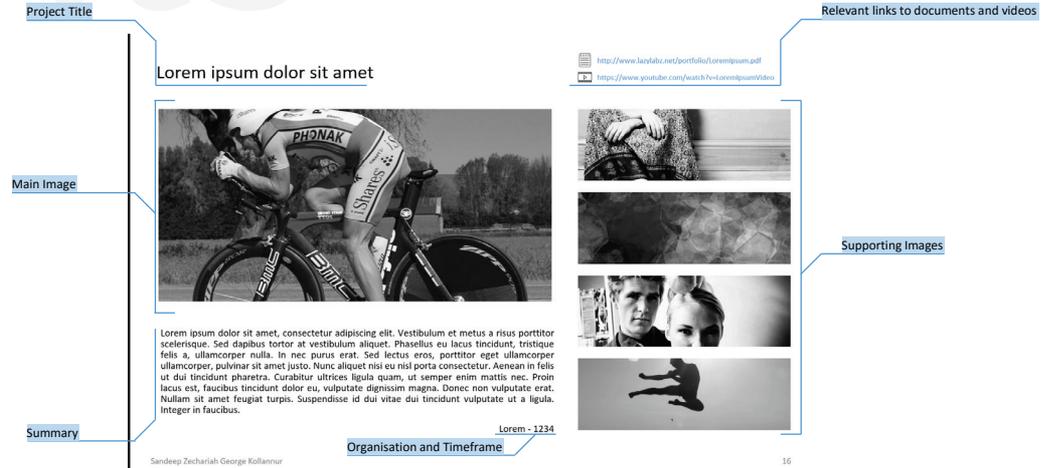




# folio

# contents

1. 2.5D Tangible Shape Display
2. Bobo: An interactive toy
3. Designing for new cultures
4. Zero App! eventually
5. Fitness Tracker for Pets
6. Service Design: Pirates of the City
7. Electronic Colour Sensing Stylus
8. Data Visualisation: Emotions
9. Data Visualisation: Real - Time
10. Patents
11. BBC: Situated Stories
12. Sun Tracking
13. Real - Time visualization and targeting
14. Talks



## Author's Note

*This portfolio highlights key projects conducted by the author at various stages of his career. Each project page is organised with a layout as shown in the above figure. The content is augmented with links especially videos, documents, or dedicated portfolio. Please do consider visiting those links to augment your experience of this portfolio. The author uses his personal website, [www.lazylabz.net](http://www.lazylabz.net) as a personal playground for experiments, testing and hosting content. The author can be reached via email, LinkedIn and other social networks; their respective links are listed below.*



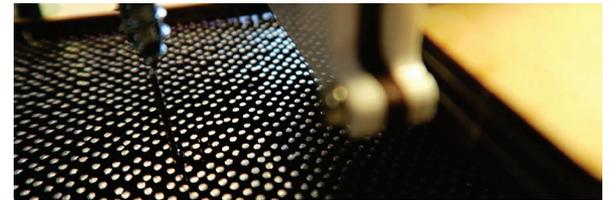
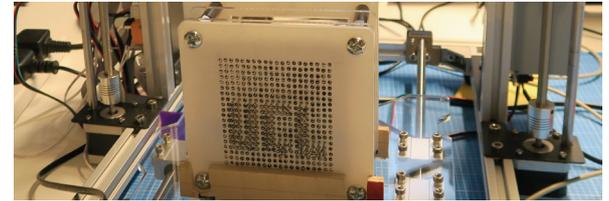
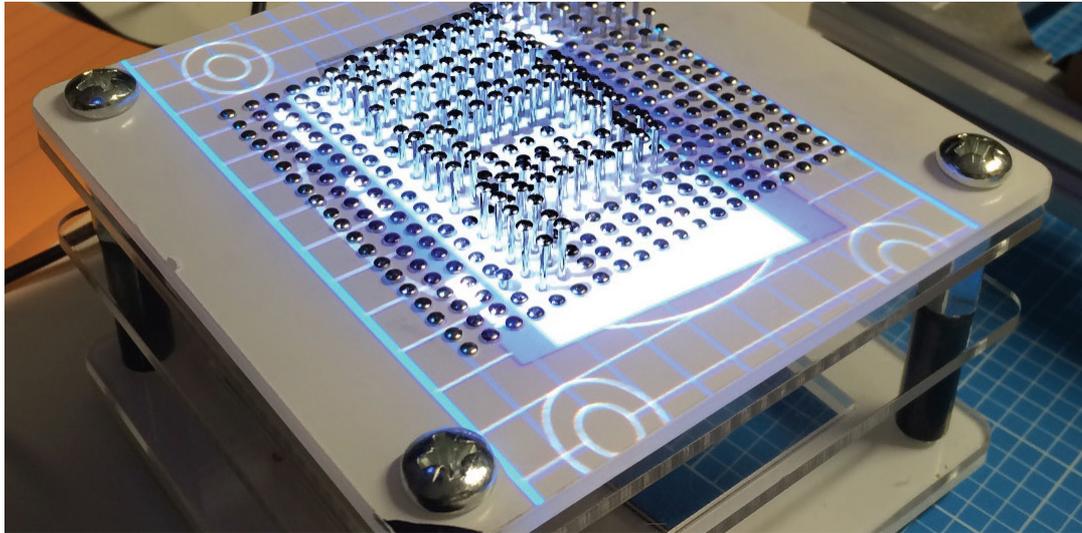
# 2.5D Tangible Shape Display



<http://www.lazylabz.net/portfolio/KollannurS.pdf>



[https://www.youtube.com/watch?v=JKKD\\_WTRWmU](https://www.youtube.com/watch?v=JKKD_WTRWmU)



This project is my dissertation in Human Computer Interaction with ergonomics. In this three month long project we explored different techniques for constructing a tangible shape display along with innovative actuation methods. Actuation methods include physical actuation and magnetic actuation (see figure 4). This project also explored various actuators including Computerised Numerical Control (CNC) and piccolo, an open source CNC-bot. Along with this research was carried out in identifying locking mechanisms for locking the actuated display elements. More about this project, including a demo video, can be explored from the links on the top right.

University College London – Mid 2015

# Bobo: An interactive toy



Bobo, is a experimental project in physical computing and prototyping. The key aims of this project were to create a “fun” interactive toy for children that could be remotely operated by parents or guardians when they are away. Additionally this toy could be used to assist in monitoring the health parameters of the child. A key innovation in this project was to use tangible elements like a toy to promote physical connectedness via a virtual medium. A full portfolio describing this work along with a video demonstration of the project is available in the links on the top right. It is to be noted that large toy manufacturers like *Mattel* are experimenting with similar concepts (see <http://bit.ly/1GvPfZe>).

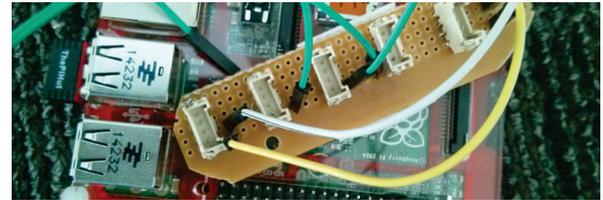
University College London – Early 2015



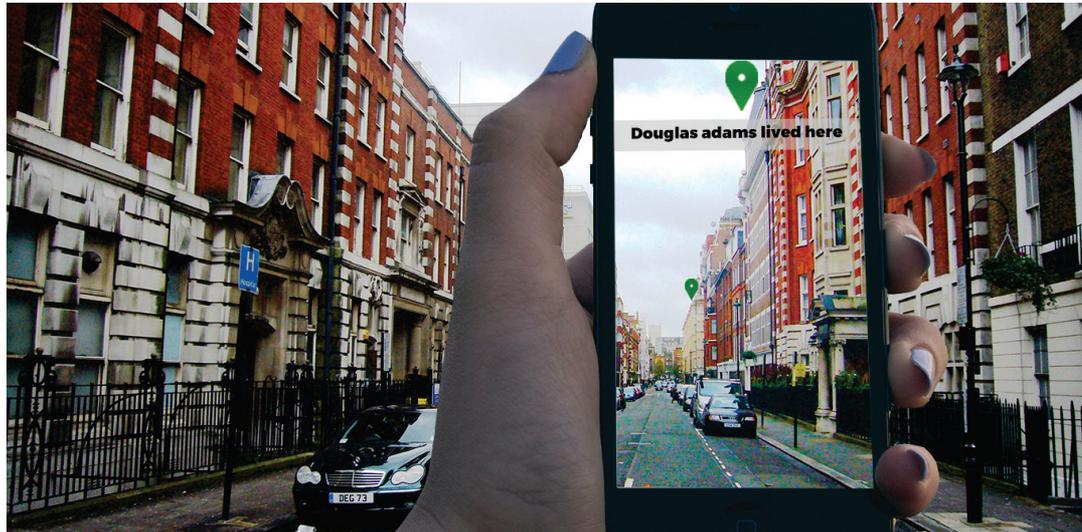
[http://www.lazylabz.net/portfolio/bobo\\_public.pdf](http://www.lazylabz.net/portfolio/bobo_public.pdf)



<https://www.youtube.com/watch?v=JslGH7EPn48>



# Designing for new cultures



This project is a design project carried out based on the outlines prescribed by CHI-2015 student competition: “design a product, application, technology, or service that enables people who are a new and completely unexplored user group in any country to appropriate things and technologies around them...”. This project was carried out using UCD or user centred design. A target audience segment was identified and then a persona was created.. Five concepts were ideated and developed. Once these ideas were developed it was validated against set parameters for evaluation and the final concept was further grown to create a mock-up along with a video demonstration.

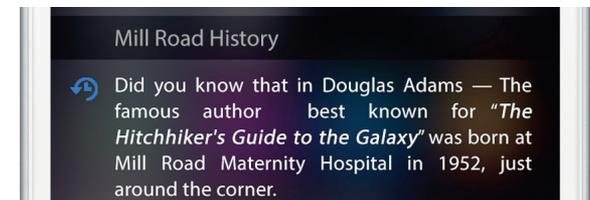
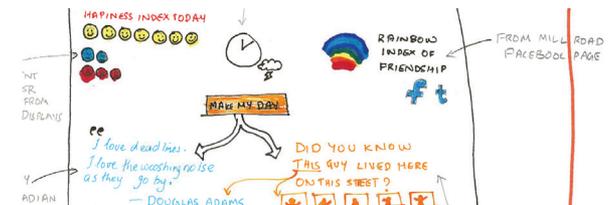
University College London – Late 2014



[http://www.lazylabz.net/portfolio/dp\\_public.pdf](http://www.lazylabz.net/portfolio/dp_public.pdf)

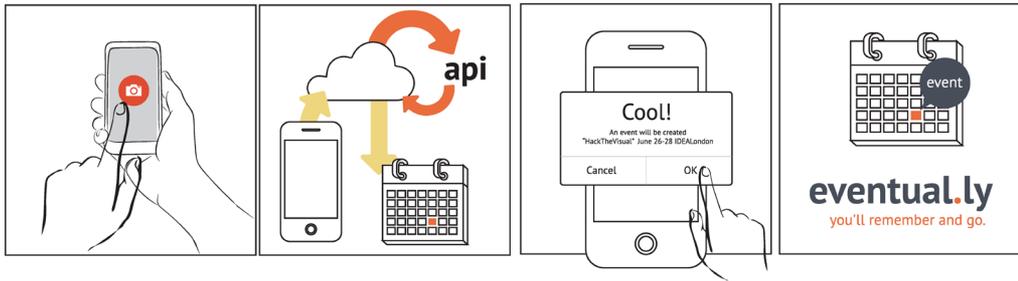


[https://www.youtube.com/watch?v=x20T\\_0scrZl](https://www.youtube.com/watch?v=x20T_0scrZl)



# Zero App ! eventual.ly

Take a picture of a poster "Friday Jazz in Southbank Centre at 5:30 on June 10th" and the event will be created on your calendar with the correct date and time.



'App o calypso' or 'App a geddon' are terms used to describe the overwhelming number of apps that are installed in all of our devices. Most people are now refusing to even explore a new app, raising concerns of privacy, limited space and bandwidth. For this reason in this hackathon, we designed & developed a service that heralds a no app solution. We believe this is the future of devices and to a certain degree a lot of apps in the market. This project creates an event reminder from photos by hooking into existing photo backup solutions like *Dropbox*, *Google Photos* or *iPhotos*. This project **won** awards at the event. Other hackers have imitated this concept in later hackathons. A video and presentation are linked on the top right.

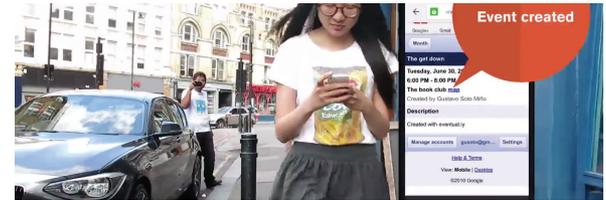
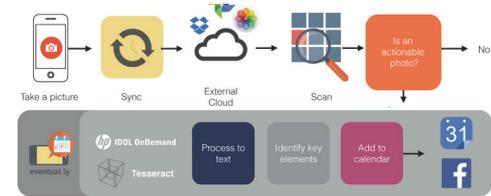
Hack The Visual, London – Mid 2015



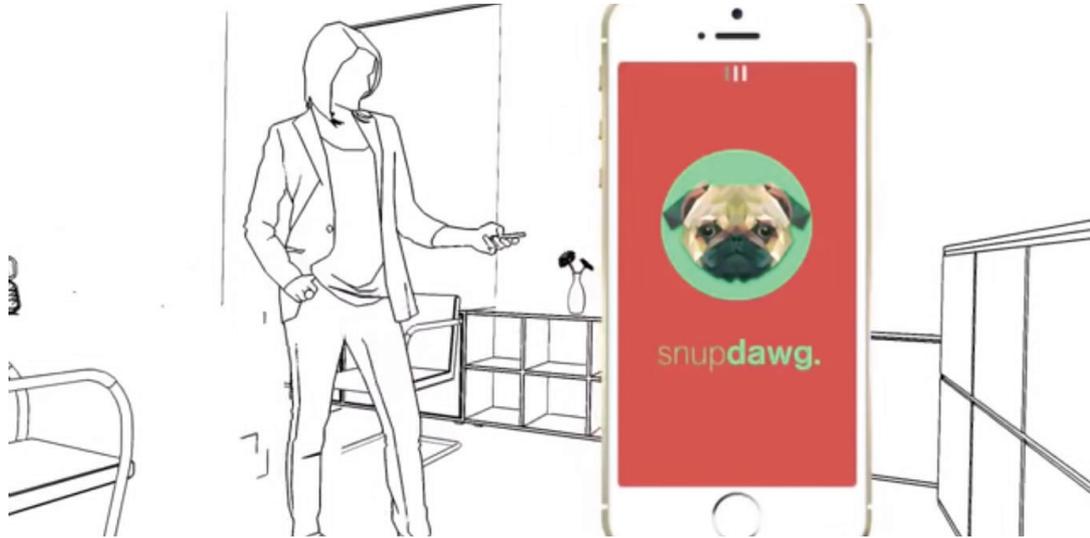
<http://www.lazylabz.net/portfolio/eventually.pdf>



<https://www.youtube.com/watch?v=K7CtOtKWvYI>



# Fitness Tracker for Pets



The project aimed to create a lightweight, multi-functional and highly intelligent device that tracks, learns and keeps you informed of essential developments in the well-being of your pet. It is waterproof and attaches to any collar. Key features include Activity Monitoring and Location Tracking. As a hackathon project this involved rapid prototyping and building a proof of concept within the stipulated time limit of 2 days. This project used a beta electronic prototyping platform from *Smartables* and 3D printed enclosures for the project. The demonstration video along with a business pitch website are linked on the top right section. Please note during the evolution of the project it was later renamed from *SnupDawg* to *Catch*.

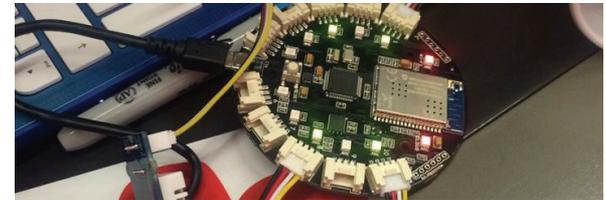
Seedhack London – Early 2015



<http://www.catchgreat.com/>

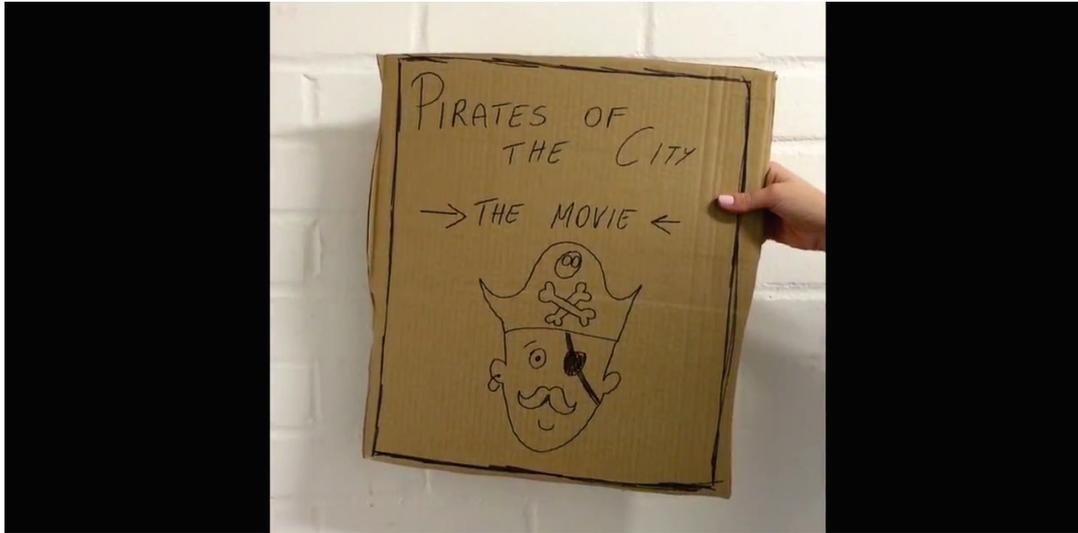


<https://www.youtube.com/watch?v=4oseyhJ2eOo>



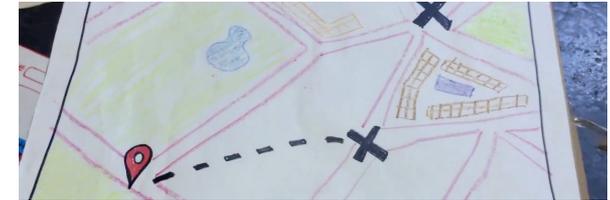
# Service Design: Pirates of the City

<https://www.youtube.com/watch?v=L6ZFw217Sxs>

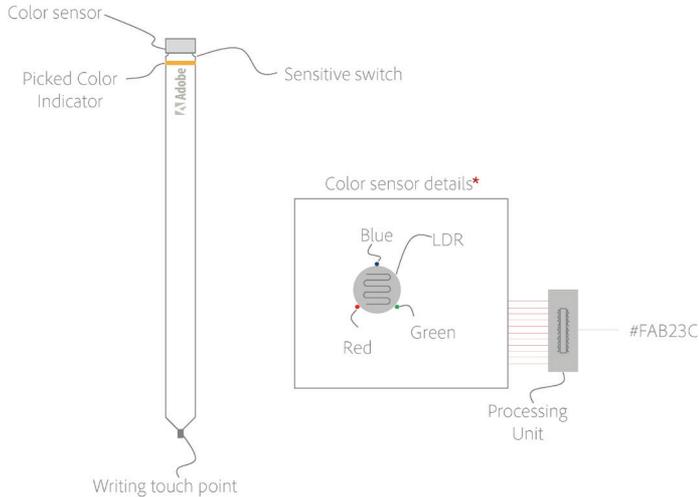


This is my first foray into service design. In this project the team decided to take free cycling in a gamified manner. Initial idea sketches were designed and tested with potential users. The idea was refined and then prototyped. The team created a video demonstrating how the project would work. The key concept of this project was to engage free cyclers in a 'treasure hunt' to find the products they might be interested in. Along with an easy to use application for the contributor. It also explored the potential of social interaction and bonds that can be developed over these exchanges that happen in the wild at the same time protecting privacy and anonymity of all users involved. Video for the project is available on the links section.

Service Design Jam— Early 2015



# Electronic Colour Sensing Stylus



This is a colour sensing tool which can be used along with Adobe Mighty and other similar digital tools. It is aimed at artists by allowing them to pick up colours from physical objects and using those colour in their creations. Ariana is a small compact colour sensor that can be integrated with Mighty (Adobe Pen). This can be integrated with photo editing and illustration software with minimal support and is very natural to use. This tool can thus help the artist to take colour inspiration from the real world and then use them to create digital art. The presentation and the whitepaper associated with this project is linked in the top right section.

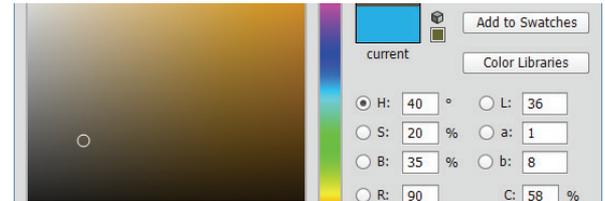
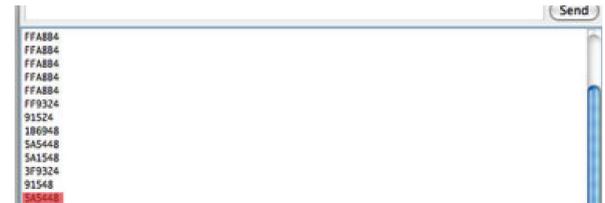
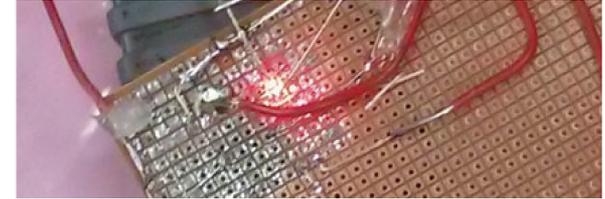
Adobe Research Labs – Late 2013



<http://www.lazylabz.net/portfolio/ColourPicker1.pdf>

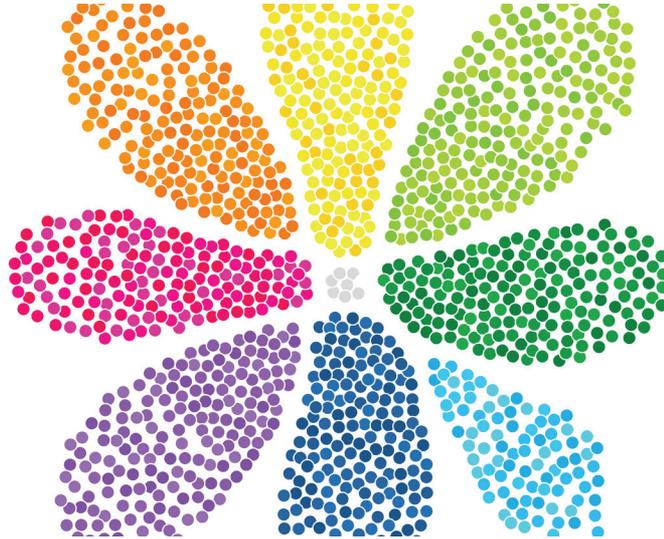


<http://www.lazylabz.net/portfolio/ColourPicker2.pdf>



# Data Visualisation: Emotions

<https://www.youtube.com/watch?v=OMipkgnDht4>

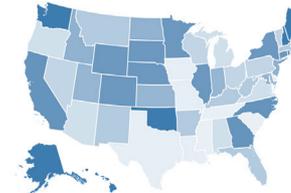
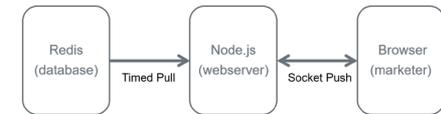
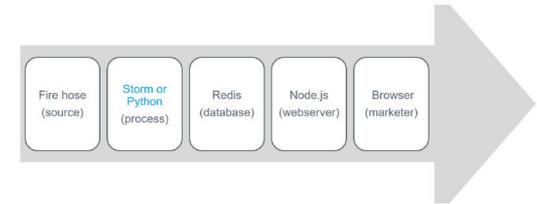
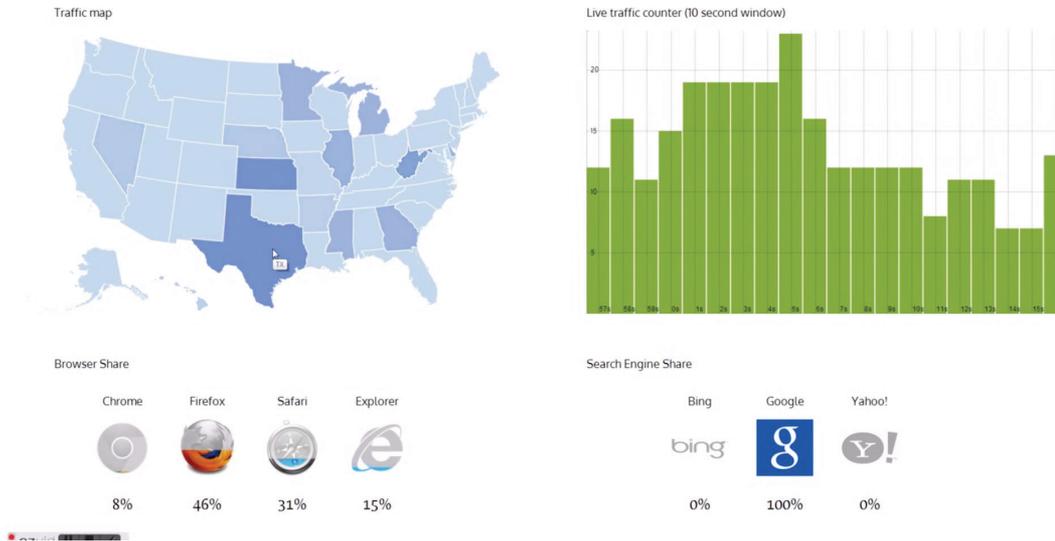


Adobe Research Labs created an algorithm to understand and evaluate deeper emotions that are underlying in social conversations carried out on *Facebook*, *Twitter* and other platforms. This gives valuable insight about customers to the marketers. The initial inspiration was based on Dr. Robert Plutchik's representation(1). Based on this concept a dynamic visualisation was created. A modified version of the same is implemented live in Adobe Social(4). The main picture has been showcased at various venues including the coveted sneaks at Adobe Digital Marketing Summit and was used to gather feedback of the feature. Video of this visualisation and others are linked on the top right.

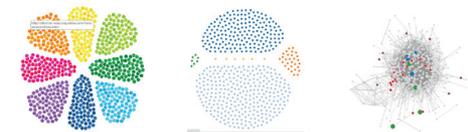
Adobe Research Labs – Late 2013

# Data Visualisation: Real - Time

 <https://www.youtube.com/watch?v=K0keiXo-xzY>



In the fast paced world of data analytics, most analysis and representation takes hours to days to scavenge and identify meaningful insights that can be used in visualisations. This project involved a complete overhaul of traditional data analytics workflows and rewrote it using modern tools like *Storm*, *Redis* to aid the new paradigm of visualisation. I made this end to end functioning prototype of this new model. Variations of this have been implemented in advanced versions of Adobe's Digital Marketing platform. With this we were able to process and showcase the data within about 30 seconds after the data point had been encountered by the monitoring service. Video demonstration is available on the links section.



Adobe Research Labs – Early 2014



# BBC: Situated Stories



The Design explores the potential for location based storytelling. We sought to extend the story world explored through BBC content into real locations in the world around the audience. We initially looked at the stories surrounding different types of content from news content, entertainment, drama and documentary as well as user generated content. Our competitor analysis revealed a number of existing innovations in news and user content. This indicated that Drama, factual, and entertainment offered more potential for innovation in our designs. A poster and a two page document of the project outcomes are attached in the links section.

University College London/BBC – Early 2015

 [http://www.lazylabz.net/portfolio/BBC\\_Summary.pdf](http://www.lazylabz.net/portfolio/BBC_Summary.pdf)  
 [http://www.lazylabz.net/portfolio/BBC\\_Poster.pdf](http://www.lazylabz.net/portfolio/BBC_Poster.pdf)

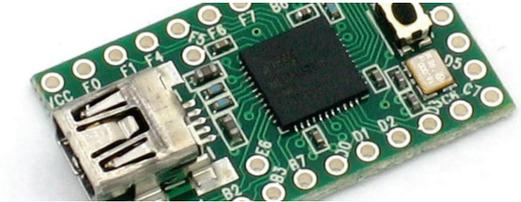


## Design opportunity



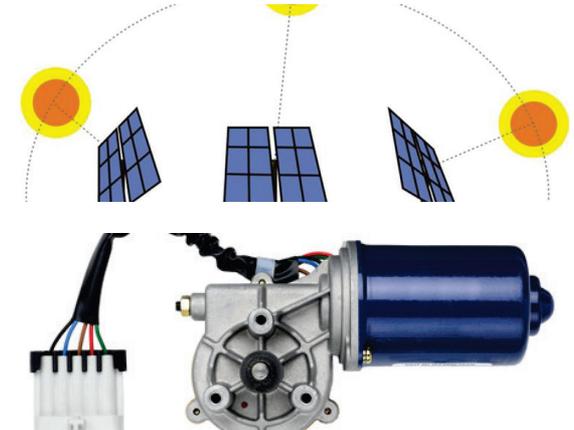
# Sun Tracking

 <https://www.youtube.com/watch?v=P7iTDZsGhsk>



```
80 print("count : ");
81 phex16(count);
82 print("\nbalance : ");
83 phex16(bal);
84 print("\n");
85 for(int i=0;i<count;i++)
86 {
87     _delay_ms( base );
88     phex16(i);
89     print("\n");
90 }
91 _delay_ms( bal );
```

An interesting project with a social impact. Along with Dr Jaiboi Kollannur, I helped create electronic system for solar tracking project for his clinic at Kunnamkulam, Kerala. Though there have been several tracking systems made in the past, this has been implemented with a cost factor in mind. The electronic control system based on Teensy 2.0, an Arduino compatible hardware was setup with a cost of approximately 1000 INR, which equals about 9.87 GBP. The video linked showcases the solar tracking system in demo mode. It is believed that this system has improved the efficiency of the solar panels and energy collection by about 20%.

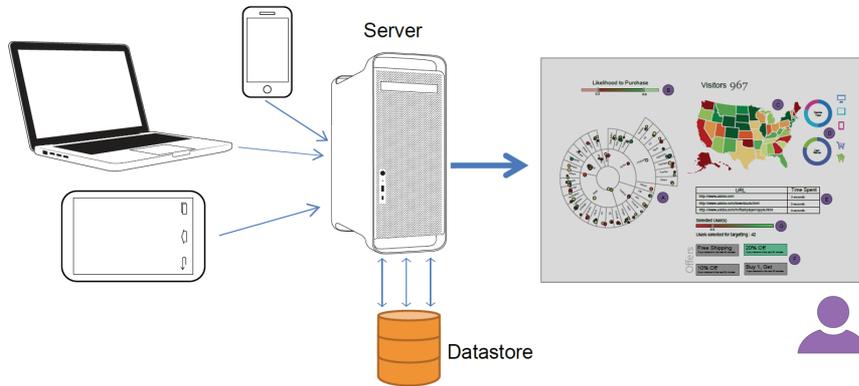


Independent – Mid 2012

# Real - Time visualization and targeting

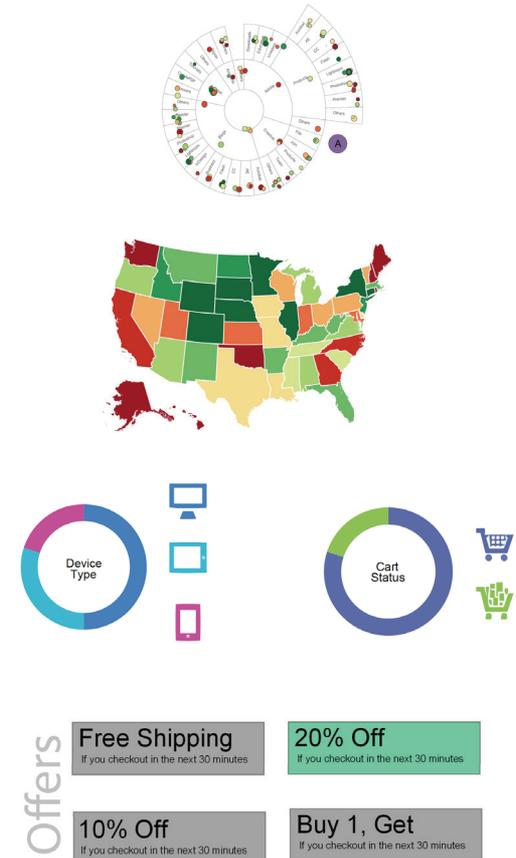


<http://dl.acm.org/citation.cfm?id=2611180>



This project was to create a real-time dashboard for marketers to visualize on-site traffic patterns and target selected user segments with custom offers. Markets have the ability to create appropriate visitor segments for targeting based on a multitude of attributes. The entire engineering, creative, and architecture of implementing this project was done as a showcase of the algorithm by me. The architecture involves creating a data stream from the webpages to a real-time processing engine. The data stream was processed and analysed using Apache Storm using bolts and sprouts to implement a streamlined processor for large data. This was published in the proceedings of SIGIR 2014.

Adobe Research Labs – Early 2014



# Talks



I have presented multiple talks on different topics related to my work at various events. These include talks on

- “Usability in Data Visualization” at UX India 2013 Bangalore
- “Adobe’s Predictive Technologies” at Adobe Tech Summit 2013, San Jose
- “Introduction to Rapid Prototyping” at Adobe Tech Summit 2011, San Jose
- “Adobe @ Adobe” at Adobe MAX 2011, Los Angeles

Various – 2010 onwards

 <http://tv.adobe.com/watch/max-2011-envision/adobeado/>

**MAX**  
CONNECT. DISCOVER. INSPIRE.

**2013 TECH  
SUMMIT**



**ux india**

