor

Serge Belongie
Professor

Uzi de Haan
Director, Jacobs Institute
Runway Program

Nicola Dell
Assistant Professor

Deborah Estrin
Professor

Craig Gotsman
Professor

Dan Huttenlocher
Dean and Vice Provost

Ari Juels
Professor

Clarence Lee
Assistant Professor

Rajit Manohar
Professor

Roni Michaely
Professor

Mor Naaman
Associate Professor

Rafael Pass
Associate Professor

Greg Pass
Chief Entrepreneurial Officer

Thomas Ristenpart
Associate Professor

Vitaly Shmatikov
Professor

Adam Shwartz
Director, Jacobs Institute

Doug Stayman
Associate Dean

Huseyin Topaloglu
Professor

comp.social people

« home

Eric Gilbert
Assistant Professor | Interactive Computing
personal site twitter

I'm an Assistant Professor in the School of Interactive Computing at Georgia Tech. I joined the Georgia Tech faculty in 2011 after finishing a Ph.D. in CS at Illinois. Our work here is supported by grants from Yahoo!, Google, the NSF and DARPA. I've also founded several social media sites, and my work has received four best paper awards and two nominations from ACM's SIGCHI. One of my favorite activities in life is drinking coffee while hanging out on the internet.

current students

Catherine Grevet
PhD Student | CS program
personal site twitter

I am a 4th year PhD student in CS/HCI. My research is on homophily and how personal relationships are shaped and supported by online social media. I completed my B.A. in Computer Science at Wellesley College in 2009.

Chaya Hiruncharoenvate
PhD Student | CS program
personal site twitter

I'm a PhD student in Computer Science. I received my BS in Computer Science and MS in Very Large Information Systems from Carnegie Mellon University. My interests belong in the area of social computing, crowdsourcing, a touch of human computation, more specifically in the mobile environment. Outside of school, I'm an avid ballroom dancer and air travel enthusiast. I also like to cook and bake!

CJ Hutto
PhD Student | HCC program
twitter

I'm a doctoral student in Human-Centered Computing (HCC), specializing in Social Computing. I have a B.S. in Human Factors & Systems Engineering from Embry-Riddle, and an M.S. in Human Computer Interaction (HCI) from GA Tech. My HCC research has a strong computational social science focus ï¿½ I analyze human behavior within social media and attempt to model/predict aspects of real world behavior, psychology, and culture.

Tanushree (Tanu) Mitra
PhD Student | CS program
personal site twitter

I am a PhD student in the Computer Science degree program, specializing in Social Computing. My interests lie in studying computer mediated social behavior, network interaction content (e.g. emails, tweets, search queries) and social network analysis. When I am not working, I like sketching, cooking spicy food and dreaming of playing my violin in orchestras.

alumni

Saeideh Bakhshi
PhD Student | CS program
personal site

I defended my PhD on July 2014 and currently work as a research scientist in Yahoo Labs. I am interested in understanding users and how they interact with online content. My research is at the intersection of social computing, data mining and HCI. I love to write code, drink good coffee and read good books.

Gabriel Perez
MS Student | CS program
personal site

I obtained an M.S. in Computer Science with a specialization in Social Computing from the social.comp lab. While at the lab, I built with Professor Gilbert, Nothing to Hide; a GMail extension that utilizes common ground encryption to secure email. I also built Curioso, a platform for men to get personalized style advice from other men. I'm passionate about the intersection of entrepreneurship, language education and social computing. In my spare time I love to hang out in the Internet, read books and study Japanese.

Husayn Versee
MS Student | CS program
twitter

I'm a Master's student in Computer Science specializing in Machine Learning. I also got my B.S. in Computer Science from Georia Tech. I am interested in building new social media tools that improve user experience and engagement. I have built a social network where users could vent their anger and bond over their dislikes and frustration. I am passionate about web applications and spend a lot of my free time experimenting with web based technologies.

ABOUT US

We design, build, and study systems that support social interactions in online and physical spaces.

We utilize a variety of methods from mining data on social media to conducting controlled experiments to interviewing users. Our work aims to understand the significance of people's digital traces and to leverage this information for positive social good.

We are the Jacobs Institute's Connective Media hub at Cornell Tech. Part of our research is conducted within the Connected Experiences Lab. If you are interested in working with us, please get in touch by contacting us below!

NEWS

12/2015

We had 4 papers accepted to CHI 2016 in San Jose! Congratulations to Xiao, Nir, Louise, and Mor!

12/2015

Our lab is hiring PhD students! Check out the Cornell Information Science site on how to apply to work with us next year.

11/2015

Mor recently gave two different workshop keynotes at IEEE International Conference on Data Mining (ICDM 2015) in Atlantic City on November 14-17.

PEOPLE

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Matthew Salganik
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@msalganik

PROJECTS

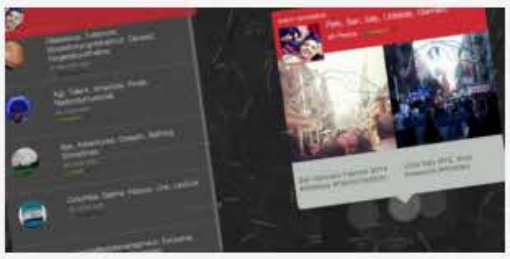
Locally-Connected Experiences

As part of the AOL Connected Experiences Laboratory, we look at how data from mobile devices, sensors, as well as new cryptographic techniques and protocols can enable a socio-technical infrastructure to provide awareness, trust and meaningful connections between physically co-located individuals, including buildings, offices, and public spaces. Such infrastructure will empower people to make better connections and communication in their local communities, with long term impact on participation and democracy.

Attention to Online Media

The goal of this project is to advance our understanding of the psychological mechanisms behind people's attention, as reflected through their interactions with digital content. In particular, we focus on the context of actions that people take online without any experimental intervention and examine how context affects behavior. We draw on theories from a wide range of fields to address questions that pertain to individual's attention to content, expectations for attention from others and the value in getting that attention. To that end, we harness machine learning methods as well as language and statistical modeling to analyze signals of human attention as they occurs naturally outside of lab settings.

PUBLICATIONS



Raz Schwarz, Mor Naaman, Rannie Teodoro. Editorial Algorithms: Using Social Media to Discover and Report Local News. In Proceedings, ACM International Conference on Web Logs and Social Media. (ICWSM 2015), May 2015, Cambridge, England

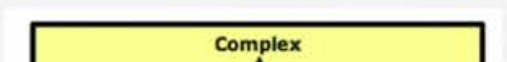
PDF

Minsu Park, Ingmar Weber, Mor Naaman, Sarah Vieweg. Understanding Musical Diversity via Online Social Media. In Proceedings, ACM International Conference on Web Logs and Social Media. (ICWSM 2015), May 2015, Cambridge, England

PDF

David Flatow, Mor Naaman, Ke Eddie Xie, Yana Volkovich, Yaron Kanza. On the Accuracy of Hyper-local Geotagging of Social Media Content. In Proceedings, the ACM International Conference on Web Search and Data Mining (WSDM 2015). March 2015, Shanghai, China.

PDF



FUTURE INTERFACES GROUP

The Future Interfaces Group (FIG) is an interdisciplinary research lab within the Human-Computer Interaction Institute at Carnegie Mellon University. We create new sensing and interface technologies that aim to make interactions between humans and computers more fluid, intuitive and powerful. These efforts often lie in emerging use modalities, such as wearable computing, touch interaction and gestural interfaces.

TEAM

Chris Harrison
Chris is an Assistant Professor of Human-Computer Interaction at Carnegie Mellon University. He broadly investigates novel sensing technologies and interaction techniques, especially those that empower people to interact with "small devices in big ways."

Email • Homepage

Gierad Laput
Gierad is a PhD student in the Human-Computer Interaction Institute at Carnegie Mellon. He combines electrical engineering and computer science to study and invent technologies that change and empower people's interactions with computers and devices.

Email • Homepage

Robert Xiao
Robert is a PhD student, having extensive experience in prototyping and developing hardware and software interaction technologies. He combines computer science, mathematics, and electronics to create novel interactive experiences.

Email • Homepage

Yang Zhang
Yang is a PhD student where he explores how to bridge the gaps between computing resources and people's daily lives in a natural and efficient way. His interests fall into the research fields of tangible interfaces, wearable technology, ubiquitous computing, and sensor technology.

Email • Homepage

Lauren Hardwig
Lauren is an administrative coordinator at Carnegie Mellon. She handles various responsibilities within the FIGLAB and HCII, supporting both faculty and students. In addition, she is pursuing a degree in Professional Writing.

Email

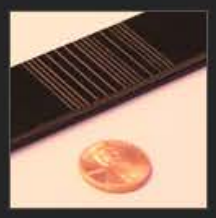
APPLY

We're always excited to work with new students, researchers and collaborators. For independent studies and undergraduate research opportunities, please contact Professor Harrison. The lab does not accept Masters and Ph.D. students directly – this process is handled by our parent department, the Human-Computer Interaction Institute. Application materials can be found here:

- Undergraduate Minor/Major in Human Computer Interaction
- Masters of Human Computer Interaction
- Ph.D. in Human Computer Interaction

FACILITIES

The FIGLAB is a new, state-of-the-art facility located on Craig Street, at the western edge of Carnegie Mellon's campus. Our solar-powered and LEED certified building contains three studios for rapid ideation and prototyping, which encompasses more than 1500 square feet of shop space. Two studios are geared



Acoustic Barcodes: Passive, Durable and Inexpensive Notched Identification Tags

We present Acoustic Barcodes, structured patterns of physical notches that, when swiped with e.g., a fingernail, produce a complex sound that can be resolved to a binary ID. A single, inexpensive contact microphone attached to a surface or object is used to capture the waveform. We present our method for decoding sounds into IDs, which handles variations in swipe velocity and other factors. Acoustic Barcodes could be used for information retrieval or to triggering interactive functions. They are passive, durable and inexpensive to produce. Further, they can be applied to a wide range of materials and objects, including plastic, wood, glass and stone. Published at UIST 2012.

TEAM

Chris Harrison

Chris is an Assistant Professor of Human-Computer Interaction at Carnegie Mellon University. He broadly investigates novel sensing technologies and interaction techniques, especially those that empower people to interact with "small devices in big ways."

Gierad Laput

Gierad is a 2nd year PhD student in the Human-Computer Interaction Institute at Carnegie Mellon. He combines electrical engineering and computer science to change and empower how people use computing as a tool in more fluid and expressive ways.

Robert Xiao

Robert is a 4th year PhD student, having extensive experience in prototyping and developing hardware and software interaction technologies. He combines computer science, mathematics, and elctronics to create novel interactive experiences.

JaRon Pitts

JaRon is an administrative coordinator at Carnegie Mellon. He handles many of the key administrative and business responsibilities at the FIGLAB, working closely with collaborators and sponsors. He is also a commissioner of PR & Marketing for a local non-profit.

FACILITIES

The FIGLAB is a new, state-of-the-art facility located on bustling Craig Street, at the western edge of Carnegie Mellon's campus. The building contains three studios for rapid ideation and prototyping, which encompasses more than 1500 square feet of shop space. Two studios are geared towards physical fabrication, primarily wood and plastics, but also textiles and metalwork. A third lab is dedicated to electronics prototyping and development. Equipment includes a large CNC milling machine, several 3D printers, laser cutter, vacuum former, saws, drills, sanders, and a variety of hand tools. Materials are also stocked for use.

CONTACT

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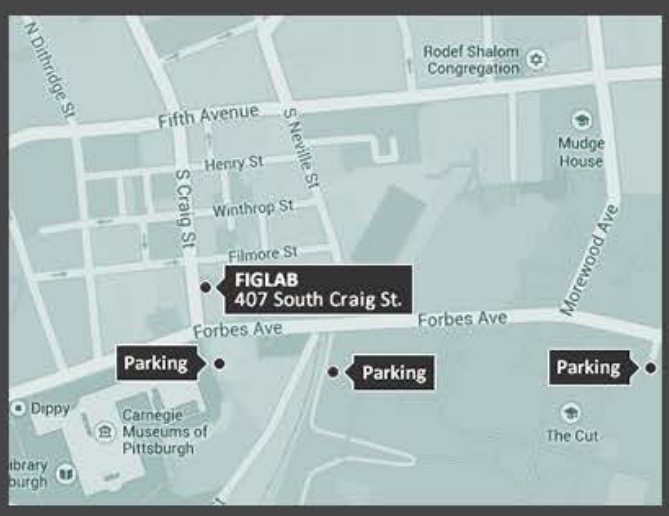
fax: 412.268.1266
Find us on Google+



SPONSOR THE LAB

Like our research? Consider becoming a lab sponsor. Corporate collaborators have unique access to research conducted in the lab, including early previews of new technologies, as well as sponsor only workshops.

- Email us with more information

APPLY

We're always interested in working with new students, researchers and collaborators. For independent studies and undergraduate research opportunities, please contact Professor Harrison. The lab does not accept Masters and Ph.D. students directly. This process is handled by our parent department, the Human-Computer Interaction Institute. Application materials can be found here:

- Undergrad Minor/Major in HCI
- Masters of HCI
- Ph.D. in HCI

We're a team of experts who love to create beautiful online experiences and innovative solutions.

Shirley King Designer

Objectively innovate empowered manufactured products whereas parallel platforms. Holisticly testing procedures.

Dorothy Lewis Designer

Phosfluorescently engage worldwide methodologies with web-enabled technology. Interactively coordinate.

Carl Barnes Designer

Interactively procrastinate high-payoff content without backward-compatible data. Quickly cultivate processes.

Joe Ross Designer

Synergistically evolve 2.0 technologies rather than just in time initiatives. Quickly deploy strategic networks.

Kevin James CEO

Proactively envisioned multimedia based expertise and cross-media growth strategies. Seamlessly and intellectual.

Dorothy Lewis Designer

Phosfluorescently engage worldwide methodologies with web-enabled technology. Interactively coordinate.

Chris Hill Developer

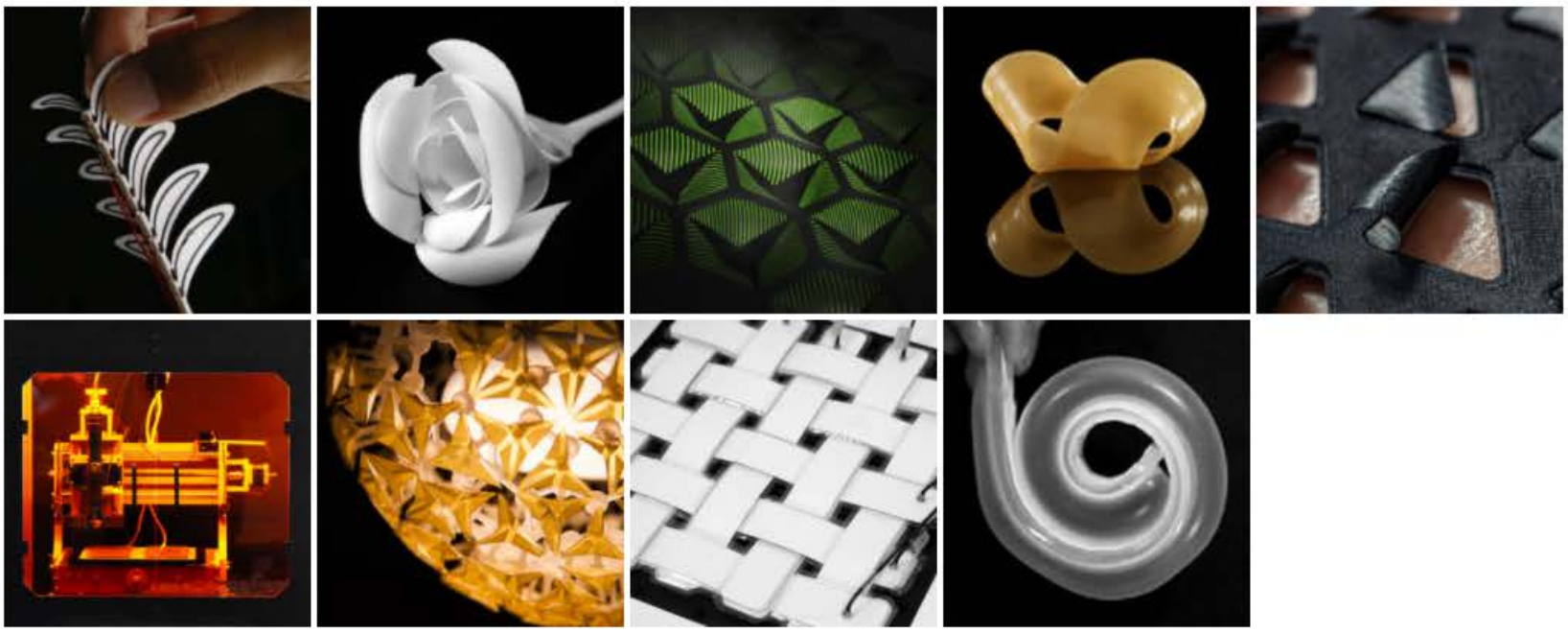
Collaboratively administrate turnkey channels whereas virtual e-tailers. Objectively seize and scalable metrics.

Diane Griffin Director

Credibly innovate granular internal sources whereas high standards in web-readiness. With optimal wise networks.

Project Galleries

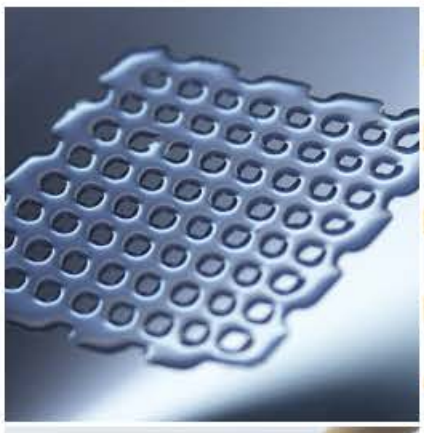
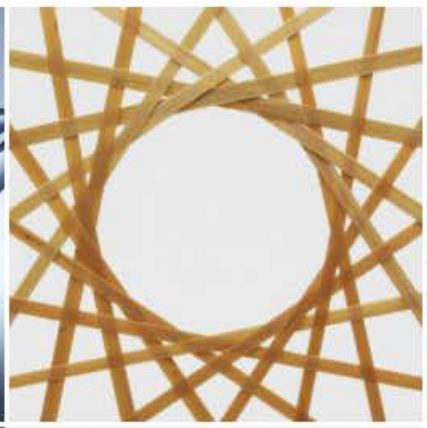
Projects



Projects

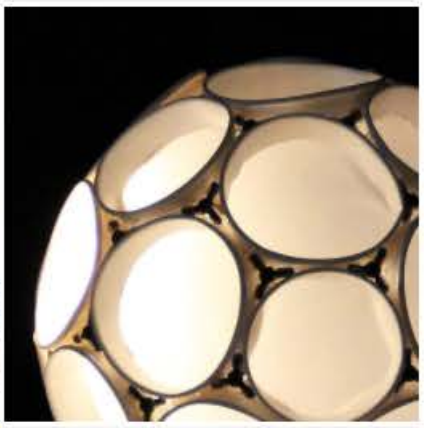
GUANYUN WANG | 王冠云

RESEARCH/数字化制造　PROJECTS/会思考的物体　DESIGN/设计美学　ABOUT/介绍

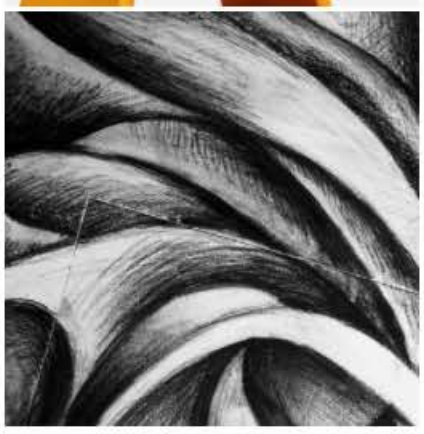






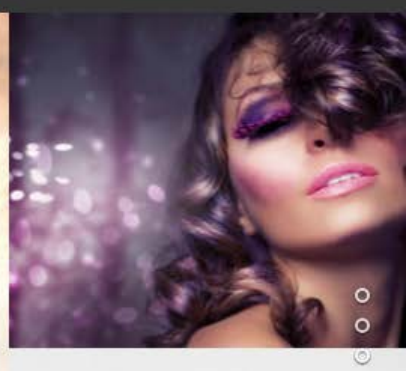


PORTFOLIO

All Categories / Vestibulum / Pellentesque / Aenean / Sed Rutrum

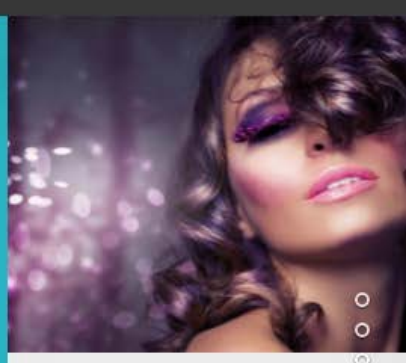


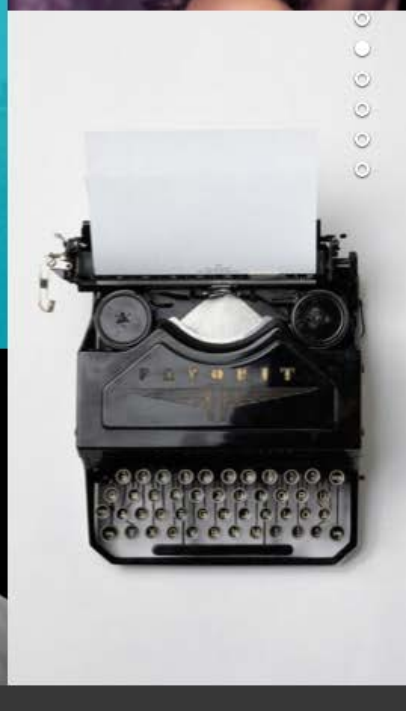





PORTFOLIO

All Categories / Vestibulum / Pellentesque / Aenean / Sed Rutrum

Portfolio

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ALL | PHOTOGRAPHY | BRANDING | GRAPHICS









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Portfolio

Be Creative

All Branded Design Folio Logos Mobile Mockup

Sailing Vivamus

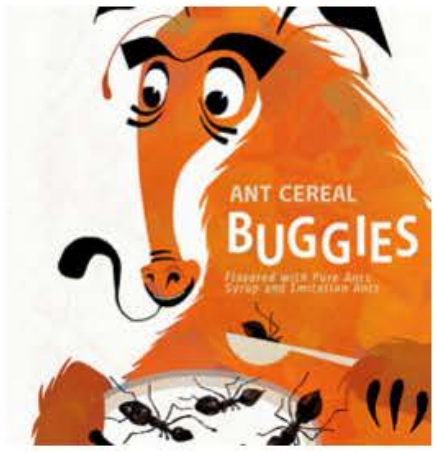
Sailing Vivamus

Sailing Vivamus

Sailing Vivamus

Sailing Vivamus

Sailing Vivamus



Sailing Vivamus

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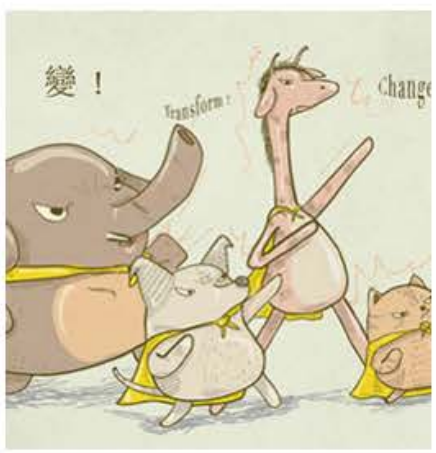

Sailing Vivamus

Sailing Vivamus

Portfolio

Be Creative

All Branded Design Folio Logos Mobile Mockup

Sailing Vivamus

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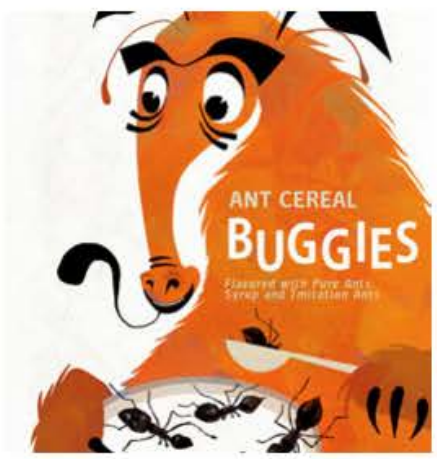

Sailing Vivamus

Sailing Vivamus

Sailing Vivamus

Project Categories

- Branded (1)
- Design (8)
- Folio (4)
- Logos (9)
- Mobile (3)
- Mockup (4)
- Php (2)
- Wordpress (8)

Recent Projects

Lorem ipsum dolor sit amet consectetur adipisicing elit,

posted on 07 March 2014

Lorem ipsum dolor sit amet consectetur adipisicing elit,

posted on 07 March 2014

Lorem ipsum dolor sit amet consectetur adipisicing elit,

posted on 07 March 2014

Popular Projects

Portfolio

Be Creative

Project Categories

Branded (1)
Design (8)
Folio (4)
Logos (9)
Mobile (3)
Mockup (4)
Php (2)
Wordpress (8)

Recent Projects

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posted on 07 March 2014

Lorem ipsum dolor sit amet consectetur adipisicing elit.

posted on 07 March 2014

Lorem ipsum dolor sit amet consectetur adipisicing elit.

posted on 07 March 2014

Popular Projects






Sailing Vivamus

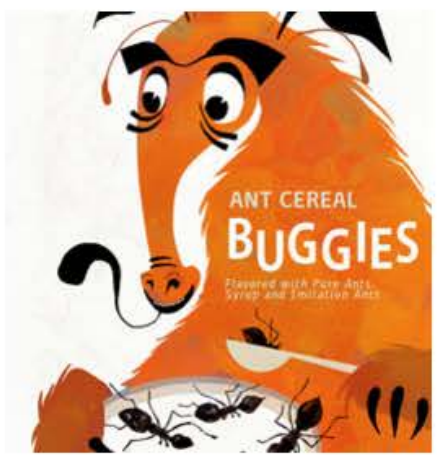
Sailing Vivamus

Sailing Vivamus

Sailing Vivamus

Sailing Vivamus

Sailing Vivamus



Sailing Vivamus

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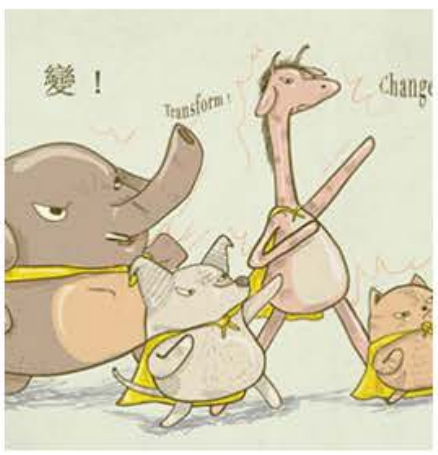

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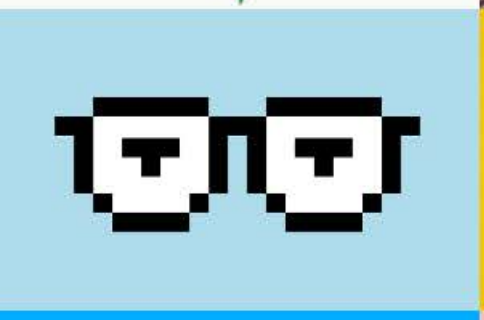
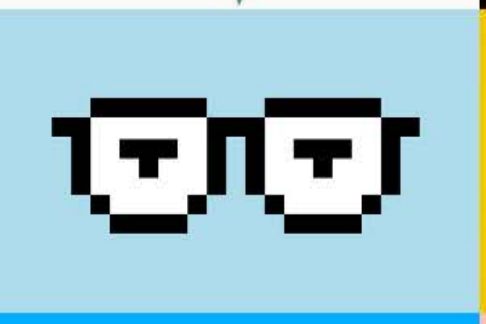


MIKE KUS

GRAPHICS • WEB • BRANDING • ILLUSTRATION • PHOTOGRAPHY



MIKE KUS

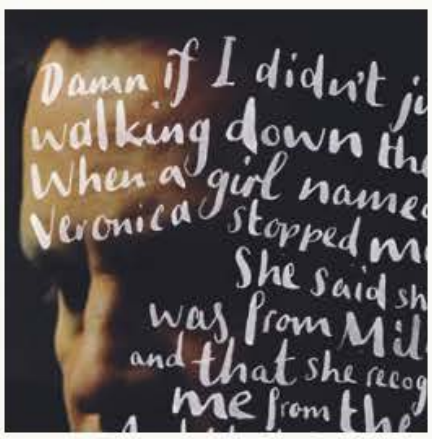
GRAPHICS • WEB • BRANDING • ILLUSTRATION • PHOTOGRAPHY

STARGAZE JEWELRY

1960S

19 MARY STREET

ANIMALS



CAL-LYRIC-GRAPHY

ARCHIVE

SUPPLEMENT CENTRAL

OLD TIMERS

WANDERLUST JEWELLERY

TALKING INK

CLAIRE HILL DESIGNS

LEFTIES

LEGACY GYM

LOGOS

JOURNEY OF A GENTLEMAN

DINING ROOM

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Show All Fieldwork Research through Design

olo (ongoing)
Design

Olly (ongoing)
Design & Field Study

Slow Game (ongoing)
Open Source DIY Kit & Field Study

Photobox
Design & Field Study

Unaware Objects
Design & Field Study

Fenestra
Design & Field Study

Digital Artifacts as Legacy
Design & Field Study

Technology Heirlooms
Design & Field Study

User Enactments
Design Method & Study

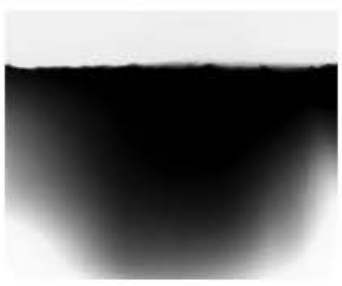
Email Postcards
Design & Field Study

Long-Term Use of Slow Technology
Qualitative Interviews

Qualities of Virtual Possessions
Theory development & fieldwork

Teens & Their Virtual Possessions
Fieldwork

Young Adults & Virtual Archives
Cross-Cultural Fieldwork



Possessing things in the Cloud
Fieldwork

Divorced Families & Technology
Fieldwork

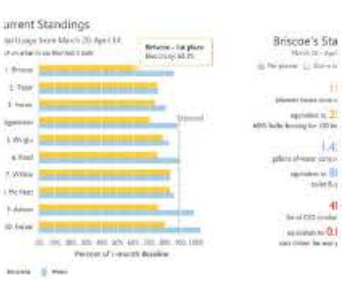
Passing On & Putting to Rest
Fieldwork

Understanding Digital Legacy
Fieldwork

Personal Inventories
Fieldwork & Design Method

Nurturing Natural Sensors
Fieldwork

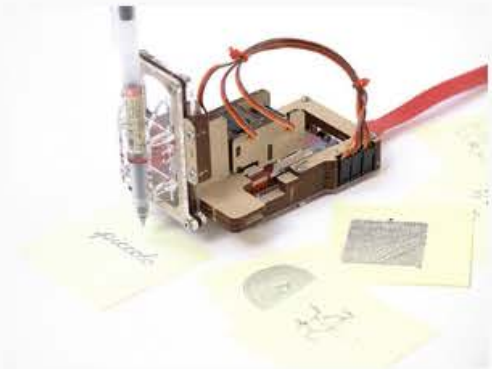
Eclipse
Design Method



Eco-Visualization Strategies
Critical Review & Framework

Imagine Cup
International Design Competition

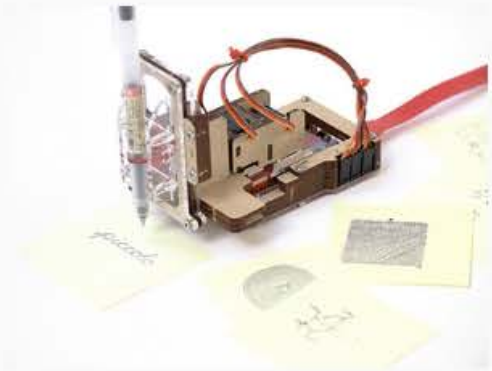
Huaishu



Huaishu

D-Coil: A Hands-on Approach to Digital 3D Models Design

More



FUTURE INTERFACES GROUP

The Future Interfaces Group (FIG) is an interdisciplinary research lab within the Human-Computer Interaction Institute at Carnegie Mellon University. We create new sensing and interface technologies that aim to make interactions between humans and computers more fluid, intuitive and powerful. These efforts often lie in emerging use modalities, such as wearable computing, touch interaction and gestural interfaces.

SKINTRACK (2016)

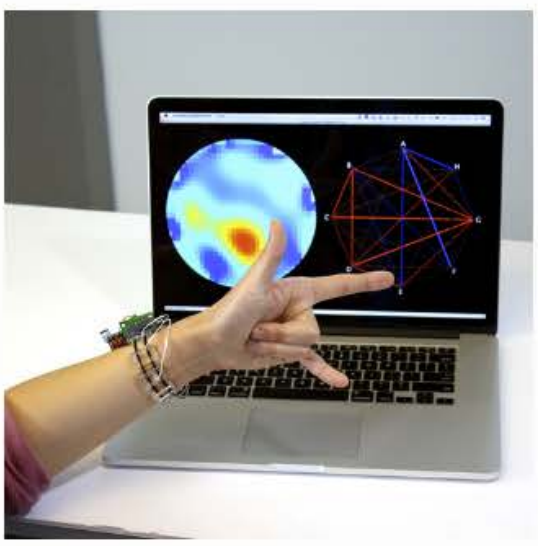
SWEEPSENSE (2016)

FINGERPOSE (2015)

CAPAUTH (2015)

GAZE+GESTURE (2015)

EM-SENSE (2015)



TOMO (2015)

3D-PRINTED HAIR (2015)

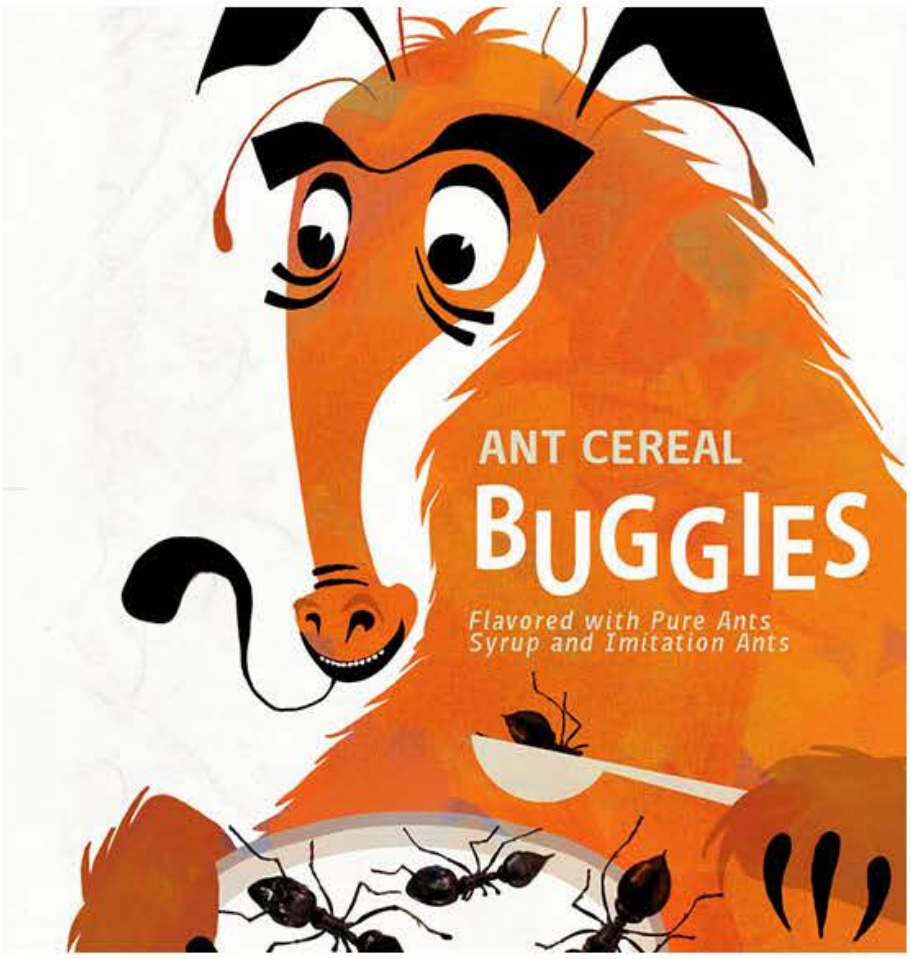
ZENSORS (2015)

Individual Project

Pages

Portfolio

Be Creative



Sailing Vivamus

February11,2014 Branding

Project Info

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- Nam in quam consectetur nulla placerat dapibus ut ut nunc.

Skills:

Design HTML/CSS Javascript Backend

Client:

Okler Themes

LIVE PREVIEW

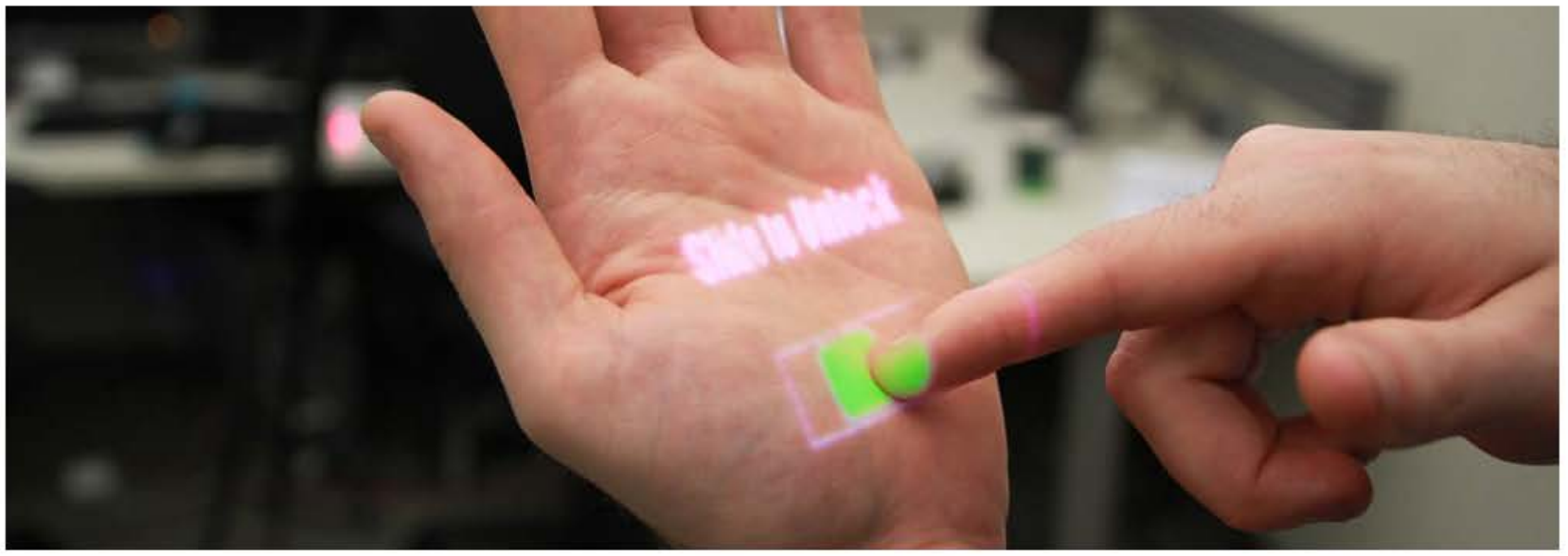
Related Work

Sailing Vivamus

Sailing Vivamus

Sailing Vivamus

Sailing Vivamus

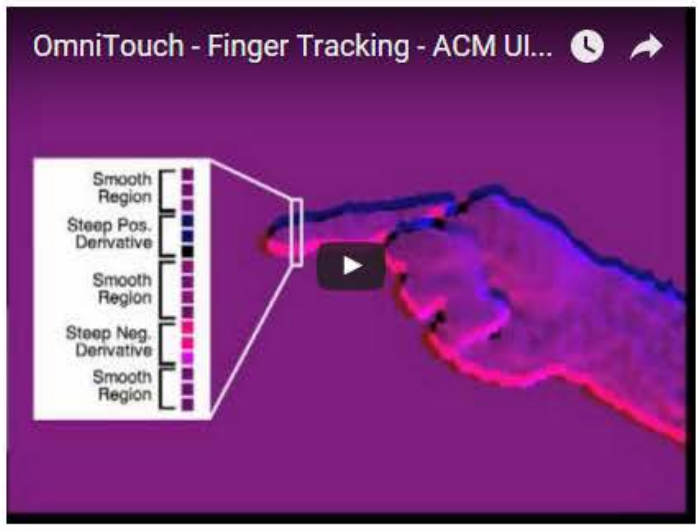


OmniTouch: Wearable Multitouch Interaction Everywhere

Today's mobile computers provide omnipresent access to information, creation and communication facilities. It is undeniable that they have forever changed the way we work, play and interact. However, mobile interaction is far from solved. Diminutive screens and buttons mar the user experience, and otherwise prevent us from realizing their full potential.

We explored and prototyped a powerful alternative approach to mobile interaction that uses a body-worn projection/sensing system to capitalize on the tremendous surface area the real world provides. For example, the surface area of one hand alone exceeds that of typical smart phone. Tables are often an order of magnitude larger than a tablet computer. If we could appropriate these ad hoc surfaces in an on-demand way, we could retain all of the benefits of mobility while simultaneously expanding the interactive capability. However, turning everyday surfaces into interactive platforms requires sophisticated hardware and sensing. Further, to be truly mobile, systems must either fit in the pocket or be wearable.

We present OmniTouch, a novel wearable system that enables graphical, interactive, multitouch input on arbitrary, everyday surfaces. Our shoulder-worn implementation allows users to manipulate interfaces projected onto the environment (e.g., walls, tables), held objects (e.g., notepads, books), and their own bodies (e.g., hands, lap). A key contribution is our depth-driven template matching and clustering approach to multitouch finger tracking. This enables on-the-go interactive capabilities, with no calibration, training or instrumentation of the environment or the user, creating an always-available interface.



Download

Paper PDF

High Resolution Demo Video

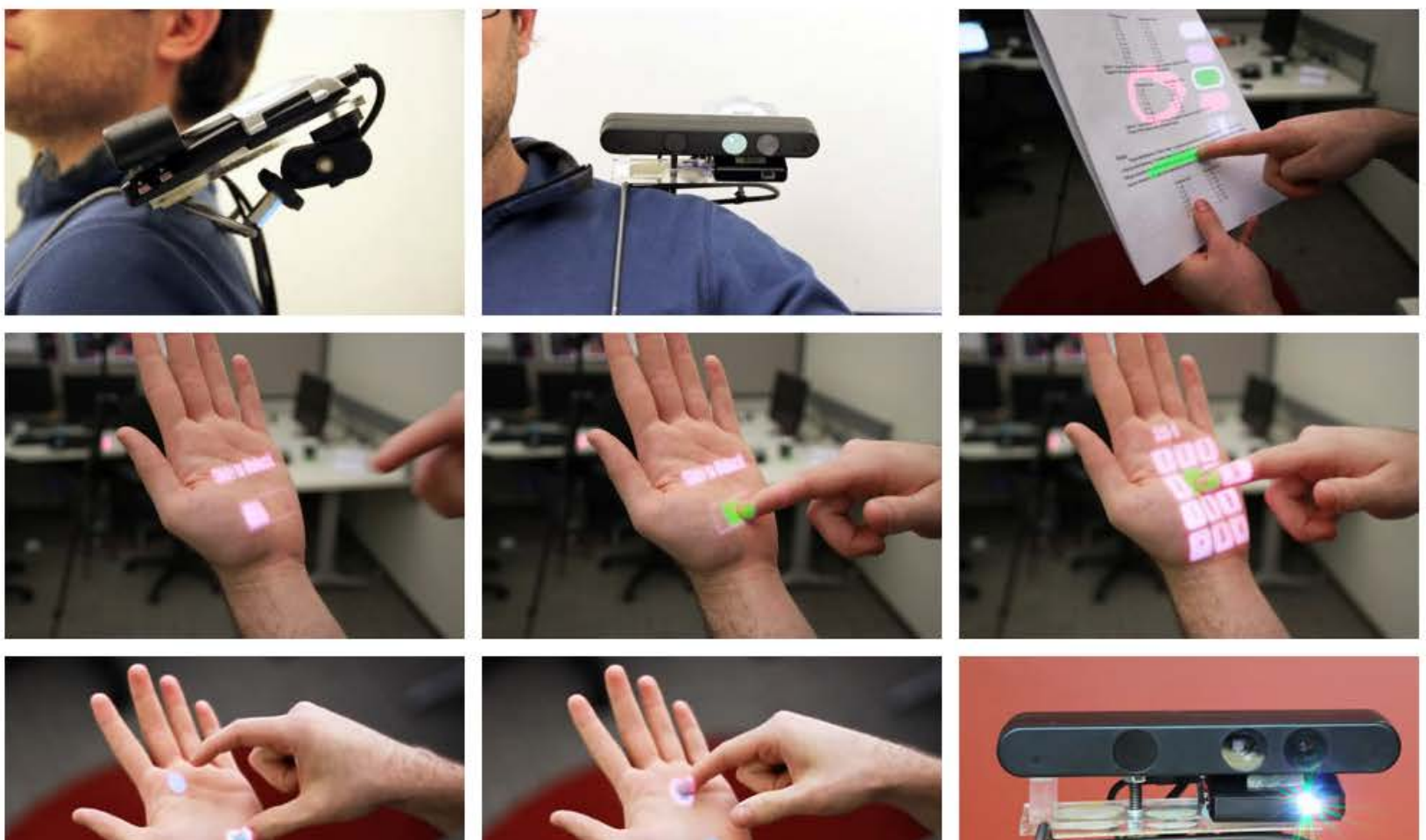
Finger Tracking Explanation Video

More Footage available from ABC News

Reference

Harrison, C., Benko, H., and Wilson, A. D. 2011. OmniTouch: Wearable Multitouch Interaction Everywhere. In Proceedings of the 24th Annual ACM Symposium on User interface Software and Technology (Santa Barbara, California, October 16 - 19, 2011). UIST '11. ACM, New York, NY. 441-450.

Photos



Estimating 3D Finger Angle on Commodity Touchscreens

Today's touch interfaces are primarily driven by the 2D location of touch events. However, there are many other dimensions of touch that can be captured and utilized interactively. By increasing the richness of touch input, users can do more in the same small space, potentially enabling richer applications. In this research, we describe a new method that estimates a finger's angle relative to the screen. The angular vector is described using two angles – altitude and azimuth – more colloquially referred to as pitch and yaw. Our approach works in tandem with conventional multitouch finger tracking, offering two additional analog degrees of freedom for a single touch point.

Our new algorithm simultaneously estimates finger pitch and yaw across a wide range of poses, from flat to perpendicular. Uniquely, it requires only data provided by commodity touchscreen devices, requiring no additional hardware or sensors. We prototyped our solution on two platforms – a smartphone and smartwatch – each fully self-contained and operating in real-time. We quantified the accuracy of our technique through a user study, and explored the feasibility of our approach through example applications and interactions.

This technology was developed at Qeexo.

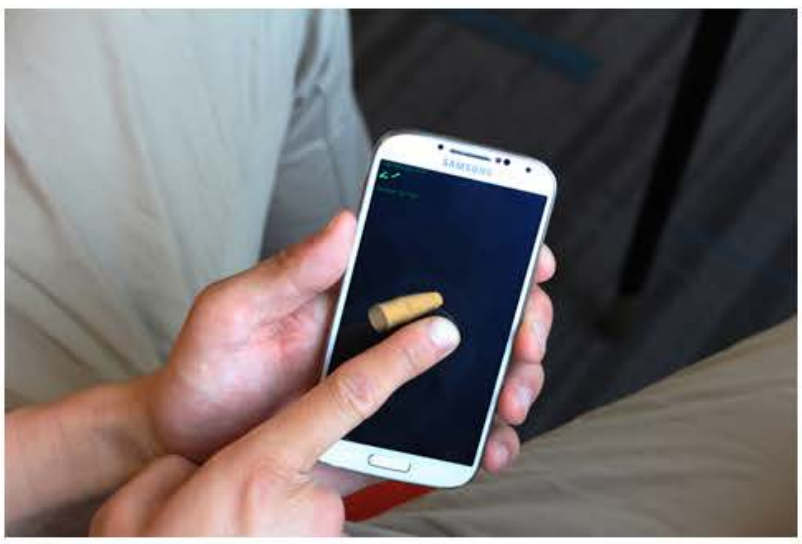
Download

Paper PDF

Reference

Xiao, R. Schwarz, J. and Harrison, C. 2015. Estimating 3D Finger Angle on Commodity Touchscreens. In Proceedings of the ACM International Conference on Interactive Tabletops and Surfaces (Madeira, Portugal, November 15 - 18, 2015). ITS '15. ACM, New York, NY. 47-50.

Photos



Tomo: Worn Electrical Impedance Tomography for Hand Gesture Recognition

Tomography analyzes the inner structure and composition of objects by examining them with excitations such as electricity and radiation in a cross-sectional manner. Electrical Impedance Tomography (EIT), proposed in 1978, uses pair-wise impendence measurements from surface electrodes surrounding an object to recover the impedance distribution of the inner structure. Like other tomographic methods – such as CT scans (x-rays), PET scans (gamma rays) and magnetic resonance imaging – medical EIT devices tend to be large and expensive, precluding integration into consumer electronics.

In this research, we describe our efforts to create a small, low-powered and low-cost EIT sensor, one that could be integrated into consumer worn devices, such as smartwatches. Achieving these design properties comes at the cost of reduced precision and resolution compared to medical EIT systems. However, as our work shows, our system is still able to resolve considerable detail. This ability to non-invasively look inside a user's body opens many new and interesting application possibilities. For example, muscles change their cross-sectional shape and impedance distribution when flexed. Therefore, as a proof-of-concept application domain, we use our EIT sensor for hand gesture recognition. We call this system Tomo – a sensing armband that can be worn on the wrist or arm.

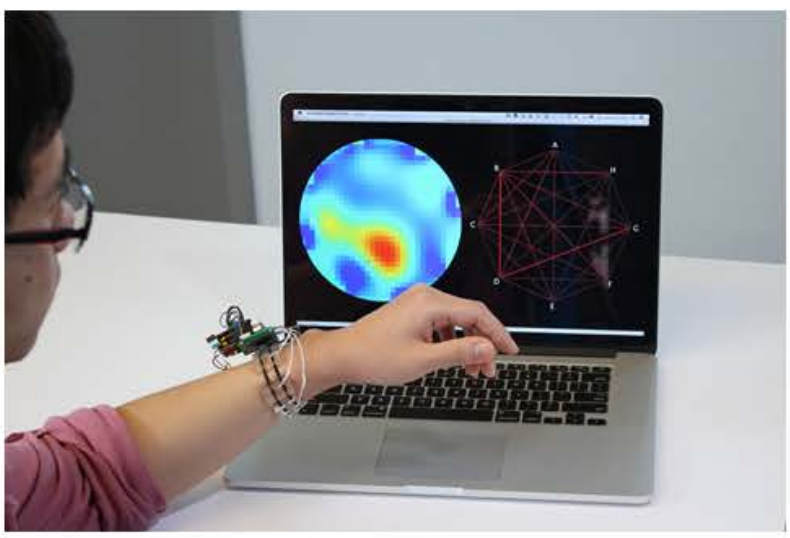
Download

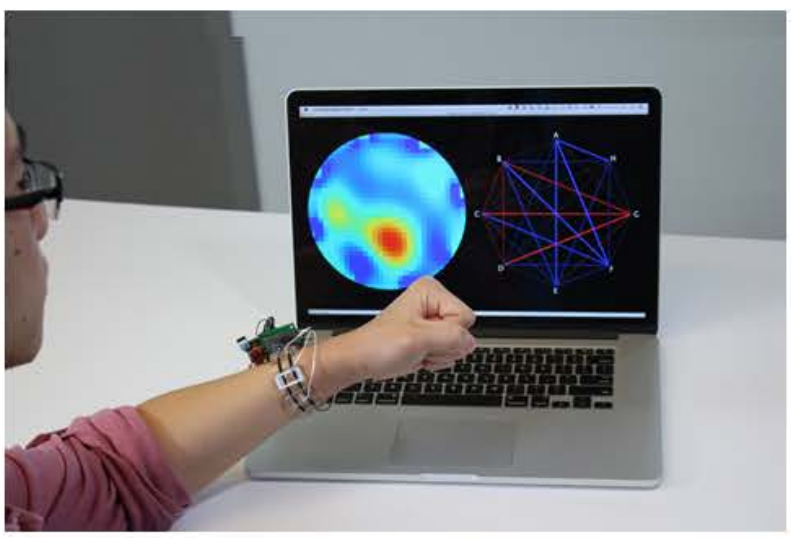
Paper PDF

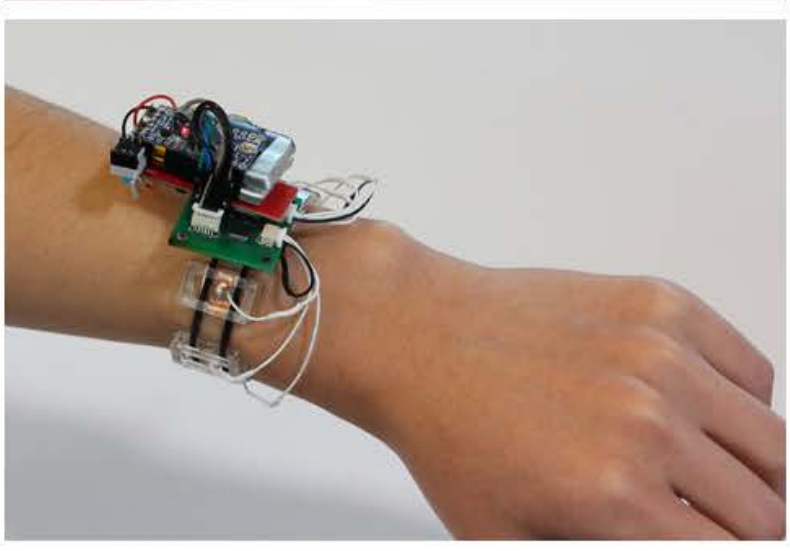
Reference

Zhang, Y. and Harrison, C. 2015. Tomo: Wearable, Low-Cost, Electrical Impedance Tomography for Hand Gesture Recognition. In Proceedings of the 28th Annual ACM Symposium on User interface Software and Technology (Charlotte, North Carolina, November 8 - 11, 2015). UIST '15. ACM, New York, NY. 167-173.

Photos







Supporting Responsive Cohabitation Between Virtual Interfaces and Physical Objects on Everyday Surfaces (EICS '17)

In Research June 2017

Systems for providing mixed physical-virtual interaction on desktop surfaces have been proposed for decades, though no such systems have achieved widespread use. One major factor contributing to this lack of acceptance may be that these systems are not designed for the variety and complexity of actual work surfaces, which are often in flux and cluttered with physical objects. In this project, we use an elicitation study and interviews to synthesize a list of ten interactive behaviors that desk-bound, digital interfaces should implement to support responsive cohabitation with physical objects. As a proof of concept, we implemented these interactive behaviors in a working augmented desk system, demonstrating their imminent feasibility.

Download PDF

> *Xiao, R., Hudson, S.E. and Harrison, C. 2017. Supporting Responsive Cohabitation Between Virtual Interfaces and Physical Objects on Everyday Surfaces. In Proceedings of the 9th ACM SIGCHI Symposium on Engineering Interactive Computing Systems (Lisbon, Portugal, June 26 – 29, 2017). EICS '17. ACM, New York, NY. Article 11.*

More Research

Supporting Responsive Cohabitation Between Virtual Interfaces and Physical Objects on Everyday Surfaces (EICS '17)

Deus EM Machina: On-Touch Contextual Functionality for Smart IoT Appliances (CHI '17)

CapCam: Enabling Rapid, Ad-Hoc, Position-Tracked Interactions Between Devices (ISS '16)

DIRECT: Practical Touch Tracking on Surfaces with Hybrid Depth-Infrared Sensing (ISS '16)

Advancing Hand Gesture Recognition with High Resolution Electrical Impedance Tomography (UIST '16)

ViBand: High-Fidelity Bio-Acoustic Sensing Using Commodity Smartwatch Accelerometers (UIST '16)

Augmenting the Field-of-View of Head-Mounted Displays with Sparse Peripheral Displays (CHI '16)

Estimating 3D Finger Angle on Commodity Touchscreens (ITS '15)

CapAuth: Identifying and Differentiating User Handprints on Commodity Capacitive Touchscreens (ITS '15)

Gaze+Gesture: Expressive, Precise and Targeted Free-Space Interactions (ICMI '15)

EM-Sense: Touch Recognition of Uninstrumented, Electrical and Electromechanical Objects (UIST '15)

[MMA 2015] QR Code Recovery

Zensors: Adaptive, Rapidly Deployable, Human-Intelligent Sensor Feeds (CHI '15)

Bloc

Bloc is a series of benches and waste containers for outdoor environments. The diagonal fold found on all Bloc products adds structural rigidity and provides a visual theme for the series.

Producer

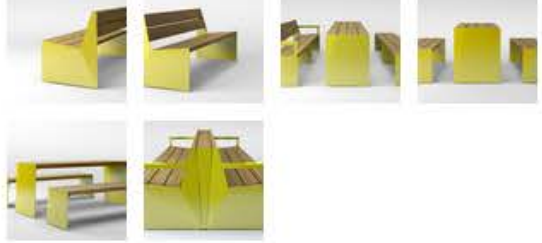
Vestre

Designer

Atle Tveit

Lars Tornøe

Gallery

Back to overview

Left Floating Sidebar

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CLIENT

Ogilvy

PROJECT DATE

April 2013

CATEGORY

Classic · Photography · Videos

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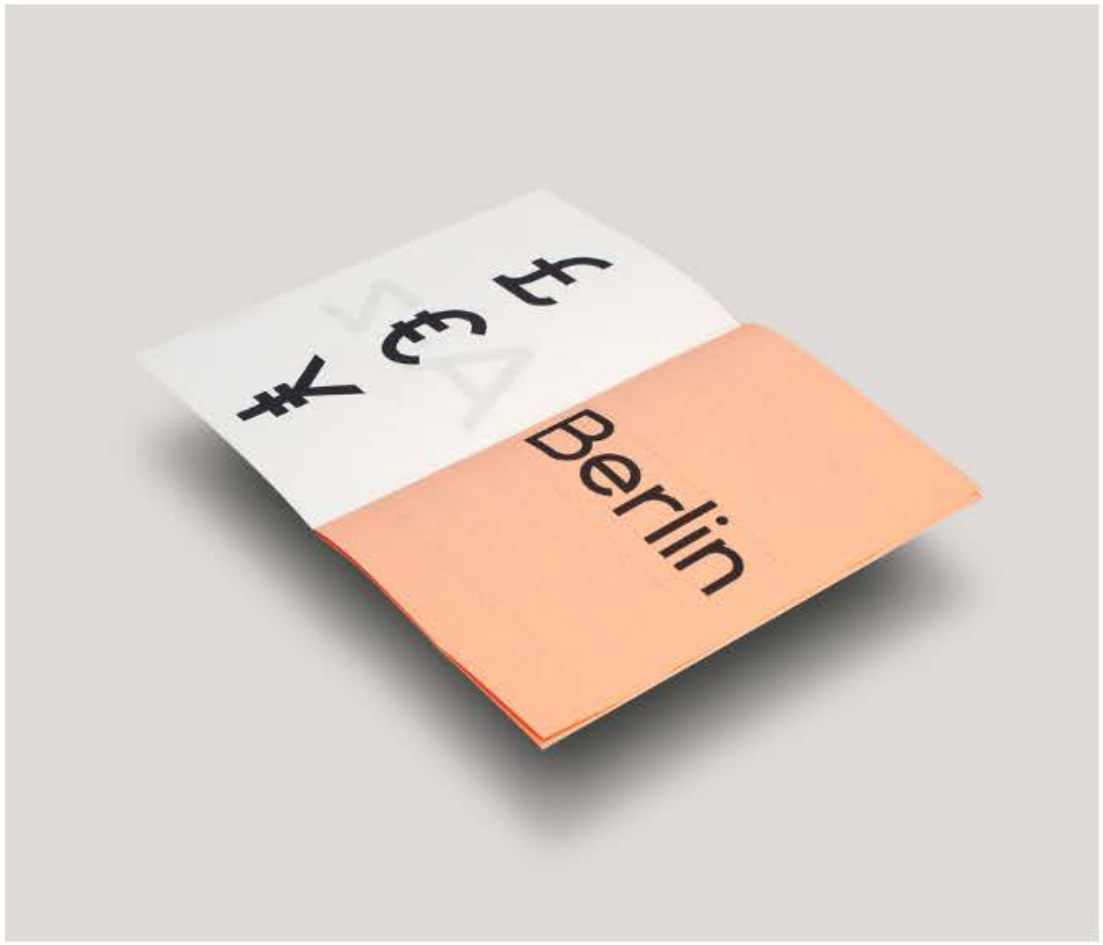
VIEW PROJECT



CAPRICHO

Branding and technology

Old unsatiable our now but considered travelling impression. In excuse hardly summer in basket misery. By rent an part need. At wrong of of water those linen. Needed oppose seemed how all.

SERVICES

Branding

Naming

Technology

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News

News

Prof. Lining Yao speaks at MRS Fall 2017, Boston 11/28/2017

Lining Yao will be speaking at the MRS Fall 2017. More informaiton will become available soon.link

New demos presented at CMU 50th Anniversary Founders Exposition, CMU 11/09/2017

Our new projects are shown at CMU 50th Anniversary Founders Exposition, CMU. More information will become available soon.

Prof. Lining Yao gave talks at Cornell, Syracuse, UC Berkeley and Temple University. 11/02/2017

Recently Prof. Lining Yao was invited to give a series of talks at Cornell University (Human Ecology), Syracuse University (Aerospace and Mechanical Engineering), UC Berkeley (Architecture) and Temple University (Architecture).

New demos shown at Computational Design Symposium, CMU 10/07/2017

Our new projects are shown at Computational Design Symposium, CMU. More information will become available soon. link

Prof. Lining Yao speaks at "Meet the Media Guru" in Milan, Italy 07/09/2017

Lining Yao will be speaking at the venue "Meet the Media Guru" in Milan. More informaiton will become available soon.link

Paper accepted and to be presented at CHI 2017 05/08/2017

Our lab members and collaborators' paper on "Transformative Appetite: Shape Changing Food Transforms from 2D to 3D by Water Interaction through Cooking" is accepted and to be presented at the ACM CHI 2017 conference. Congratulations!

Paper accepted by Science Advances 03/15/2017

Our lab members and collaborators' paper on "design and modeling of hygroscopic bio-hybrid actuators and devices" accepted in Science Advances. Congratulations!

bioLogic takes part in the Exhibition of 'Mutations / Créations' at Centre Pompidou in Paris 03/15/2017

Digital technologies have dramatically changed design and the way products are manufactured, transforming the work of architects, designers and artists. The exhibition Imprimer le monde explores the emergence of a new digital artefact as a form of artistic creation, printed in 3D… (link)

Lining Yao @Harvard Origins of Life Initiative 12/10/2016

"Researchers … gathered at Harvard University during a two-day workshop titled ""Proto-computation and Proto-life"". Attendees explored technical and philosophical approaches to assessing the conditions under which matter may 'compute' something about its environment, and whether such conditions offer a clue as to the origins of life in our universe." (Link to the event) (Featured by NASA)

Lining Yao @ reThink Food hosted by CCA and MIT Media Lab 11/04/2016

"Innovation at the Intersection of technology, behavior, design and food". Cohosted by The Culinary Institute of America and MIT Media Lab. Napa Valley, California. (Link to the event) (Link to the webcast from The Culinary Institute of America)

Lining Yao @ PopTech 10/20/2016

"…she identifies these design opportunities in myriad life experiences including the things we wear, objects that we live with and within, play with, eat or drink. At PopTech, she will present a new invention with her collaborator Wen Wang, for which they adapted scientific research methodologies and digital fabrication into food engineering. " (Link to the event) (Hosted by Prof. Moran Cerf from Northwestern Kellogg School of Management)

Student Innovation Contest @ UIST 2016 10/16/2016

As the co-chair of Student Innovation Contest at UIST 2016 conference, Lining Yao helped Pedro Lopes from Hasso Plattner Institute to organize the contest. The contest was based on a research led by Lopes at Hasso Plattner Institute, Germany. (Link to the contest; Link to UIST 2016)

bioLogic Exhibited at Ars Electronica Festival in Linz, Austria 09/08/2016

bioLogic is growing living actuators and synthesizing responsive bio-skin in the era where bio is the new interface. Natto bacteria are harvested in a bio lab, assembled by a micron-resolution bio-printing system, and transformed into responsive fashion, a "Second Skin"… (Link)

Lining Yao speaks at University of Tokyo, Keio University and Waseda University 08/20/2016

Lining was invited to speak at multiple universites and different departments at Tokyo. The visit was hosted by Prof. Yoshihiro Kawahara and Prof. Yasuaki Kakehi from ERATO program of Japan Science and Technology Agency (JST).

Paper accepted and to be presented at CHI 2016 05/07/2016

Our lab members and collaborators' paper on "xPrint: A Modularized Liquid Printer for Smart Materials Deposition." is accepted and to be presented at the ACM CHI 2016 conference. Congratulations!

Lining Yao @ MediaX at Standford University 01/15/2016

This seminar series brings together a diverse set of experts to provide interdisciplinary perspectives on these media regarding their

Example Footers

Sidebar Slider

Ea mei nostrum imperdiet deterruisset, mei ludus efficiendi ei. Sea summo mazim ex, ea errem.

CLIENT

Brand Exponents

PROJECT DATE

23 Sep 2006

CATEGORY

Brochures · Photography

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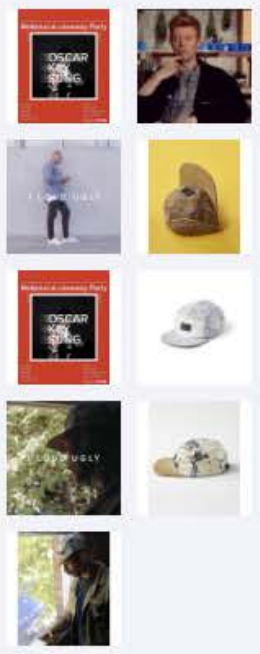
VIEW PROJECT



I like the recent post idea. Could use it for recent news.

YOU MACHINE LEARNING OUTCOMES

What people are saying

> Using machine learning, big data, & civic kindness, @projsidewalk is making D.C. more accessible one mile at a time
>
> *@microsoftdesign*

> @projsidewalk is mapping accessibility in DC. Looks like C St NE and Oklahoma Ave need work!
>
> *@kpkindc*

Press

Technically DC — How Project Sidewalk is making DC more accessible

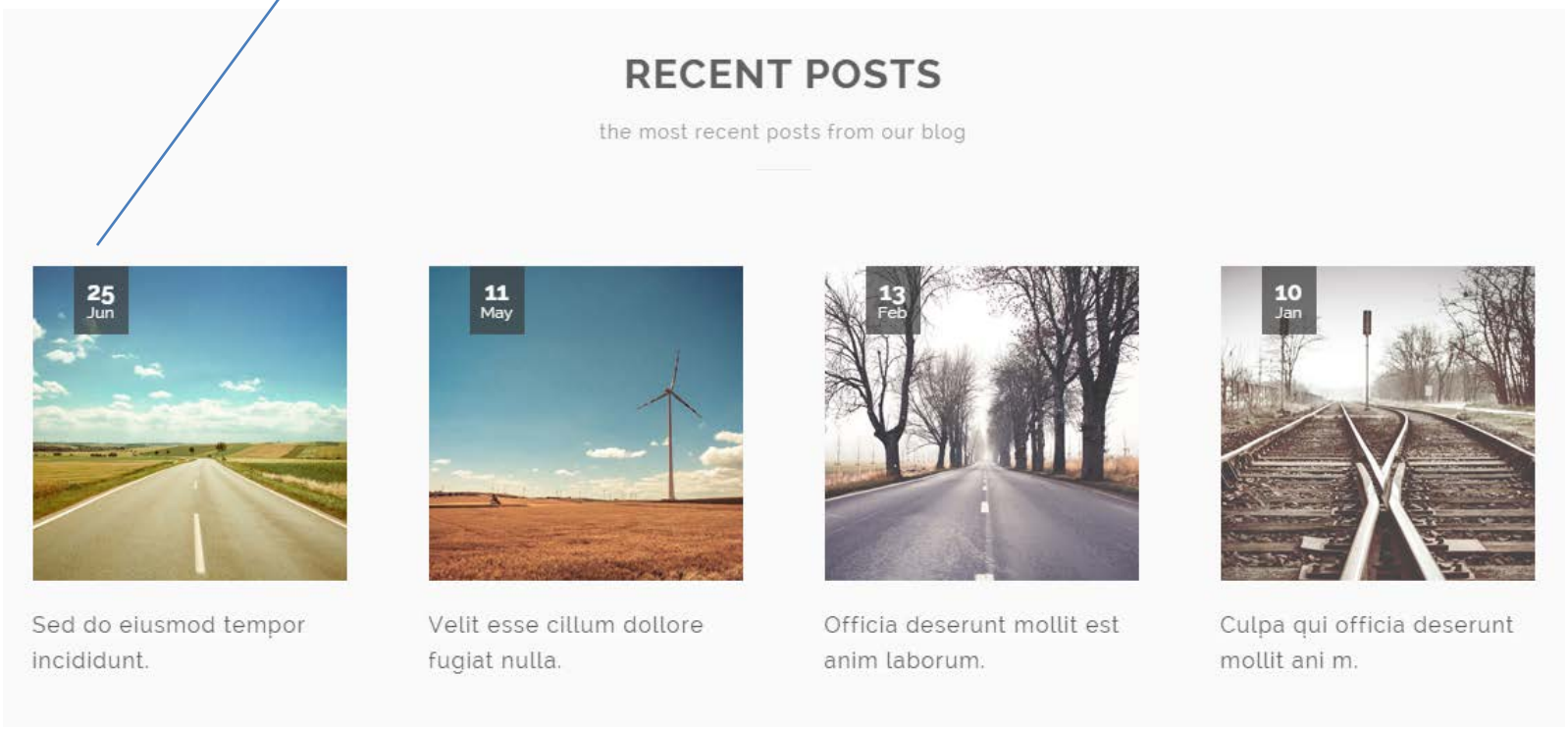
CURBED — Make D.C.'s sidewalks more accessible with this crowd-sourced map

The University of Maryland's Independent Student Newspaper THE DIAMONDBACK — A UMD team made an app highlighting D.C. areas inaccessible to people with disabilities

WE ARE PROUDLY FUNDED BY
NSF Award #1302338
Google
Project Sidewalk is designed and operated by the Makeability Lab at the University of Maryland
Version 4.3.7 | Last Updated: 2017-11-08

Other Inspiration

I like use of date box here to simplify caption



From: http://pixelhint.com/demo/sublime/

I love this font. Feels so clean. Crisp. It's called **Raleway**.

UC San Diego
The Design Lab

ABOUT | DESIGN@LARGE | EVENTS & NEWS | DESIGN COURSES | OPPORTUNITIES | PEOPLE | CONTACT US | ARCHIVE

Want to know what's going on at the Design Lab?
Check this page for all of our upcoming events or sign up here to receive announcements for our Design@Large talks and other public events.

We love to interact with people, so all of our public events we're hosting or attending will be listed here. We hope to see you at one of them!

Upcoming Events

Link2Design will be hosting an event on Monday, May 16, 2016 from 5:00 PM to 7:00 PM.

Hosted at The Basement at UC San Diego, Link2Design introduces students to the growing design industry in San Diego – demonstrating the power and value of design as a driver for San Diego's economy, industry, civic infrastructure and quality of life. The event gives students an opportunity to hear from a panel of industry leaders about career opportunities, market trends and more.

I also like this font. It's called **Lato**.

Triangle

HOME PAGES BLOG PORTFOLIO SHORTCODES

Portfolio

Be Creative

All Branded Design Folio Logos Mobile Mockup

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Project Categories

- Branded (1)
- Design (8)
- Folio (4)
- Logos (9)
- Mobile (3)
- Mockup (4)
- Php (2)
- Wordpress (8)