BECKY RUSH

FRONT END WEB DEVELOPER

"Becky Rush is a highly effective, multi-skilled developer who brings calmness, organisational awareness, and passion for data journalism to every project she participates in.

Toby Cox: Tech Lead, BBC News Visual Journalism

WHAT HAS TRUMP SAID ABOUT YOUR COUNTRY?

1 JOURNALIST, 1 DESIGNER
1 DEVELOPER

https://www.bbc.co.uk/news/world-us-canada-39732845

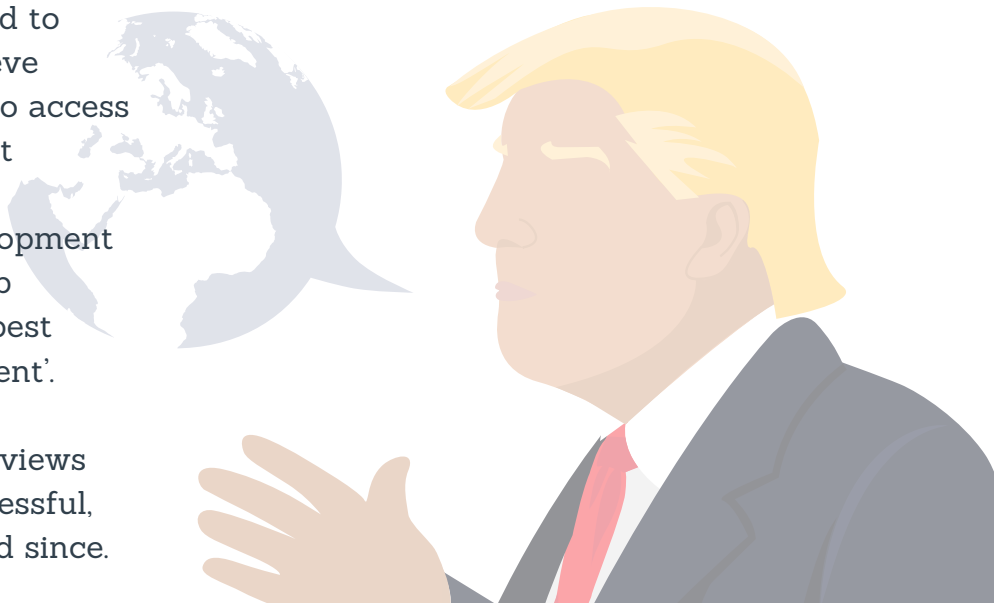
My first high profile BBC project as lead developer.

PROJECT OVERVIEW

A divisive president, famous for being more outspoken than his predecessors, had reached his first 100 days in office. To mark this, we created a fun, interactive piece highlighting his interactions with leaders from various countries throughout the world - including an emoji to best describe their relationship.

MY ROLE

As a trainee developer, I was excited to take lead on my own project. I believe strongly that users should be able to access our content, no matter their internet connection or browser of choice. I demonstrated this during the development of this project, which the senior web developer described as 'one of our best examples of progressive enhancement'.



The project received over 1 million views on the first day and proved so successful, that it has been continually updated since.

A VISUAL ANALYSIS OF UK NUMBER 1S

SOLO PROJECT

https://rushlet.github.io/ci301_data-vis/website/index.html

PROJECT OVERVIEW

Spotify produces quantitative data for every song in their library on characteristics such as ‘danceability’, ‘valence’ and ‘energy’. This data is effectively meaningless in isolation, so, I decided to give it purpose by analysing songs which have reached number 1 in the UK charts. I created some online interactive data visualisations to showcase my analysis. I made it more personal by encouraging users to log in with their Spotify account to see how their favourite songs compare with those that have reached number 1.

DATA GATHERING & ANALYSIS

I scraped the Official Charts webpage using python (BeautifulSoup). I then used the data from this via node scripts to obtain further data from the Spotify API. I combined this into a large dataset, then analysed it using R to find stories and patterns.

DESIGN

Because this was a scrollytelling article, I mocked up the design using PowerPoint which allowed me to simulate the scrolling mechanics and consider how the visualisations would be incrementally updated in accordance to the text.

DEVELOPMENT

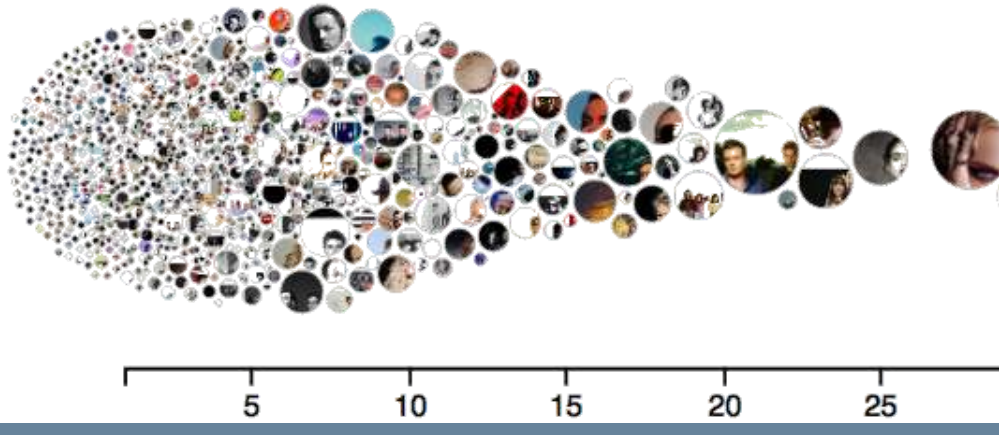
I built the website using HTML5, CSS3/SASS and JavaScript ES6 along with tools such as Gulp, Webpack and NPM to ease the development process. I created data visualisations, which showcase the data gathered, using D3. These are updated as the user scrolls through the text, a feature known as 'scrollytelling'. Users can also listen to previews of tracks as they read the content

TESTING

I wrote unit tests for key functions in JavaScript using Mocha & Chai. I used automated tests to check whether the graphs correctly updated on scroll and the handling of Spotify authorization using Ruby & Cucumber. Performance (eg load time) was tested using online tools.

PROJECT MANAGEMENT

I divided work into two week sprints - giving myself realistic targets for what I could achieve in this timeframe. At the end of each sprint I would review what I had achieved and use this to inform the next iteration.



CLIMATE CHANGE CALCULATOR

2 DATA JOURNALISTS, 2 DEVELOPERS, 1 DESIGNER

https://www.bbc.co.uk/news/science-environment-46459714

How are our food choices killing the planet?

PROJECT OVERVIEW

Oxford University had collected data on how we eat can affect the planet: how many Kg of CO2 are emitted to produce a selection of foods.

They approached the BBC asking for a way to highlight the data in a way that was easy to digest for users. We worked with the UX team to produce a set of user choices that, when selected, produced a comparison graph of other similar foodstuffs and your personal diet's contribution to CO2 emissions displayed in easy-to-visualise formats, such as equivalent miles in a car, hours of heating a home etc.

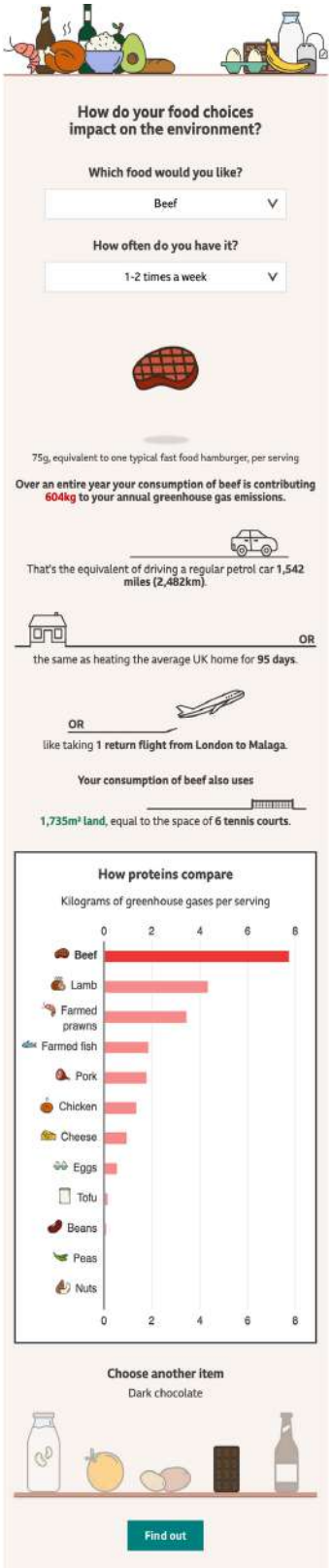
MY ROLE

I joined the project as early as possible while designs were not yet crystalline, which gave the whole team an opportunity to prioritise features and drop items that were unlikely to make our (extremely tight) deadline.

We divided the development tasks into manageable pieces and split them between myself and our new graduate developer. He had only been with the team a few weeks so asked a lot of questions and I was pleased that I was able to mentor him and help him to finish the job on time.

What I liked most about this project was how the whole team came together continually (on Slack, on JIRA, via email, in real life) to support each other and produce an informative data visualisation piece that was also translated into 10 languages for BBC World Service.

We even achieved the 2019 BIGGIES award for Excellence in the Use of Creativity with Data for this project.



POLITINDER PAIR PROJECT

https://rushlet.github.io/politinder/compiled/html/

An idea from conception to prototype

I strongly believe in democratic responsibility and wanted to create a fun app to engage more people in the democratic process. Discussing this (and how addictive Tinder is) with a friend, we came up with the idea of 'Tinder for Politics'. Swipe on policies to find your party match.

We set up a modern NodeJS working environment and scraped the data from They Work For You with BeatifulSoup. We wanted to see which bills had been voted for by which MPs to build a profile of which ones therefore were more likely to be something a Labour voter/MP would like vs those a Conservative voter/MP would like.

We successfully built a working prototype in a short space of time, implementing the Swipey JavaScript framework for the Tinder-style interface. This allowed us to quickly create an engaging way of 'voting' for bills and build a user profile, which we could then compare to the voting record of each party and calculate the user's best matches.

This was a really fun project to work on and taught me a lot about data gathering, sanitising, and categorisation.

HOUSE OF COMMONS DATA SHADOWING HANSARD

Proactive collaboration with other teams.

Having had some experience of data gathering and analysis, I wanted to learn more - especially in a professional capacity. I liaised with my manager and the data science team in Visual Journalism to organise a week of shadowing.

Hansard is an online portal which records every contribution to parliamentary debates since the early 1800s. My job was to scrape these files and output the contributions into structured CSVs for later analysis including natural language processing.

It was easy enough to get started - having previous experience using Python and BeautifulSoup for data scraping - but due to the markup used in the webpage it was a tricky task. I managed to successfully output formatted data for the majority of files, but at some point the structure of the pages changed - making it harder to differentiate between text and identify individual topics. I wrote a binary search to find the file when the markup changed and adjust the scraper accordingly.

FREEDOM TRASH CAN

1 JOURNALIST, 2 DESIGNERS
2 DEVELOPERS

https://www.bbc.co.uk/news/world-46116262

How can you make a drag and drop feature accessible for keyboard users?

When building the 100 Women Freedom Trash Can, this was what I had to figure out. I am proud that the BBC share my belief in an inclusive web, and champion that our content should be accessible by all. Finding a way to keep editorial's vision alive whilst ensuring that everyone could interact with our project was extremely rewarding.

For this particular project we worked with a designer in our Delhi bureau, who was creating all the icons we needed, and a team of translators responsible for 25 language versions. We worked closely to find solutions to challenges such as imagery which would be globally recognisable and animation techniques for best performance.

At times the project felt like it might come off the rails if no one took charge, so I spoke to our department project manager and we came up with the idea of creating a physical kanban board with a whiteboard and post-it notes. This technique was so successful that we have carried it forward to use on any project that is large enough or has a team that is spread across multiple time zones.

PAIR PROJECT

CROAKED

https://github.com/rushlet/ci328_networked-game

Could Pac Man be a multiplayer game?
Tasked with building an online networked game, my friend and I took a new spin on an arcade classic.

We divided the task up into two separate areas so that we could get the most out of our time and worked iteratively and collaboratively to build the game up piece by piece.

The game was built using NodeJS, Socket.io and front end javascript and we were able to incorporate multiplayer gaming from remote devices, AI opponents, and scoring so quickly that we even had time to work on the gameplay and aesthetics. I spent time designing level layouts, sourcing character assets and discovering music and sound effects, which brought the game to life.

Despite being a project to learn about concurrent networking, we worked together to create more than that, we created a game we are truly proud of.

FALLING THROUGH THE GAP

2 DATA JOURNALISTS, 1 DESIGNER, 1 DEVELOPER

https://www.bbc.co.uk/news/resources/idt-a524dd3a-c09c-4f09-bc03-c5006d75ef96

How do you render and animate over 10,000 data points?

PROJECT OVERVIEW

'Scrollytelling' has become a popular feature in online journalism. Combining 'scrolling' with 'storytelling', it refers to articles which expand upon a story as the user scrolls —usually updating a data visualisation of some type.
This technique has a strong place in the newsroom when used appropriately, so we decided to experiment with the format using the UK gender pay gap data.

MY ROLE

I led the development of this innovative new format for the department - working very closely with a designer and journalist to create it. I was excited to have the opportunity to use my expertise gained in *A Visual Analysis of UK Number 1s* to create this article for BBC News.

I focused on making sure it was performant and accessible - both raised as concerns when the initial project idea was pitched. I was given time to prototype the idea to see what would be possible and then had only a couple of weeks to build the real thing.

10,443 companies declared their disparity in the pay difference between men and women. We wanted to visualise these with a dot to represent each company. This was no small feat to render and animate, especially without crashing the page. I wasn't sure it would even be possible. After intense investigation, I achieved it using REGL and Canvas. I hadn't used REGL before, and it had quite a steep learning curve.

As an Accessibility Champion, I undertook extensive research into the accessibility implications of scrollytelling, discovering a number of potential issues with this format. One of my primary concerns was for users with vestibular conditions which may trigger motion sickness as a result of the animations in the article. As a solution, I implemented a toggle to give users the control to turn off the animated transitions.

It was ambitious, difficult but ultimately highly successful and I'm glad we took the opportunity to push the boundaries of our products. I gave a talk about this project at a meetup hosted by Shopify and Smashing Magazine in San Francisco shortly after it was published. I discussed the challenges we faced, how we overcame them to an audience of over 100 and received lots of positive feedback afterward.