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# net

Issue 304 : April 2018 : [net.creativebloq.com](http://net.creativebloq.com)

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★ WELCOME

# EDITOR'S NOTE

**►** There's no doubt that we've witnessed a dramatic change in web technologies over the years, as modern browsers and design tools have evolved in terms of both their power and creativity. We can now interact with vast amounts of information like never before. And this combination of power and creativity has produced some of the most dynamic websites out there. Whether it's hover transitions or more creative animated art, there really is no escaping the domination of animation on modern websites today.

This issue, creative couple and industry experts Ana Travas and Sergej Skrjanec explore why animation has become such an important design

element, what it offers websites, and where it's heading in the future.

Our second feature takes a look at Progressive Web Apps. Author and trainer Maximiliano Firtman reveals nine amazing PWA secrets to guarantee you create a good user experience in your PWA. Elsewhere, Sarah Boyd takes us through six essential data science skills to ensure you find, or become, the ideal candidate for a company's Big Data solution, while we also look at how bad design can have tragic consequences. Our Project section is headlined by a brilliant guide on rebuilding a 2004 Flash website in 2018, too.

Enjoy the issue!

## FEATURED AUTHORS

### SERGEJ SKRJANEC



UI/UX designer, creative front-end developer, co-creator of Animista, and judge at CSS Design Awards, Sergej and his partner, Ana Travas, explore CSS animation on page 60.

w: <http://wearec2.com>  
t: @sergej108

### MAXIMILIANO FIRTMAN



Maximiliano is an author, a frequent conference speaker, and a trainer at top companies around the world. On page 68 he reveals nine amazing PWA secrets.

w: <https://firt.mobi>  
t: @firt

### SIMON JONES



A software engineering director with a background in banking and financial services, on page 36 Simon looks at whether GraphQL is the future of APIs.

w: [simonjones.tech](http://simonjones.tech)  
t: @j\_a\_nomis

### BARRY WOODHALL



Director of Moken, the remote digital design agency, and founder of UiPie, Barry curated our Gallery this issue on page 40 – full of inspirational sites.

w: <http://www.moken.co.uk>  
t: @barrylwoodhall



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Photo: Cindy Boyce

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# EXCHANGE

Send your questions to [netmag@futurenet.com](mailto:netmag@futurenet.com)

Practical  
advice from  
industry experts

## THIS MONTH FEATURING...

### JOSH CLARK



Josh Clark is the founder of Big Medium, a New York design studio specialising in future-friendly interfaces for artificial intelligence, connected devices and responsive websites.

w: [bigmedium.com](http://bigmedium.com)  
t: @bigmediumjosh

### JON GOLD



Jon Gold is a technologist and attention activist researching the long-term future of design at Airbnb, focusing on the intersection of AI and the creative process.

w: [jon.gold](http://jon.gold)  
t: @jongold

### \* QUESTION OF THE MONTH

**How can we utilise multi-device design to increase engagement for a brand or cause in 2018?**

Daniel Schutzsmith, Hudson Valley, New York

**JC:** The real opportunity is to seek out a model that's not engagement. When someone says 'engagement', I hear 'theft of attention'. An overwhelming tide of technologies, brands and causes vie for our attention, and it's not sustainable. We get design tactics that manipulate people into spending more time in a product than is in their own best interests. The question of the moment: how can we create experiences that focus and respect attention instead of distracting it?

Amazon and Uber popularised one-click interactions that actually limit engagement and let you get on with your life. How might we bring a similarly efficient, transactional model to more experiences? Get the message across, make the sale and then move on – without the FOMO. Few people wake up in the morning saying "I can't wait to get out there and engage with some brands." Let's concentrate on crafting interfaces that fit people's lives instead of forcing the reverse. Respectful interfaces pay off for everyone.



Uber doesn't seek 'brand engagement'. It uses one-click interactions to actually limit engagement and therefore let you get on with your life

### AI & DESIGN

#### SELLING DESIGN

What are the best ways to sell the idea of design systems to a company?

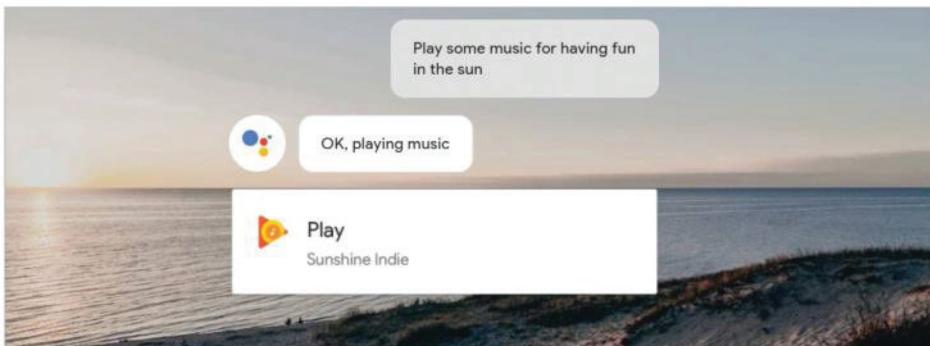
**Daniel Schildt, Helsinki, Finland**

**JG:** A well-engineered design system rapidly speeds up the product process: less time spent on trivialities, and

**more time to focus on what matters.**

By thinking in systems rather than individual artifacts, each designer becomes a super-powered multiplier. There's surely a bottom line impact to consider here!

That said, design systems are big investments; especially in this



Interfaces of apps like Google Assistant need to be more transparent about what they can and can't do

relatively early stage in their ideation; mainstream design software still doesn't make them easy to work with. It could be that a design system *isn't* the right fit for your company due to your financial resources, their complexity, or if you have a small and manageable design surface area. That's okay too!

#### AI & DESIGN

#### ADAPT TO THE NEW

Do you think we will need new/different design patterns for AI-generated content?

**Olivier Heitz, Zurich, Switzerland**

JC: Definitely. Perhaps more important, we'll also need a new perspective on our work. The more I work with machine-generated content, conclusions and especially interactions, the more I move from designing paths through a fixed architecture to simply trying to anticipate all the weird stuff the machines come up with.

If I can't know what my bot will say or do, how might I design the shape of the conversation? Now more than ever, the work is to set appropriate expectations for users and to channel behaviour in ways that match the system's ability.

We must find new ways to create honest interfaces that are upfront about what they can do, how you use them, what they're good at, when they're confident and when they're not. Impressive as they are, the Alexas, Siris and Google Assistants of the world are not yet very good at these things. We need to develop not only an interaction model but a kind of body language for these systems to help them express their abilities and confidence.

#### AI & DESIGN

#### PREPARE FOR THE FUTURE

How do you think the workforce and society at large will be affected by the increasing job losses that AI will cause?

**Leam James, Manchester, UK**

JG: A first step would be realigning AI researchers to be more ethical and seriously avoid (re)creating biases in systems, but that's not enough. We have to get political and look to radically reinvent our economic and social systems to accommodate the future we're inevitably going to encounter – we can't afford for automation to migrate even more wealth towards the most privileged people in society.

#### INTERACTION DESIGN

#### NEXT BIG THING

What will cause the next creative renaissance in interaction design?

**Matt Greenhalgh, London**

JC: We're in the thick of it now. Machine learning is the oxygen stoking the emerging generation of technology. It enables predictive interfaces, smart assistants, virtual/augmented reality, voice recognition, camera vision – all of it. Machine learning lets software interact with all the messy stuff that people create – pictures, speech, text. And this enables us to create software that promises to understand us on our own terms.

For designers, that means machine learning is our new design material. It's becoming urgent that designers get involved; the design and presentation of data is just as important as the underlying algorithm.



#### 3 SIMPLE STEPS

How do you think the value of design will change as it becomes more and more automated?

**Leone McCoy, Cumbria, UK**

#### Higher-level thinking

+ JG: The next few waves of change in design will see a closer collaboration with software that understands how, why, what and for whom we're designing; more *augmentation* than *automation*. We'll spend less time on repetitive tasks like dragging rectangles around or making redline specs for engineers, and instead devote more time to higher-level product and business thinking.

#### Tempo and texture

+ I imagine the role of the designer will move closer to an orchestral conductor: not playing an instrument themselves, but rather manipulating the full timbre, tempo and texture of a large group of people.

#### People power

+ The role of the creative director will be democratised, and the person-power of large design teams will be distributed to anyone. I'm excited.



## COOL STUFF WE LEARNED THIS MONTH

### OPTIMISING SVG TEXT AND IMAGE DELIVERY

There are seven ways to embed SVG on a page. In this article Sara Soueidan uses two of them to embed images so text within them remains real text that is searchable and selectable.

[sarasoueidan.com/blog/optimizing-svg-delivery-with-svg/](http://sarasoueidan.com/blog/optimizing-svg-delivery-with-svg/)

### A LETTER RE GOOGLE AMP

This petition calls upon Google to make changes to its AMP news-reading service. Signatories request Google stops preferential placement in search results to AMP content, and makes it clear to users that AMP content is being served by Google, not the original site.

<http://ampletter.org/>

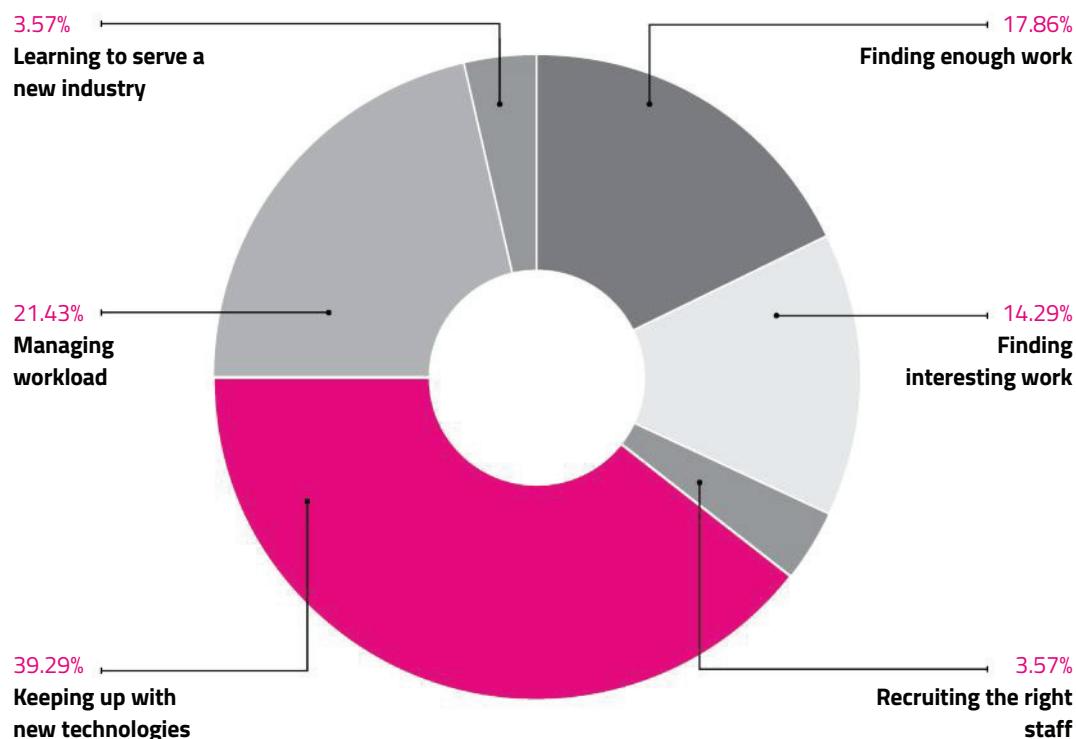
### I'M HARVESTING CREDIT CARD NUMBERS FROM YOUR SITE

Author David Gilbertson demonstrates how easy it would be to hide malicious code within an npm package and get that code running on thousands of sites in a way that's undetectable, despite your Content Security Policy and other security measures.

<https://hackernoon.com/im-harvesting-credit-card-numbers-and-passwords-from-your-site-here-s-how-9a8cb347c5b5>

### \*THE POLL

# WHAT DO YOU EXPECT WILL BE YOUR BIGGEST CHALLENGE OF 2018?



## From our timeline

What are your favourite web design podcasts at the moment?



@highrespodcast by @erondu gives amazing insight by industry leaders that is helpful to young designers and team builders.

[@kylewilkins\\_](#)



@syntaxfm, by @wesbos and @stolinski, Internet Marketing by @doctorpod, Honest Designers Show (includes cross topic advice) by @designcutsdeals, @CynicalDevs by @JamesStuddart @PaulWritesCode



Definitely @DesignLifeFM hosted by @femkesvs and @charliprangley. It's relatable and full of awesome advice.

[@\\_tashhockey](#)



@PresentableFM (@\_RelayFM) for Jeffrey @Veen's perspective on design trends and methods; @ShopTalkShow for @Davatron5000's & @ChrisCoyier's practical advice; @TheBigWebShow (@5by5) for Jeffrey @Zeldman's experience;

@TheWebAhead (@5by5) for @JenSimmons's expertise.  
[@RealAlanDalton](#)



@syntaxfm  
@ShopTalkShow  
@DeveloperTea  
@thewebahead (RIP?)  
@styleguidesio  
[@mikeriley131](#)



Definitely @presentablefm by @veen! Great relevant hosts! Smart and up to date.  
[@Benjieboo](#)



Syntax @stolinski & @wesbos; an awesome podcast of tasty treats!  
[@Sulcalibur](#)

# FEED

People, projects & paraphernalia

## THIS MONTH FEATURING...

### WORKSPACE 12

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### CLIENTS FROM HELL

This month's Clients from Hell looks at pre-Christmas chaos and unreasonable client expectations

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### BEYOND PIXELS

**Joshua Garity** explains how he learned about user experience and psychology from the film industry

14



## HYPEBOUND

Designer and founder of HypeBound, **Gareth Evans** give us a peek into his Port Talbot design studio

### \* WORKSPACE

My design studio is part of a shared workspace in my hometown of Port Talbot, South Wales. After initially working from home for six months, I took the opportunity to move here and work alongside other creative professionals. I have been here for two years. It's a very friendly and fun environment. Everyone here is passionate about the work we do and willing to share knowledge, ideas and discoveries.

We have a spacious room with several workstations, beaming with natural light thanks to four large windows; it's an open-plan communal area with a large meeting table with chairs and a

bench – an ideal gathering place for project meetings, brainstorming ideas and researching. We also have additional rooms for private meetings and video calls.

The most prominent part of my workspace is the iMac (1) where the majority of my work is carried out, from designing graphics for digital and print to designing and developing websites. I have a second monitor that I use for coding, emails and documents, saving the vibrant design work for the 27-inch Retina Mac screen.

With every project, I start off by sketching ideas and wireframes using a clipboard (2) with grid paper, an essential for me. When

coding websites, I use this to outline the layout, and write pixel measurements, font sizes and weights, and any other notable things. I still find it useful to pen notes on paper instead of doing everything on screen. To write and sketch I use a pack of multi-coloured fineliners (3), which bring clarity to my scribbles.

Another important asset to my workspace is my headphones (4) – not just for the obvious reason of being a music nerd. While they allow me to listen to playlists and radio while working, they also allow me to get into the zone to listen to tutorials, webinars and podcasts to boost my knowledge.

My favourite item on my desk is the photo of my daughter (5) – something I can look at during working hours to make me smile. ■

**PROFILE**  
Gareth is the designer and founder of HypeBound, a design studio in Port Talbot. He also organises Design Swansea.  
**w:** [hypebound.com](http://hypebound.com)



★ HOW TO

## HOW TO WORK OUT YOUR FEE

Coming up with the figure of what to charge clients can seem like a bit of a dark art, so we asked the @netmag followers how they decide what to charge when pitching for work.

### TIME-BASED FEE

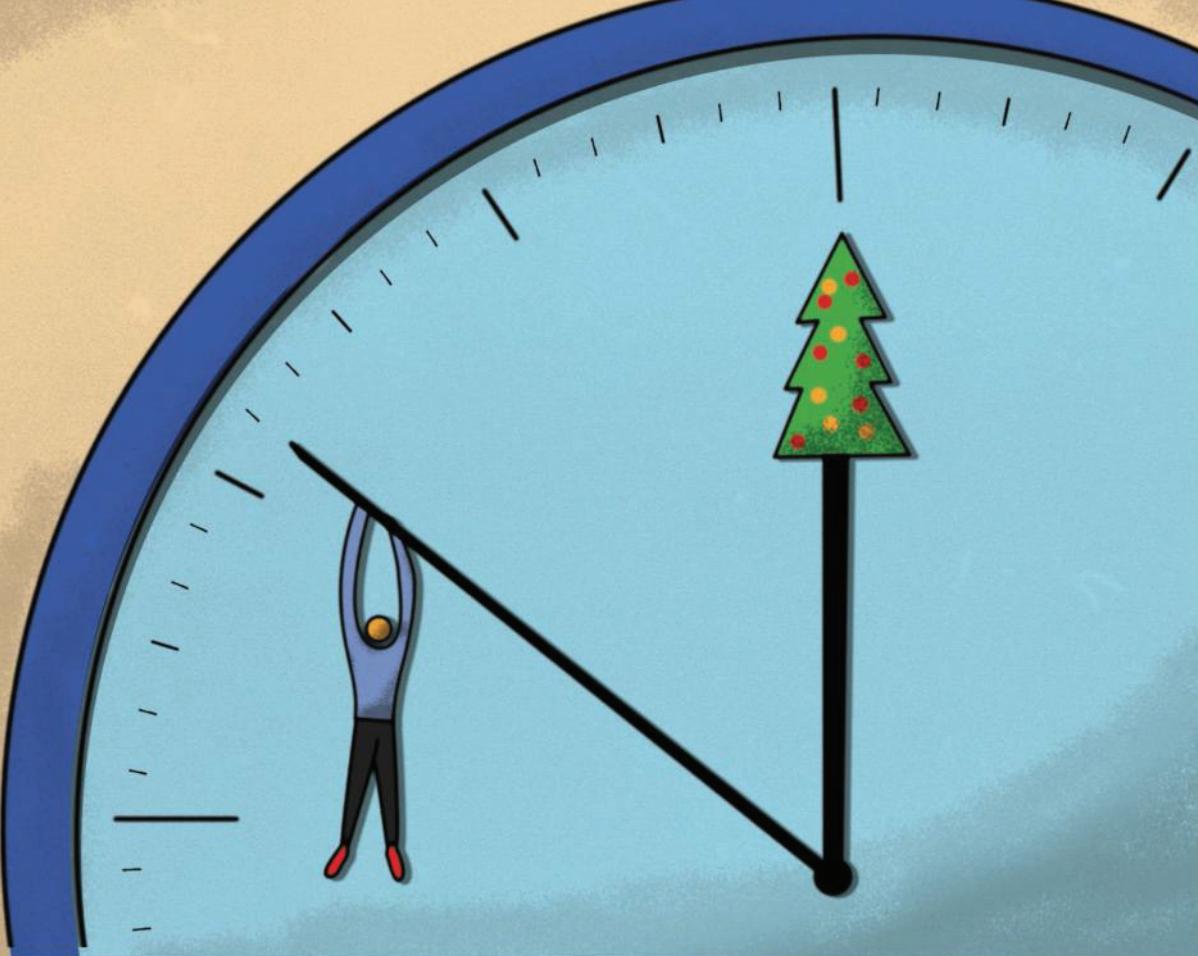
@Sonny\_prince uses this formula: "Project setup + (hourly rate \* hours guesstimated on initial wireframe) + 25% contingency time." @DigitalDotsCo uses a day rate plus 10% QA time. @RichardCarter also bases his fee on a time estimate but says there "can be quite a bit of give in that if it's a project we really love!"

### VALUE-BASED FEE

@wixshowcom works out a price "by figuring out what it is worth for the clients and then go for that amount." @SarahSunnyBoyd has a similar approach: "After covering fixed/variable costs, focus on the strength of the benefits your organisation proves it can offer to customers via its capabilities and price accordingly to what you believe users will pay."

### RESOURCES

@kianryan points us in the direction of this episode of the *Tested* podcast: <http://www.tested.com/art/makers/807703-happy-new-year-still-untitled-adam-savage-project-1218/> and @iDGs recommends Dan Mall's ebook, *Pricing Design* by A Book Apart, which no doubt offers some excellent advice.



# CHRISTMAS CHAOS

**Exclusively for net:** The latest in a series of anonymous accounts of nightmare clients

### ★ CLIENTS FROM HELL

My team and I were working on a project for a client towards the end of last year. Client: We need this delivered before Christmas. Me: Here is our first draft – please review it and give us your feedback ASAP. Our office is closing in a week for Christmas, but we can turn around the revisions quickly.

Client: I'll get my feedback over to you today. I must stress that I need this before Christmas. No feedback arrives.

Me: I'm following up on that feedback. If we don't get it before we close for Christmas the project won't be finished in time.

Client: Right, sorry! I'll get it to you soon. I really, really need this finished before Christmas.

The feedback never came. I chase them again, reminding them we were very pressed for time. Client: The feedback will be with you by the end of the day. I can't stress how much I need this finished before Christmas. It's really important.

At 4pm on the day our office closed for Christmas we received an email with feedback, demanding we get the project finished before the break. Our team stayed late and got a new version to them. We got this response:

Client: Why did you make the changes?! I didn't tell you to make the changes! That feedback wasn't final – it hadn't been signed off!

Long story short, the project was NOT finished in time for Christmas.

Come January, I received an email telling me that the campaign my team's project was supposed to be part of is almost over and at this point our work is practically worthless because it wasn't ready before Christmas.

I say good riddance to that client and 2017.

**CLIENTS FROM HELL**  
[clientfromhell.net](http://clientfromhell.net)



## STUFF I LIKE



**TIM MAGGS**

Freelance designer

[timmaggs.co.uk](http://timmaggs.co.uk)

### ABSTRACT

Like me, I'm sure you enjoy trying to work out which of the 100 Sketch files in a folder is the latest version. But it turns out some people don't. Abstract's version control for design files saves countless headaches and conflict issues.

[goabstract.com](http://goabstract.com)

### HEMINGWAY EDITOR

This web-based text editor aims to make your writing bold and clear. Often my sentences use nonessential, superfluous, repetitive words.

But with Hemingway, no more. Useful when writing a design documentation, or a net magazine column.

[hemingwayapp.com](http://hemingwayapp.com)

### HOW I BUILT THIS

I've been hooked on the *How I Built This* podcast for some time. Presented by Guy Raz, the show focuses on some of the world's best known brands and how they've evolved into successful businesses. Great inspiration.

[npr.org/podcasts/510313/how-i-built-this](http://npr.org/podcasts/510313/how-i-built-this)

# THE UX OF FILMMAKING

**Joshua Garity** explains how he learned about user experience and psychology from the film industry

\*BEYOND PIXELS

**>** Long before I worked on my first films or commercials, I cherished the experience of going to the theatre or renting movies with my grandfather. I'm not sure if it was an innate interest in the complexity of the colours, the angles the director chose, the score, and the performances of the cast, or if it was something I learned through experiences with him, but it's such a large part of who I am today.

Experiencing a great film and having an emotional response due to an infinite amount of small decisions from hundreds of talented people working towards a single goal is always inspiring. In fact, it can be life changing. Filmmaking is a masterclass in empathy. Nearly 20 years ago I helped craft compelling storytelling elements that would pull viewers in, form bonds with leading characters, and allow the audience to relate with complex situations.

It wasn't until I experienced the utter chaos of producing a multi-million-dollar film with A-list actors that I made the jump to marketing. I wanted to play in an industry that would allow me to do big things and see immediate results, without waiting years for a finished product. I wanted to apply the same behavioural framing to marketing and web design, understanding what a

customer's motivation was and guiding them towards it in a valuable way – an approach that not many were doing at the time, and roughly 15 years before UX became the buzzword it is today.

After successfully marketing films by building interactive websites that allowed visitors to experience the atmosphere, characters or moments of a film, I made the decision to start Candorem – an award-winning user-experience agency based in Wisconsin (USA).

We're still using a version of the same methodology I established early in my professional career with filmmaking. The ability to take organisations through workshops and guide them through the minds of their customers to better deliver brand experiences is fascinating.

Understanding the motivations of an audience and knowing when to use those small moments to instil joy, trust and comfort is the definition of user experience; just like filmmaking. ■

\* PROFILE



Josh is the founder of Candorem, an award-winning UX creative agency, and UXTriggers.com, a design psychology analysis tool.



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- ✓ Domain included\*
- ✓ For all industries
- ✓ NEW! Online Business Card:  
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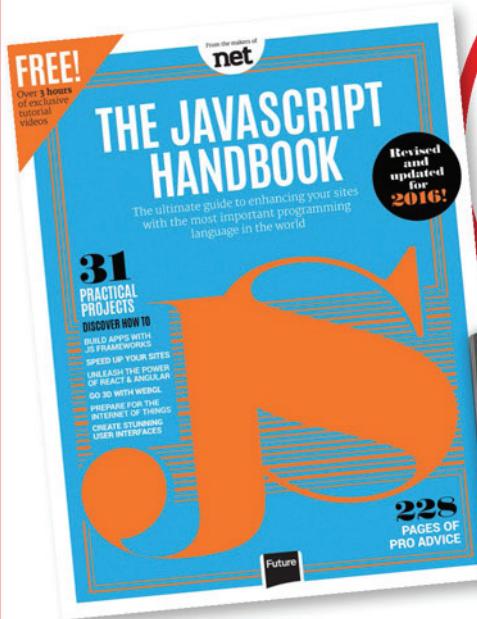


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Amy Hennessey Group editor-in-chief



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# VOICES

Opinions, thoughts & advice



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Photo: Cindy Boyce



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★ BRIEFS

## HOW TO WRITE THE PERFECT BRIEF

Salad's **Daniel Ward-Murphy** reveals the 12 points to writing a brief for your agency



Before we get started with the ins and outs of crafting the perfect brief, the first thing to remember is that you shouldn't make it too long. Don't be obsessed with making it too short, either. Only include the information you need to include. Each client and project is unique and will likely require a different amount of information than the previous brief. Ignore the people who bang on about always wanting a one-page brief; it's horses for courses.

So now we've established the size, what should the brief include? There are 12 fundamental pieces of information that give us a fantastic basis to get started:

### 1: THE TASK

What problem needs to be solved – what's the focus? Is your website the first point of contact? Your most valuable sales channel? Or does it just function as a glorified business card?



## 2: THE DELIVERABLES

What actually needs to be delivered? Flesh this out in as much detail as possible in as clear an order or format as possible. Bullet points are good here to keep the information ‘digestible’.

## 3: BACKGROUND INFORMATION

This is a depository for relevant information. It can be communicating what you do in a bit more detail or explaining what has led you to write the brief, such as business decisions supporting the project, context for the project and reasons that have led to this project’s emergence. Get your agency up to speed with where you’re at.

## 4: THE OBJECTIVES

What does this work need to achieve? What must the project do or communicate? This is also a good place to explain any key challenges/opportunities surrounding the project.

## 5: THE TARGET AUDIENCE

Who is this work for or talking to? And what do we know about them? Who are the specific audience profiles to be considered? How will they interact with this work and in what contexts?

## 6: CHOICE OF CHANNELS

What channel will this work live in? Is it known at this stage? This is increasingly part of our role at Salad, and we rarely approach projects channel-first. In fact, this usually comes last, once we have a deeper understanding of what needs to be said and to whom.

## 7: THE KEY MESSAGE

What are we saying? This is perhaps the most important section. Answering it effectively can mean a large research programme, adhering to previous brand work/campaigns or simply making a call after some planning work.

## 8: THE BUDGET

It's easy to say “how long is a piece of string?” here, but ultimately no one wins. Any indication of the affordability from

client side will help you to scope out the project in the most cost-effective way. Give a ballpark if an exact figure isn’t known – and give an indication if there may be a second phase of investment.

## 9: MEASUREMENT

How will success be measured? The objective(s) should be so closely linked to the idea and the work.

## 10: ANY MANDATORIES

There will always be some things that must be avoided or included in the work. This is such a crucial, directional section. Give direction; failing to mention some client preference here can be critical. It can be as crucial as you have to include X, Y, Z, or they don’t happen to like the use of capital letters.

## 11: POSSIBLE IDEAS

Don’t be afraid to give some starters for ten in terms of what the solution could look like. A secure creative who is confident in their own ability should not be afraid of taking a good idea and running

with it. It can also help to spark a different idea.

Nothing is final until the work is produced, and nothing should be sacrosanct. Let your creative team challenge it if it needs challenging. The flip side is that creatives should trust their planners to be good at their job.

We are huge believers in the value of a brief, and delivering against it is always our goal. Our proposition of Beautifully Effective® overarches everything we do – and this helps us to achieve success.

## 12: TONE OF VOICE

This is critical if your agency’s role includes the written copy throughout a site. How should we talk to the audience? How do we communicate as this brand? If this hasn’t been defined, you can’t just leave it blank – it’s crucial, so take time to get this bit as right as possible. Without it, consistency is almost futile. ■

**\* PROFILE**  
Daniel Ward-Murphy is strategy director at Salad. He has held strategic roles for over 15 years, in which time he’s guided thousands of briefs.



★ DATA

# 6 ESSENTIAL DATA SCIENCE SKILLS

Illustration by Kym Winters

**Sarah Boyd** examines the crucial considerations to ensure you find, or become, the ideal candidate for a company's Big Data solution

Where our global markets continue to evolve, becoming increasingly efficient, candidates and firms across multiple industries seek to assess key drivers of change within often saturated markets, maximise their business strategy, and excel above their rivals. Given the increasing force of competition in the recruitment for roles within data and analysis, attracting the best to your business is vital. Demand is forecasted, and while data is making its mark, the best place to be is on the ground floor of this 'data awakening'.

Organisations recruiting for data roles should ensure that although executives understand that 'Big Data' can refer to actual dataset size, they realise it can also refer to ensuring firms are data-driven from the bottom up. Before perfecting your in-house data aggregation recruitment process and establishing an assessment approach for new candidates through combinations of LinkedIn/CV review, reference verification, targeted interview questions, and assessing employees/peers for referrals, take a step back and establish a few foundation factors that are crucial to scoring a candidate with an above-average career trajectory, who can meet all of your firm's key performance indicators and more.

## SIX RECOMMENDED SKILLS

### 1. Statistics

Setting out to make the jump into big data enterprise? Let's boil it straight down to number crunching – the 'soul' of Big Data Science. Regardless of the increasing amount of unstructured data being incorporated into

organisational data strategies, a large proportion of which is actively collected and stored, being made ready for analysis, is still with no surprise, in numerical format. The half-way candidate must not only be able to demonstrate previous experience in data reduction and translation to quantifiable figures, but also display a strong career trajectory focusing on maths and statistics.

But let's look for the candidate that will take us the extra mile. As a business manager or specialist recruiter at this stage looking for the top band of big data new hires, you may request a candidate to provide an example of how they have contributed to or influenced organisational KPI improvement using their data analysis. This opens up an opportunity for the candidate to demonstrate their knowledge, efficiency and creativity – keeping in mind that the highest scored answer here will evolve around the system that they developed to arrive at the analysis destination with expertise in some of our number-crunching tools, like SAS or Stata. Always remember: systems are the key to your Big Data treasure chest of candidates and organisational survival within competitive industries.

### 2. Computer science

Noticed an eye for algorithms that can easily process data into insights? Think you've spotted the candidate who has experience in subfields of databases, cloud computing and machine learning? Let's dig a little deeper and look for the evidence of familiarity with a broad range of open-source technologies, sifting the active candidates from the passive, in talking about Python, ►

- Hadoop and Pig; all considered the milk to your cereal in terms of providing a solid base foundation for the majority of data science projects.

Candidates recruited for their current knowledge alone are standard selectees for an organisation at this stage, and firms seeking to overcome possibilities of lagging behind or carrying stale capabilities will look for a proactive individual who demonstrates a passion for learning, continual improvement and interest in new systems for integration.

### **3. Analytical skills**

Need a candidate who can make sense of your newly deployed data strategy containing amounts of data that can only be compared to ‘unending’? Need a trend identifier who not only determines relevant data to targeted questions, but also interprets data establishing links and causes? Then you are looking in the right direction for a successful candidate. The demonstrated analytical skills are a crucial element to recruiting a key performer, and invaluable in transforming your business’s monotonous data into plans of action.

### **5. Business skills**

The rarity of resources via candidates who demonstrate a collective understanding of business, statistics and technical aspects strongly correlate to and serve as one of the main reasons for the demand in Big Data roles today. A key candidate for recruitment within an industry should not only showcase an ability to manage and interpret data; but apply, apply and apply. A data scientist who has the skills to double your business’s impact and climb the ladder of success with you, should display a firm understanding of the organisational goals/objectives, along with a grasp of key performance indicators in order to have an insight geared towards recognition of the business progressing in the right direction by processing and analysing the relevant data.

### **6. Diversification**

Big Data is becoming a revolution in almost every industry, and organisations that are developing a clear data strategy are emerging as leaders in their fields; the emergence of which means the candidate who can assure a firm of their ability to develop new methods of data

**“Firms seeking to overcome possibilities of lagging behind or carrying stale capabilities will look for a proactive individual who demonstrates a passion for learning”**

Locate the candidate who not only knows how to analyse but is also aware of the benefits of this skill to the organisation. For example; Monitor IM Resources per project/region for efficiency and forecast required IM resources.

### **4. Communication ability**

When it comes to data scientists and number crunching within the firm, it's time to report findings and visualise the end goal for the organisation itself. Increasingly fast-paced businesses are looking for a collaborative set of skills, and seek both interpersonal and written communication skills when searching for the candidate who can tick all the boxes.

Candidates seeking a career in Big Data should be aware that the ability to make your findings understandable to colleagues and key decision makers within the organisation – who are required to quickly understand the numbers behind the scenes – are skills strongly desired by all hiring bodies, in addition to demonstrating an understanding of key drivers of change identified, to improve business performance and drive success. All are collectively now a main identifier in recruiting the top performer for the Big Data roles.

collection, interpretation, analysis and creating plans for profit derived from a data strategy, are most valuable in assisting your organisation in creating innovative data answers to solve business problems. These are corporate data's most valuable players.

Firms recruiting for key players who can facilitate and support change, strengthening organisational capabilities, will look further than analytical tools/techniques listed on a CV or name dropped in an interview and test for those who have a drive to always find solutions. New solutions that are well thought out for candidates mean job offers are always on the horizon; given the constant state of flux in which the technological environment continually resides in.

There we have it, Big Data – checkmate; enabling recruiters to save time and firms to recruit top candidates efficiently, and providing dream jobs for candidates! A future ahead that we can all embrace in partnership! ■

PROFILE  
★



Sarah is founder and MD of Market\_SME; enhancing, developing and managing digital recruitment content and supporting education expansion within rural areas.

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# Cynthia Savard Saucier

Words by Oliver Lindberg

Bad design can have tragic consequences. Shopify's director of UX discusses the tools and techniques we can apply to avoid harming and excluding users





Photo: Cindy Boyce

## INFO

**job:** Director of design at Shopify  
**w:** [www.tragicdesign.com](http://www.tragicdesign.com)  
**t:** [@CynthiaSavard](https://twitter.com/CynthiaSavard)

In 2007, Cynthia Savard Saucier was backpacking across Central America with her two best friends and, while in Guatemala, stayed in a remote hotel that could only be accessed by boat. It was there that her friend suffered a severe allergic reaction after having eaten a cereal that contained nuts. He always travelled with his dual injector, but as his muscles started to spasm, he was unable to inject himself. Cynthia managed to administer the first injection but when they were on the boat speeding to the closest clinic, wind whipping her face, the driver shouting in Spanish, she tried to inject the second dose – but the device didn't work. Cynthia read the very long instructions, but couldn't work them out. Out of desperation she stabbed her friend's leg 11 times, and finally it worked, probably because the syringe simply broke in his leg, saving his life.

Later she found out that she had only needed to remove a little yellow piece at the end of the syringe, but in the crisis situation, she missed this ninth step on the double-sided sheet.

"I always told myself if I had wanted to save lives, I would not have become a designer," points out Cynthia, who studied industrial design. "I might have become a doctor, a nurse or a firefighter, but I realised that good design saves lives, and this is what I wanted to do. As designers we are never really confronted with the consequences of our decisions, but we shouldn't underestimate the impact we have on everyone's life. We should always ask ourselves how we can make life better for people using our objects."

Cynthia's experience eventually led her to co-author a book with fellow designer Jonathan Shariat ([twitter.com/designIXIII](https://twitter.com/designIXIII)), who himself was traumatised that a design job could have saved someone's life when he heard that a young cancer patient died because of an unnecessarily complex interface. They started looking into other case studies of how certain design decisions have angered, saddened, excluded, injured, and even killed people. The result is *Tragic Design* ([www.tragedesign.com](http://www.tragedesign.com)), which explores the impact of bad design and what can be done to fix it.

The first step in avoiding such mistakes is to just ask yourself if you could kill someone. "Whenever we design as a group and discuss a feature that seems irrelevant like shipping updates, we ask 'can we kill someone with this?'" Cynthia, now director of user experience at Shopify in Montreal, explains. "It's quite funny initially, but it really turns into a very productive design session. If someone is ordering medication and they don't get it on time, what could happen? If someone is ordering something that is deeply sentimental and they have a deadline to receive it, what could happen if we can't offer that deadline?"

The second step is to work with product managers to make sure they understand that if a person could get hurt or killed, even if it's just a small percentage and only in certain conditions, this needs to be prioritised. "It's sometimes a little hard to make a case for it if maybe just one per cent could get impacted," Cynthia admits. "But it's worth making the process slightly longer for everyone if it's benefitting a few people. A really good example is Tumblr. When you search for

Photo: Cindy Boyce





something like ‘anorexia’ ‘sadness’ or ‘suicide’ before it gives you the search results, it suggests some helplines you could call right now. It’s an obligatory step that people have to go through, which makes the process a little longer for everyone, except for those who actually need it.”

There are a lot of tools and approaches you can use to avoid harming someone. Modes, for example, are always bad strategies for user interfaces. In the book, Cynthia and Jonathan tell a story of how a plane crashed, killing most people on board, because the pilot confused the flight path angle mode with the vertical speed mode in the interface. Instead you should use quasimodes with more than one visual feedback to show you that you’re in a certain mode.

“When you want to erase an app on your phone and you hold it down, it starts wiggling or dancing,” Cynthia explains. “This is a really good example of a quasimode: you need to do something physical in order to change

the mode. And then there are two feedbacks. There’s the ‘x’ and the wiggling, so that you’re sure that something is different. Another good example of a quasimode is when you’re driving a car. If you want to go backwards, you need to change gears.

Your hand is on something, so that you don’t go backwards all of a sudden without knowing and injuring or even killing someone.”

When critiquing any design, one simple but very useful technique is the User Error Chart. “Think of an information

architecture tree with every type of user but the ‘happy path’ is only a small subset of users,” Cynthia suggests. “The other parts are all misuse and the errors and people trying to take advantage of – or even steal from – your product. Something that people

always forget is if you want to build a 100-year company, your users might die. Not taking that into consideration is actually unethical and will lead to a lot of pain down the road. You can plan for errors, and you can prepare for someone dying at some point. You can

print this chart and leave it on your wall for your team to see and make sure that every single piece of this tree gets considered. It’s not about designing everything – we don’t have unlimited resources – but it’s about making informed decisions as to what

you’re ignoring to design.”

**“Whenever we design as a group and discuss a feature, we ask ‘can we kill someone with this?’”**

Related to this is the Fault Tree Analysis. You list all the errors that could happen and work your way back through all of the potential causes. “At the end of the analysis, not only do you have an amazing FAQ, but it ►



Photo: Interaction South America



► also highlights all the potential downfalls that you should take into consideration and design safeguards for," Cynthia enthuses. "If you know that someone could stab their fingers with the injector instead of the leg, make sure you have more than one visual cue. Use another sense and, for example, design the handle in a shape that teaches you how to hold it."

One way to reduce the distance between the product team and the user is to learn from the support team, which Cynthia says is undervalued in many companies. "At Shopify we have 'bridge the gap' sessions with the support team that anyone can take part in," she explains. "They have a lot of empathy for the users and know their struggles – by jumping on a call with them you really understand what's happening. It's so valuable. It's important to build and keep these bridges."

Occasionally, the support team also attends 'fresh eyes' sessions. "These feedback sessions bring all the designers together, so that they can show their work as they're building it. Every now and then we invite someone from the support team to tell us what they're thinking. Even though they might not be trained as designers, they really understand how people will use the product. They also have a really good instinct

for usability, because they just see people failing at what we're building all the time."

Cynthia, who leads a team of around 50 UX designers, researchers, content strategists and front-end developers, recommends testing with real users and sending people on field trips, so they can see how their product is actually being used. It's also worth bringing users into the office, especially those with disabilities. "We have over half a million merchants, and that's millions and millions of buyers. You can't exclude people with disabilities from that. You need them to show the team what it's actually like for them to buy online. Once you've seen this person, it's impossible not to think of them all the time."

Every team at Shopify is free to organise themselves in the way that they see fit. People who work on the same product often sit and work together, which – according to Cynthia – means you share a lot of ideas and build trust among your co-workers. Teams are led by a so-called trifecta: one person each from product, engineering and UX, who will make decisions together and involve the other team members. When an engineer makes a decision and doesn't take UX into consideration, that's when problems arise, Cynthia argues. By having these three decision makers together, you can ensure

the disciplines work together effectively as teams scale.

Cynthia hopes that *Tragic Design* – as well as her keynote at Generate New York on 27 April – will act as a reminder of a designer's responsibility. By way of example, she points out that engineers in Canada and the US receive an iron ring when they graduate to remind them of their obligations towards the safety of the public. As the myth goes, the rings are made from the steel of a bridge that collapsed in Quebec in 1907 and killed 75 people because of an engineering design mistake. The ring is worn on the little finger, which means it touches the paper when the engineer is drawing or writing, making it impossible to forget their responsibility.

Personally, Cynthia has a keyring that she always carries with her. "One day I removed the battery from my electric scooter, and the keyring touched the contact and it exploded," she remembers. "I'm really lucky it touched just the keyring and not my fingers. I kept that ring as a reminder of terrible design."

Cynthia hopes her talk will be a call to action for people to find their own ring and be validated in their effort whenever they're advocating for the lone user. The scooter company has since created a rubber cap to prevent similar incidents from happening. The dual injector has been discontinued. ■

"We have over half a million merchants, and that's millions and millions of buyers. You can't exclude people with disabilities from that"





★ THE DESIGN OF BUSINESS

# PRICING

**Christopher Murphy** explores pricing and how value-pricing can transform your livelihood



**job:** Writer, designer and educator  
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> One of the hardest things to get right in business is pricing. It's difficult when you're starting out to know where to begin, especially if you're lacking experience.

Pricing is essentially a conundrum: set the price too high and you'll never make a sale; set the price too low and you'll find yourself anchored to a pricing point that you may live to regret. Get the price right, however, and everything will fall into place. At the end of the day, price is a story and how you tell that story matters.

We all deserve to be paid for what we do – we have skills that others don't. It's important to value your work, to truly believe in that value and to share a pricing story based on that value. As Richard Muscat puts it in his book, *Aligning for Conversion*:

"If we truly believe in the quality and value of our work, then dedicating time and effort towards selling that value... is something we should not only embrace but take pride in."

Whatever you're selling – whether it's a product or a service – it's critical not to adopt a strategy based on cutting your margins to the bone. A race to the bottom is a race no one wants to win. It's a much better strategy to focus, instead, on selling the value of your offering.

If you find your product or service straying into commodity territory – where the lower your price is, the better – I'd strongly recommend refocusing and thinking instead about your value offering. Ask yourself what value you are adding to the equation, and price around that.

## THE VALUE OF DESIGN

One of the biggest shifts I made when establishing my own design consultancy was to stop pricing based on cost and instead focus on pricing based on value. The difference between the two is huge.

Cost-based pricing is an approach that adds together material, labour and overhead costs, then adds a markup to create a profit margin. For design, labour is often at the core of this; essentially you're pricing based on: 'How long did this take?'. The problem with this approach is that it punishes efficiency: work faster, get paid less.

Site's like Fiverr ([fiverr.com](http://fiverr.com)) bill themselves as offering: 'Freelance services for the lean entrepreneur'. The trouble with this approach is that it devalues design, treating it as a commodity.

Value-based pricing is an approach that sets prices according to the perceived or estimated value of the product or service offered. Essentially you're pricing based on: 'How much value am I adding?'. This approach decouples pricing from the hours it takes to complete a task, enabling you to focus instead on the added value you offer.

This is better for your customers as it shifts the focus towards the value you add through the product or service you're offering. That value benefits not just you, but your customer, too.

Stop thinking of your product or service as the amount of time it took to create, and instead think about it in terms of the overall value it offers and brings to the consumer. By focusing on value – and telling a pricing story based on that value – you can increase margins, leading to better profitability. ■

The screenshot shows the Fiverr homepage. At the top, there's a dark header with the Fiverr logo and a search bar. Below the header, a large banner features a woman's face with the text "Don't Just Dream, Do" and "Freelance services for the lean entrepreneur". There are buttons for "Search" and "See for yourself". Below the banner, there's a section titled "Explore The Marketplace" with the subtext "Get inspired to build your business". It lists several service categories with icons: "Graphics & Design", "Digital Marketing", "Writing & Translation", and "Video & Animation". At the bottom of the page, there are more service icons for "Photography", "Web Development", "Graphic Design", and "Video Production".

Sites like Fiverr price design as a commodity, but that doesn't mean you have to adopt a similar strategy



★ Q&amp;A

# LAURA ELIZABETH

The founder of Design Academy explains how she's helping developers to improve their visual design skills



**job:** Designer and product creator

**w:** [designacademy.io](http://designacademy.io)

**t:** @laurium

**net:** What gave you the idea to launch Design Academy and how did you go about it?

**LE:** As a designer, I work with developers on a daily basis. One thing I realised was that developers had an abundance of ideas for side projects, but got held back by the design. They felt like they knew good design when they saw it, but they couldn't figure out how to translate their good taste into their work.

Design Academy was launched to teach developers how to make something look good, without needing to become a designer. It started with me posting content on my blog about how developers can learn design. The content resonated and grew into a community. After two years, I've finally launched a course on Design Fundamentals, which gives developers a road map they can follow to get their projects looking like something they can be proud of.

**net:** What do you think prevents developers from working on their visual design skills?

**LE:** Lack of confidence is a biggie. Most people think that design is something for artistic types only. I've found developers often make the best designers

because of their ability to problem solve and their insight into how an interface is built.

I use the concept of debugging design throughout my course. When you finish coding an app, you go through and find all the bugs... the same applies to design. Nobody finishes a design without having to debug it. It's never perfect first time but this is where most developers give up. In my course, I teach design as an iterative process, rather than linear.

There's also an issue with most design teaching being abstract and 'fluffy'. Often designers take for granted the skills they've honed over the years, so they miss out on teaching the most useful strategies because, to them, they seem obvious. This contributes to developers feeling like design is something out of their depth and that they're somehow 'not wired' to design.

**net:** What's the thinking behind your client management tool, Client Portal?

**LE:** Client Portal was born out of a frustration with project management software. Most of it was too complex, with too many bells and whistles. Clients never used it because it was a hassle so I ended up wasting a lot of money on complex tools nobody used.

So I decided to make my own. I created a central dashboard where clients could access deliverables and see exactly where they were with a project. Client Portal was made for freelancers and agencies who want to look professional and give clients something they'd actually find useful (and can keep after a project finishes), rather than an extra tool to learn.

**net:** What's been the biggest challenge for you in shifting from client work to products?

**LE:** Working on products needs a different mindset to client work. Instead of fixed price projects that come and go, you're working on building an asset that keeps growing over time. You're dealing with hundreds of customers as opposed to a handful of clients, which means you need to have a lot in place to make sure everything works as expected, from product fulfilment to customer support and success.

**net:** What's exciting you at the moment in the world of web design?

**LE:** I've been doing some design consulting for RightMessage, which is a tool that allows you to dynamically change the content of a website depending on who's viewing it. Designing something flexible enough to react to whoever might be viewing is an interesting challenge, and I think this concept of on-site personalisation is very exciting and something we're going to be seeing a lot more of in the near future. ■

★ LEARNING

# WHAT NEW SKILL DO YOU PLAN TO LEARN IN 2018?

Our panel reveal how they're going to broaden their horizons in the year ahead



**INAYAILI DE  
LEON PERSSON**

Product principal, Make Us Proud  
[makeuproud.com](http://makeuproud.com)

 This year I'm going to learn a mix of skills, but my main focus is going to be on the topics of design leadership and research, because this is what my career has been moving towards in the past few years. I've been reading a lot of books and articles, and watching talks around these subjects, and I'm planning to attend some conferences too – and, of course, learning on the job. I'm also learning a little bit of React and using CSS Grid Layout in some projects.



**BRUCE LAWSON**

Web standards and fashion consultant to Wix Engineering  
[wix.engineering](http://wix.engineering)

 The skill I'm chasing is not to worry every time a new framework or buzzword arrives. There are too many, and you can learn a new one if you need it. If you can think algorithmically, share your skills, work with a team and empathise with users, there will always be work. Being rounded is the skill I want to develop. Although the ability to listen to music while working and not find myself singing along is probably the preference of my co-workers and dog.



**ANNA  
DEBENHAM**

Front-end developer,  
Snyk  
[maban.co.uk](http://maban.co.uk)

 I love playing video games (at the moment I'm currently hooked on *Stardew Valley*), and there are some really great ones coming out from indie developers that I follow on Twitter. Watching them share their progress of crafting walking (as well as dancing) bears, and teaching cubes to chase a banana using machine learning, is something that has really inspired me. Software for creating games is becoming a lot more accessible for new learners, as is developing for different platforms, including for VR. So in 2018, I'd like to learn how to build my own game in 3D using Unity. Then, if this internet thing doesn't seem to catch on, maybe I'll decide to pursue a career in it!



## SALLY LAIT

Digital transformation consultant  
[sallylait.com](http://sallylait.com)

**T**owards the end of 2017, I started to play with neural networks, and in 2018 I'd like to learn more. Developing intelligent systems isn't a skill that I plan to start offering my clients directly, though. Instead, with AI being a growing corner of tech where there's a lot of hype and even greater amounts of ethical concerns, I'd like more hands-on, practical experience to better inform my knowledge of these important issues. I see it as my responsibility to experience and understand the impact that different technologies can have.



## SHANE MIELKE

Creative director and author of *Launch It*  
[shanemielke.com](http://shanemielke.com)

**T**In 2018, I plan to sit down and explore the tools used to create augmented reality and virtual reality experiences. With the increased presence of AR and VR in games, apps and even websites, understanding tools like Unity and ARKit will give me a better understanding of both the possibilities and limitations within this niche. By understanding the tools and process, I can more confidently solve design and navigation problems in a world that doesn't follow the standards of the web-only projects that I have most of my experience in.



## JENN LUKAS

Front-end developer and consultant  
[jennlukas.com](http://jennlukas.com)

**T**2018 is the year to get back to combining technology with stories from real people, therefore I'm relearning a skill from years ago: podcasting! It's been four years since the last podcast I co-hosted, *Ladies in Tech*, so I'm super excited to be launching a new podcast: *No, You Go* (<http://noyougoshow.com/>) with CEO Katel LeDù and author Sara Wachter-Boettcher. The show will focus on the joys and anxieties of being ambitious women and feature some great guests. So 2018 is bringing me back to learning all the new updates in WordPress, audio editing, and brushing up on my interviewing skills.



## KATHERINE CORY

Web designer and front-end developer  
[katherinecory.com](http://katherinecory.com)

**T**I'd like to learn how to use Procreate. I have lusted after an iPad Pro for a long time and finally got one and an Apple Pencil last year but we haven't got off to the best of starts. I naively thought I'd start creating work as great as the timelapses I see on Instagram but after a few hours of playing and only creating scribbles, I've realised it's a skill I need to learn so I've signed up to an Udemy course and have joined Skillshare. Hopefully, by the end of the year I'll be creating designs like a pro (pun intended).

## RESOURCES

### UPGRADE YOUR DESIGN SKILLS IN 2018

<http://www.creativebloq.com/career/upgrade-your-design-skills-2016-11618581>

**+** A new year is a good time to evaluate how your career is going. So what should you learn, and how? This article provides some helpful suggestions and advice.

### ADOBES CREATIVE COFFEE BREAK SERIES

<http://www.creativebloq.com/news/learn-a-new-skill-in-your-coffee-break>

**+** Each video in this series lasts under two minutes – so you can easily grab a cup of coffee, take a mini break from work, and learn a new trick to improve your work.

### 30 WEB DESIGN TOOLS TO SPEED UP YOUR WORKFLOW IN 2018

<http://www.creativebloq.com/features/best-web-design-tools>

**+** New web design tools are released all the time – most notably in UI design. This article looks at some brilliant web design tools that will help you to become more productive.



★ GRAPHQL

# IS GRAPHQL THE FUTURE OF APIS?

**Simon Jones** looks at how Facebook's query language introduces a new way of thinking about web services

For some time now, the paradigm for web service architecture has been RESTful services, which enable representations of resources from one system (usually in JSON form) to be made available to another over a network.

A basic REST service might expose a /customer/ resource that returns a collection of all customers in a company's system. An HTTP GET request to /customer/12/ would return the record for customer number 12, attributes as JSON properties. It's this simplicity that has made REST so attractive.

However, there are limitations to RESTful services that can make more complex use cases needlessly convoluted. As a result, in 2015, Facebook's GraphQL was unleashed. GraphQL offers an alternative paradigm and language that overcomes many of the perceived shortcomings of REST, and alongside Facebook counts Twitter, GitHub and Pinterest among its users.

REST services provide responses in a format determined by the server, and aim to isolate resources based on a logical model. This introduces two issues that GraphQL sets out to solve:

**1)** Since the response structure is determined by the server, a typical REST response will provide more information than is necessary for the client. Changes to this response structure may be breaking and require versioning the API. Where development responsibilities are separated, this also places a dependency on the team developing the API to respond to changing front-end requirements.

**2)** It's rare that meaningful functionality can be implemented by manipulating individual REST resources in isolation, resulting in 'chatty' APIs that require significant back and forth across the network to fulfil any practical

requirement. This leads to compromise between building 'pure' REST services and building services that are tailored to a specific client's need.

Let's say our RESTful /customer/ resources include a customer's name, email, and a list of order IDs. We also have a separate collection of /order/ resources representing individual orders that include the product name. To get the names of all products a specific customer has ordered, we first need to retrieve the customer resource (GET /customer/12/), then get the order resource for each item in the array of order IDs (GET /order/#/). Along the way, we also receive the customer email, which we don't need.

Conversely, GraphQL lets the client specify the exact information needed as a single request. The complexity of gathering this information and consolidating it into the required format is shifted to the server. A server-side runtime sits in front of your application, and processes these requests based on a set of data types and functions you define.

To fulfil our need to obtain a list of products a customer has ordered, the GraphQL client will tell the server that it wants the customer name, and a collection containing the product names of their orders. The server will return only this information. In GraphQL terms, this is a "query". If we want to modify resources on the server, we use a "mutation" (as a POST request). These are defined similarly to queries but each request specifies a function that is implemented on the server to update data.

Many developers are excited about GraphQL, and it's likely that its footprint will continue to grow. A turning point will come when it reaches sufficient maturity that corporations become comfortable using it. The best place to start learning how to create and deploy GraphQL services is [graphql.org](http://graphql.org), and [hastegraphql.com](http://hastegraphql.com) offers an excellent set of resources for popular web development stacks. ■

PROFILE  
★

Simon is a software engineering director with a background in banking and financial services. He leads teams working with Angular, React, Java and .NET.

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OXFAM'S ONLINE SHOP  
[oxfam.org.uk/shop](http://oxfam.org.uk/shop)



OXFAM



# HOW TO MAKE THE SWITCH TO AFFINITY APPS

Why one web design agency decided to move over to Affinity

**>** We Create Digital is made up of highly experienced web developers and graphic designers fuelled by a genuine passion for technology. Until recently, Adobe Illustrator was our go-to application for graphic design – indeed, it has been a mainstay for many designers since its introduction in 1987. While a plethora of competing products have been introduced since, most have fallen by the wayside and enabled Adobe to maintain its domination of the market.

Affinity has risen as Adobe's newest – and possibly fiercest – challenger yet, drawing parallels to two of Adobe's flagship applications: Illustrator and Photoshop. Affinity Designer is a professional vector graphics app with power to spare. Affinity Photo is a dedicated image-editing application boasting a wealth of highly refined tools for image readjustment and enhancement.

Affinity Designer and Affinity Photo are available for a one-off fee of £48.99 each, for Windows and Mac, which represents a more cost-effective solution than subscription-based plans. However, that's not to say you'll be getting a sub-standard product.

Affinity's improbable success hasn't gone unnoticed, with Apple awarding Affinity with its

highly coveted Design Award in June 2015, unveiling Affinity Photo for iPad onstage at WWDC last year, and then naming it App of the Year.

We first started considering moving away from Adobe as our team began to expand. Ultimately, what was instrumental in our decision was a belief that Affinity Designer is better geared towards the needs of the modern web designer. In this article we'll explore why we made the switch, and how.

## Feature focus

Affinity Designer is a high-end graphics software application that has been created for use by professional designers. It is equipped with most of the functionality seen in its big-name rivals, plus a whole host of new features and capabilities. Moreover, it is fast expanding its range of tools and feature set with regular updates – inviting users to submit new feature requests openly on its forum.

Affinity has shown an astute awareness of its audience. A basic example of this would be how users can choose from a range of screen-resolution presets based on the dimensions of popular devices. Furthermore, Affinity has clearly been developed with the aim of supporting a streamlined workflow.

**Above** Both Affinity Photo and Designer are ideal for the modern web designer

**Top left** Users can choose from a range of screen-resolution presets

**Middle left** The software has replaced Photoshop & Illustrator for the agency

**Bottom left** You are able to overlay text without impairing readability

**Top right** Advanced image-adjustment options enable users to represent brands

**Bottom right** You can even save adjustment layers as templates for future use

**Colchester Hospital: new MRI scanner**

Maecenas sed diam eger iusus varius blandit sit amet non magna. Integer posuere erat a ante venenatis dapibus posuere velit aliquet.

**Campaign** **Banners** **Updaters** **FADs**

**What your money can do:**

- £10: Pays for the processing of five samples
- £100: Pays for the references of clinical study participants
- £1,000: Pays for a laboratory for one week

**How your money will be spent:**

- £100: Laboratory
- £500: Research staff
- £1,000: Processing
- £2,000: Data
- £20K: Administrations

Donec ullamcorper nulla non metus auctor fringilla. Nulla etiam feugiat enim, conguecetur ac vestibulum at eros. Nullam id dolor et nibh vestibulum ut sit amet. Curae sociis natae penatibus et magnis dis parturient montes, nascetur ridiculus mus. Vestibulum et ligula porttitor felis euismod semper. Nam quam. Pellentesque ornare sem lacinia quam venenatis.

Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibus, ut fermentum massa justo sit amet risus. Cras mattis consectetur purus sit amet fermentum. Proin condicto cursum magis, vel esterisque resi condicto et. Maecenas fusibus media interdum. Donec id est non mi porta gravida et eget menu. Maecenas fusibus modic interdum.



**FELLPACK**

**Food**

**Families**

**Adventure**

**Bob Graham**

**Music Teachers in Preston**

**Popular Music Lessons in Preston**

**Why Musician Go!**

**Music Teachers in Preston**

**Popular Music Lessons in Preston**

**Why Musician Go!**

**Nigel Hilliges, Keyboard Entertainer, Booking Manager & Background Music**

**Nigel Hilliges, Keyboard Entertainer, Booking Manager & Background Music**

**Nigel Hilliges, Keyboard Entertainer, Booking Manager & Background Music**

Customisable layer effects enable designers to effortlessly refine elements of their design, and these adjustment layers can be saved as templates for future use.

These features really shone in a recent project for Musician Go, a central resource for musicians. WCD was responsible for delivering all aspects of branding, design and development – building a truly bespoke platform entirely from scratch. The Asset Management panel provides easy access to design elements that crop up repeatedly in projects, a feature we made frequent use of when designing Musician Go.

At WCD we are sticklers for detail and accuracy, which is why we love Affinity's advanced snapping and grid options. Affinity features zooming capabilities of more than 1,000,000% (that's right, one million per cent!), meaning we can be as precise as we want. It's also geared up specifically for working with both vectors and bitmap images within the same document, without having to switch between programs.

Affinity offers advanced image-adjustment options, which came in handy when we were asked to design a website for a new restaurant called Fellpack. The aim was to showcase the incredible landscape surrounding the restaurant, and to capture the brand's passion for food with vibrant photography.

In Affinity Designer we were able to overlay text without impairing readability and with only minimal desaturation to photos. The result is a website that creates an instant impression on its visitors and captures the vision of Fellpack.

## Making the switch

Our transition was aided by Affinity's support for PSD and AI files – meaning that we were able to work using our existing source files with ease. Similarly, its wide range of file support facilitates our collaborations with external designers and agencies.

Affinity's slick, accessible and highly intuitive interface mean users need little time to bring themselves up to speed with the nuanced differences between Affinity and Adobe. This also makes Affinity an attractive option for beginners as well as seasoned professionals.

With a free trial available, we'd strongly advise you to consider giving Affinity a chance. It's been two years since we switched to using Affinity, and we haven't looked back. ■

● [affinity.serif.com](http://affinity.serif.com)

The website includes video tutorials, as well as links to purchase Affinity Photo and Affinity Designer.

# GALLERY

Sensational design and superb development

**BARRY WOODHALL**



Barry is the director of Moken, the remote digital design agency. He's also the founder of UiPie—sharing design insights, inspiration and time-saving resources daily.

t: @barrylwoodhall

**SITE OF THE MONTH**

**ONE SHARED HOUSE**  
a radical experiment in communal living

watch the documentary →

play    mute

**the story**

\* JQUERY, BACKBONE.JS, MODERNIZR

## ONE SHARED HOUSE

<http://onesharedhouse.t030.com/>

Packed with bold typography and enticing information design, One Shared House tells the story of extreme communal living. Inspired by a radical experiment carried out 30 years ago in Amsterdam and the emerging popularity of co-living, we learn about the intricacies involved with sharing a living space with strangers. What items are commonly agreed upon to share? Which nation is the most accommodating to the co-living ethos? Watch the short movie to learn about the inspiration behind this project.

Visiting the survey page enables users to contribute to research with a stats view available upon completion. Once presented with the stats you'll begin to recognise your own

“The modular design supports an innovative solution for the way we consume information”

TOM ROBINSON, DESIGNER AT ONLY AND CO-FOUNDER OF LAYERS

co-living traits within the results. The beautifully designed results engage users with the content, and spurs them into new call-to-actions as they progress through the site.

Combining great storytelling and web design is no small feat. I love how One Shared House has melded modern web trends with intrigue and inclusiveness. The vibrant colours, UI depth and ease of navigation is eye candy to us hybrid UI/UX designers. I'm happy to be naming this site of the month!



- [Features](#)
- [About](#)
- [Showcase](#)
- [For clients](#)
- [Log In](#)
- [Sign Up](#)

# Brand identities are living things. Their guidelines should be too.

**Cloud-based brand guidelines and assets**

\* PYTHON, JSON AND REACT.JS

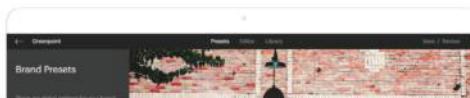
**BRANDPAD**  
<http://brandpad.io/>

Brand guidelines with a pulse is now a thing thanks to Brandpad; I can see why too, as many brand identities have cultural and societal impacts on such a huge scale that there's a constant need for guidelines to evolve – almost daily. Documenting guidelines has traditionally been a monotonous process involving many (and I mean many) static PDF amends and exports. Luckily, Brandpad has the tools and style to take brand guidelines to a whole new – and far more interesting – level.

This slick and usable platform enables designers, developers and clients to collaborate in creating stunning brand guidelines in the cloud. Making a small amendment to your brand guidelines is now as easy as logging in, dropping an asset into the document and logging out.

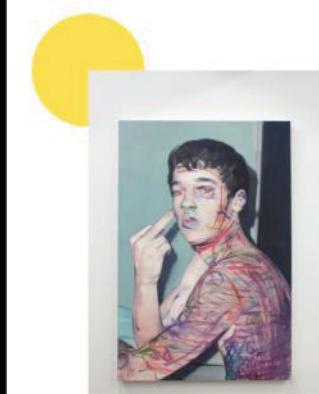
Espen Harstad, the CEO of Brandpad, explains the process behind designing and building the website: "Since Brandpad is a brand guidelines system where designers deliver brand identities to clients, our own identity and web design (of both the website and system) is based around 'getting out of the way' so other identities can shine. We took inspiration from the Swiss Style graphic movement that emphasises cleanliness and readability to achieve this."

The Brandpad interface takes on a classic black-and-white aesthetic, which is useful in making the site's case studies 'pop' and contrast well in their setting. In fact, all use of vibrant colours is reserved for the living space of the brand guidelines. This is a delicious site to explore, full of seamless, fade-in interactions; bold, mouth-drooling imagery; plus crafted type, leaving any typographer feeling satisfied.

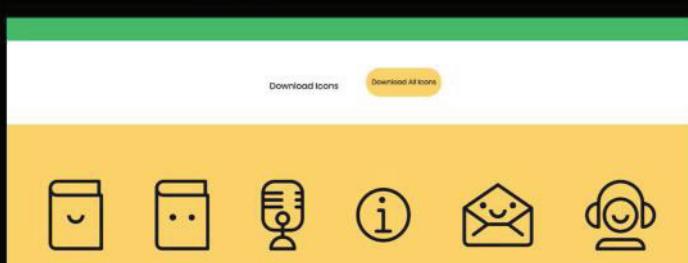


**Daydream nation**  
— Terminal Gallery

**Artists**  
Brian Willmont & Alison Sirico  
**Address**  
67 West St. #320 Brooklyn, NY 11222  
**Web**  
[Greenpointterminalgallery.com](http://Greenpointterminalgallery.com)



"A young energy emanates from the work exhuming memories of being stuck inside, in school, online, confined but hungry to explore. It reminds us of a time when being controlled and caged bred angst that was used as ammunition shot onto spiral notebooks, trapper keepers, and art forums like Deviantart. Whether it be through fan art, imaginary figures, or renditions of perverse familial scenarios, the works stand as moments of rebellion and empowering mechanisms of escape."



**OBACHAN**

**Wonderful things from Japan  
hand-picked and delivered  
to your door** 🙌



★ LARAVEL, CORE-JS, MODERNIZR

**OBACHAN**

[getobachan.com](http://getobachan.com)

There's a brilliant corner of the web reserved for sites that deliver truly wonderful niche ideas that derive from pop culture – Obachan fits into this category perfectly. Each month the subscribers of Obachan receive a box of Japanese curated items via Japan Post. As the items are made in Japan, it offers location-based exclusivity to the users. The type of items you can expect to get your hands on from Obachan include ceramics, washi stationery, old and new fashioned toys, textiles and prints.

What's not to like about Obachan? An appealing service for collectors and designers, the website blends traditional Japanese artefact culture with modern offerings. I particularly enjoy the minimalist interface that's brought to life with the use of cross-screen typographic animations that add a level of dynamism to the site. Some interesting UI elements featured on the site include a nice drop-down navigation interaction, an enticing and effective subscribe button with push-in effect and, of course, the classic symbol of all things Japanese – the peace emoji.

**OBACHAN**

[Subscribe](#)

### How it works

**Subscribe to Get Obachan**  
Choose your plan or buy a single box, for you or as a gift.

**We pack and ship your box**  
Your box is filled with 5-7 goods, packed and shipped to you.

**Enjoy your Japanese box**  
Your box leaves Japan and arrives straight to your door. Easy-peasy!

“Every element draws you in and they balance a large amount of information with a clean and engaging design”

HOLLY TURNER, DESIGNER AT TATE

**OBACHAN**

[Get Ze](#) [Get Ob](#)

Enjoy your more homewares with experience.

Upon subscription:  
5+ high quality items made in Japan

We put a lot of effort into each good but along the way

[Subscribe](#)

**Sign in | Subscribe**

**Carefully selected, wrapped and delivered to you every month**

Get Osechari is a monthly subscription box full of high-quality Japanese lifestyle products sent directly from Japan.

Every box is unique and includes Japanese-made items you can't find anywhere else such as traditional ceramics, wash stationery, textiles, prints, old and new fashioned toys, and other homewares.

Our goal is to provide you a new experience and widen your view of the Japanese culture and craftsmanship.

**Subscribe Now**

**an. osechari.**

My blend of traditional and modern...  
in our can't-be-missed authentic Japanese...  
ion, you will receive each month a new kit with...  
products, which are hand selected and 100%...  
and cane into not only the search of...  
also how it's made and the lives it touches...  
We buy from the best shops in Japan! ❤

\* GOOGLE PAGESPEED, SMARTLOOK, SENDINBLUE

## BUY ME A COFFEE

 [buymeacoffee.com](http://buymeacoffee.com)

> Many creatives and creative communities rely on the generosity of their supporters to fund their ventures; Buy Me A Coffee has built a platform that enables creatives to accept donations via their own profile on the website.

I admire the purpose and goals of this site – to spend time designing and building a platform that aims to fund the grass roots of the creative industry is an honourable ethos. It has got off to a great start, with many members being donated ‘coffees’ on a regular basis. One profile in particular caught my eye; although not strictly a creative community, Little Hands Big Hearts is a charity being creative with its methods of raising money to support its local islanders in Bali who are impacted by the Mt Gunung Agung volcano.

I chatted with Joseph from Buy Me A Coffee about its approach to building the site. He was happy to share part of the design process: “The user interface was deliberately simplified to resonate with creators. In fact, our designer and project manager collaborated to come up with wireframes that prioritised the user’s experience over features.”

This site’s sleek UI is complemented by its fun and bright illustrations, helping to portray a well-delivered bootstrap aesthetic. Building on trust with users is always key, and Buy Me a Coffee does this extremely well by making the trusted payment gateway partners (Stripe & PayPal) visible next to the payment call-to-action. At Moken, we’ll definitely be looking out for new and exciting ventures to donate coffee to!

**Explore** **Login** **Start My Page**

**Creators we love**

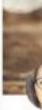
**Thanks a latte!**

 **Alexis P. Morgan**  
Writing

The pole dancing, troublemaker, pro-heaux sorceress you were warned about.

 **Suwung tip families**  
Charity

A passionate group who want to help the people of the Suwung rubbish tip

 **Daphne Brooks**  
Singer/Songwriter

With your help I will record and release an EP this year! Thank you!!

**Get the support your work deserves.**

A free, fast and friendly way to accept donations ☕️

**Start My Page**





\* THREEJS, WEBGL, JAVASCRIPT

## EVOLVVE

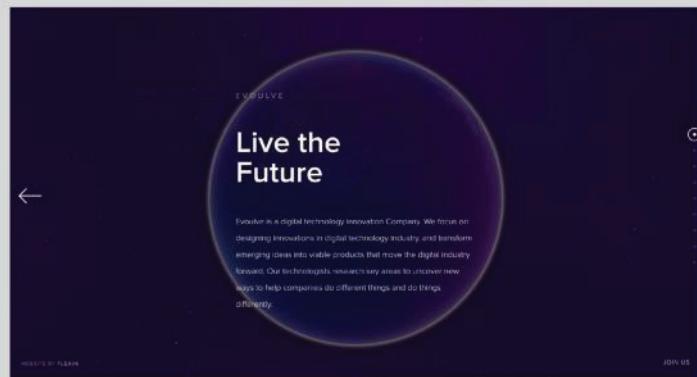
[evoulve.com](http://evoulve.com)

> Evoulve is a company that focuses on transforming emerging ideas into viable products. The futuristic website aesthetic emits beauty from a UI galaxy far, far away. The zoom on the planet and the seamless storytelling as the user scrolls down the page showcases some impressive UI elements.

I spoke to Lewis Webber from Fleava, the design agency that built the site, to learn about the process behind building it: “We used Three.js and WebGL technology to draw (render) the globe on an HTML canvas. Three.js is a cross-browser JavaScript library/API used to create and display animated 3D computer graphics in a web browser. Once we had the globe done, we added the overlaying content. We used simple JavaScript just to add ‘opened’ and ‘closed’ state of the Overlay and play all the animations solely using CSS transitions. For the full-page scroll, we used a JavaScript plugin called fullPage.js.”

“The immediate otherworldly visuals stimulated a curiosity within me to find out more about the company”

JOSH MILLGATE, FREELANCE DESIGN AND BRANDING



WORKS WITH SKETCH 48.2 ...

With the Gif.me sketch plugin you can play gifs and videos inside sketch app while you're designing.

[Download now!](#)

#sketchapp

"The Sketch Team loved being part of #SketchHackDnD this past weekend. Some fun and great plugins were developed like <http://www.sketchgiphy.me/>"

@mrabdussalam

"Holy cow! @kannonboy @sketchapp This is the best thing happened to designkind - previewing gifs within \*sketchapp \*git \*Sketchgit \*design"

[Download for free!](#)

## \* HTML5, SASS AND JAVASCRIPT



For fun, and pretty much just because, let's admire the new one-page website Gifme. This site boasts a computer advertising its latest Sketch app plugin to view real-time GIFs inside your Sketch design software. While I'm unable to think of a commercial project that I've worked on that would have benefitted from this plugin, I can't help but admire the retro/modern crossover collaboration that's been achieved with the website's UI.

I spoke to Guillermo Duran, who designed the website, about the process he went through: "I started by sketching wireframes on a piece of paper to materialise all my ideas. Then I used tools such as Sketch app, Photoshop and Principle to bring the idea to life. I dedicated a lot of time to designing the experience; from creating all the assets to prototyping animations. Later on I started coding the website. This is a flexible project, therefore I decided to give CSS Grid a try. I coded this website with HTML5, Sass and JavaScript. As the final step I released a beta version to test it with friends and different browsers. I designed and coded this site in one weekend as a side project."

What inspires me about this site is the willingness of individuals who want to create and design products for their own satisfaction. Gifme is part of a wave of creators whose websites and tools find their way to market from a desire to scratch a creative itch. These people are the true spirit of the digital age who create without worrying about if there will be any commercial gain.

With GIFs being used as an extension to digital conversing, and many apps with heavy comms focused on functionality, this plugin will enable UI and UX designers to better visualise the product's overall look, feel and flow before any code has been touched. Gifme one to play with, please. ■

# SHOWCASE

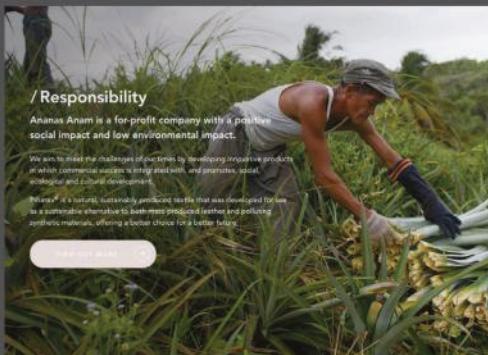
Sublime design & creative advice

THIS MONTH FEATURING...



## PROFILE 50

Fully poseable and fun to play with, the team at ToyFight have been pumping out inspired work since 2015; we find out more



## HOW WE BUILT 56

Shoes made out of pineapples? We discover how Jory & Co helped raise awareness of a new, sustainable alternative to leather

# DESIGN CHALLENGE

This month...

## FICTIONAL CHARITY

\* PROFILES



### SUSH KELLY

Digital director at Imagine, a creative studio based in Leamington Spa

w: [www.sushkelly.co.uk](http://www.sushkelly.co.uk) t: @maxray



### NEIL BERRY

Senior UX designer at Charities Aid Foundation; solves problems through design

w: [neilberry.com](http://neilberry.com) t: @neil\_berry



### CHRIS SILVERMAN

An award-winning senior designer at Vassar College in Poughkeepsie, New York

w: [www.csilverman.com](http://www.csilverman.com) t: @\_csilverman



This month we would like you to design a website for a fictional environmental charity. We'd like your site to have an impactful homepage that explains a problem clearly and concisely so as to engage visitors and encourage them to donate or volunteer.

\* SUSH KELLY

## ADITO

A site that runs on a JAMstack to minimize costs for the charity

**>** ADITO is a call to action to try and stop the destruction of the oceans. This has been highlighted recently by *Planet Earth II* and the increasing focus on plastic waste and the effects on wildlife and our coastlines. Costs for a charity of this nature are paramount as it is a type of charity that often struggles for real investment. As such, minimising ongoing costs is a priority.

The site runs on a JAMstack (Javascript, API and Markup), meaning there are no real charges to speak of as it is hosted via Github pages. The main focus of the site is awareness, events, data capture via a newsletter signup and, of course, a call for donations. It goes without saying that the site is device agnostic and is focusing on getting the message across.

It was decided that photos of stricken animals are not likely to engage; instead illustrations and facts that show the size of the problem, combined with some subtle CSS animation, would be both cost effective and engaging.

## CLOSE UP

**(1)** As tempting as it can be to jump into Sketch or Photoshop, a paper and pencil gives you freedom to develop your initial idea. **(2)** Donate/Event Switcher: the two main actions are a tabbed module; the admin can be set to be in Event or Donate mode during the marketing cycle. The Donate panel has quick choices for the donation amount to encourage a spur-of-the-moment donation. **(3)** Illustrated SVG animation: illustration can be as impactful as photographs without being as shocking. They can also be animated easily and cost effective. Particles animate on scroll independently from the animals and rubbish to give a feeling of movement. **(4)** Device-specific layout: using Flexbox and grid enables us to change layout on different devices with media queries; in this case, swapping the stack order to allow the logo to sit in the middle on mobile. **(5)** Microinteractions can give real depth to a simple design. In this case, the navigation items rotate slightly on hover to imitate floating on the water's surface.

## MY MONTH

What have you been working on/doing this month? Building a website for the Open Data Institute for the OpenActive Initiative, including a rebrand and pattern library.

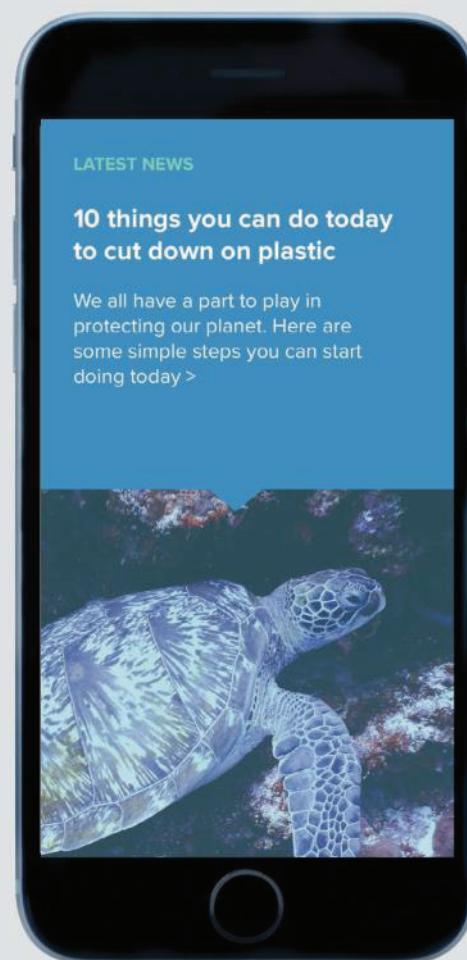
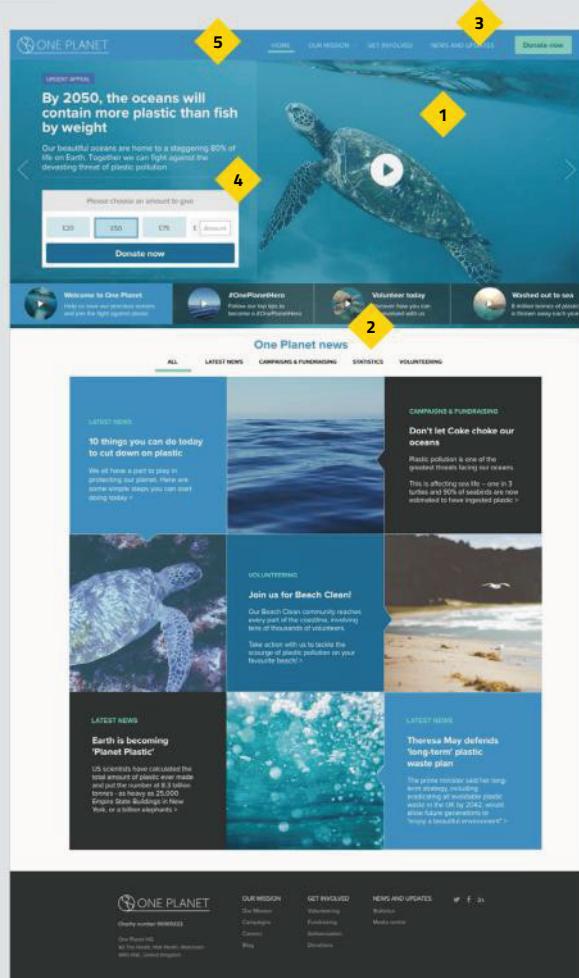
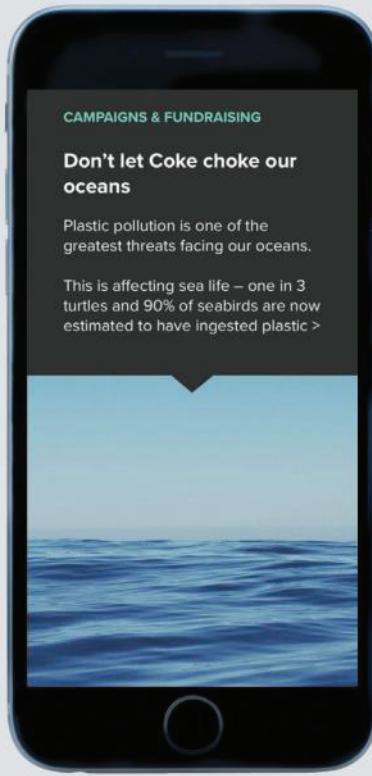
Which two websites have you visited for inspiration? SiteInspire and, dare I say it, Twitter. So many designers and developers to follow.

What have you been watching? *Adventure Time* – great on so many levels, I never get bored of it.

What have you been listening to? For words it has been *North / South* podcast – highly recommended. Music to get projects done by... mainly SpectraSoul and DLR.

# SHOWCASE

Design challenge



## MY MONTH

What have you been working on/doing this month? Busy improving the UX of our donation journey experience to drive more donations, and just back from a trip to sunny Rome!

Which two websites have you visited for inspiration? I love the site Sans Francisco, a collection of tools for designers ([sansfrancisco.co](http://sansfrancisco.co)). There is also [useronboard.com](http://useronboard.com) and [land-book.com](http://land-book.com).

What have you been watching? *Stranger Things*, *The Crown* and *Scorpion*.

What have you been listening to? I listen to a lot of podcasts. Two that I recommend are *Hurry Slowly* and *How I Built This*.

## ★ NEIL BERRY

# ONE PLANET

A website that engages users and creates an emotional impact

One Planet is dedicated to working towards a world free of plastic pollution. The funds raised contribute to running campaigns to limit the use of plastics, as well as finding solutions for reducing plastic household waste.

The emotional message of marine life struggling to cope with the amount of plastic pumped into the oceans was the main goal of the site. One Planet's supporters feel a big responsibility to reduce the amount of plastic in everyday lives, so the design showcases the various ways they can help and get involved.

A smart, blue colour palette was logical, but it is the use of impactful background videos that best tell the One Planet story and mission. Striking imagery also adds to the storytelling.

For extra flair, I'd add a small CSS3 animate-on-scroll library to animate various elements, such as the One Planet news module, as users scroll down the page.

## CLOSE UP

(1) The background video grabs attention and gives a dynamic dimension to the UX, which should lead to longer engagement. (2) Users can read the latest One Planet news, including volunteering opportunities and urgent appeals. Large images and a browsing, catalogue-style layout encourage users to explore content. Users can see all the latest content or simply choose to filter on a specific topic. (3) I needed to make giving a donation as easy as possible. Our donate button is in a stand-out turquoise colour at the top-right corner – a trend many charities adopt. (4) A quick-donation module also sits on the homepage, and I've pre-selected specific values to guide users into donating a worthwhile amount. I could also add a snippet of text for each amount for people to know the impact of their donation. (5) The hero banner will have dynamic content that the charity can use to surface important campaigns and provide value and interest for returning visitors.

welcome to source, where we ask stuff like

you can ask things too. [get started](#)

**what's the water quality in Agloe, NY?** 1

how much of Connecticut is old growth forest? 2

what are wetland laws for Greenfield, MA? 3

what soil pollutants are found in Poughkeepsie, NY? 4

**short answer: okay.** Water in Agloe, NY contains 24 out of 120 possible pollutants.

pollutant: [unobtanium ▾](#)

ppm

Year	Unobtanium (ppm)
2014	0.30
2015	0.40
2016	0.30
2017	0.45
2018	0.45

[MORE INFO →](#)

**HOW THIS WORKS**  
Where we get our data  
Custom data v. 4: making info look nice

**FOR DATA NERDS**  
Useful apps/tools  
API documentation

**JOIN THE CROWD**  
Visit our community  
Sign up as a Data Moderator

\* CHRIS SILVERMAN

## SOURCE

A website that uses a conversational UI to make public environmental data more accessible

Source is an organisation devoted to acquiring and sharing environmental data that would typically be scattered across municipal/government websites, or perhaps not be online at all. The goal of Source is to make this information as accessible as possible via natural-language queries and a direct interface; essentially, Siri for environmental data. Given the complex design of many public websites and online databases, an intuitive approach to browsing public data seems necessary.

The design is primarily text-based. Vaguely suggestive of a command-line, it implies the site's data-focused nature; the colour palette is limited to 8-bit colours associated with text-based computer terminals. (More information-heavy inner pages would have dark text on a light background for legibility.) For the typography, I'm using IBM Plex; it's free and open source, which I think matches the spirit of the design.

## CLOSE UP

(1) The most prominent element is the site's main channel for interaction: its natural-language queries. On load, the site displays example queries to guide the user; the active query appears at the top, and the letters are animated to look as though they are being typed. The salient details – environmental attribute and location – are highlighted to give the user a sense of how to phrase a query. (2) The data from each query is summarised in a simple interactive card, similar to cards displayed by Google Assistant or Siri. More Info links to a page displaying a more comprehensive view of the requested information. (3) Previous queries can also be clicked; they will highlight and display their results in the blue summary card. (4) Get Started links to a more thorough introduction. (5) The three secondary tiles focus on transparency and participation: methodology, technical documentation, and community-building resources.

## MY MONTH

What have you been working on/doing this month? Building a site to showcase Vassar's faculty, illustrating a friend's book, designing a more sustainable starter theme for my WordPress projects, and launching a blog for my design and tech experiments.

Which two websites have you visited for inspiration? Typewolf and Cargo Collective's [showcase.persona.co](#).

What have you been watching? *I, Tonya* and *Dark Matter*. *I, Tonya* was incredible.

What have you been listening to? Muse, Rush and NPR.



★ PROFILE

# TOYFIGHT

*toyfight.co*

Fully poseable and fun to play with, the team at ToyFight have been pumping out inspired work since 2015; we find out more

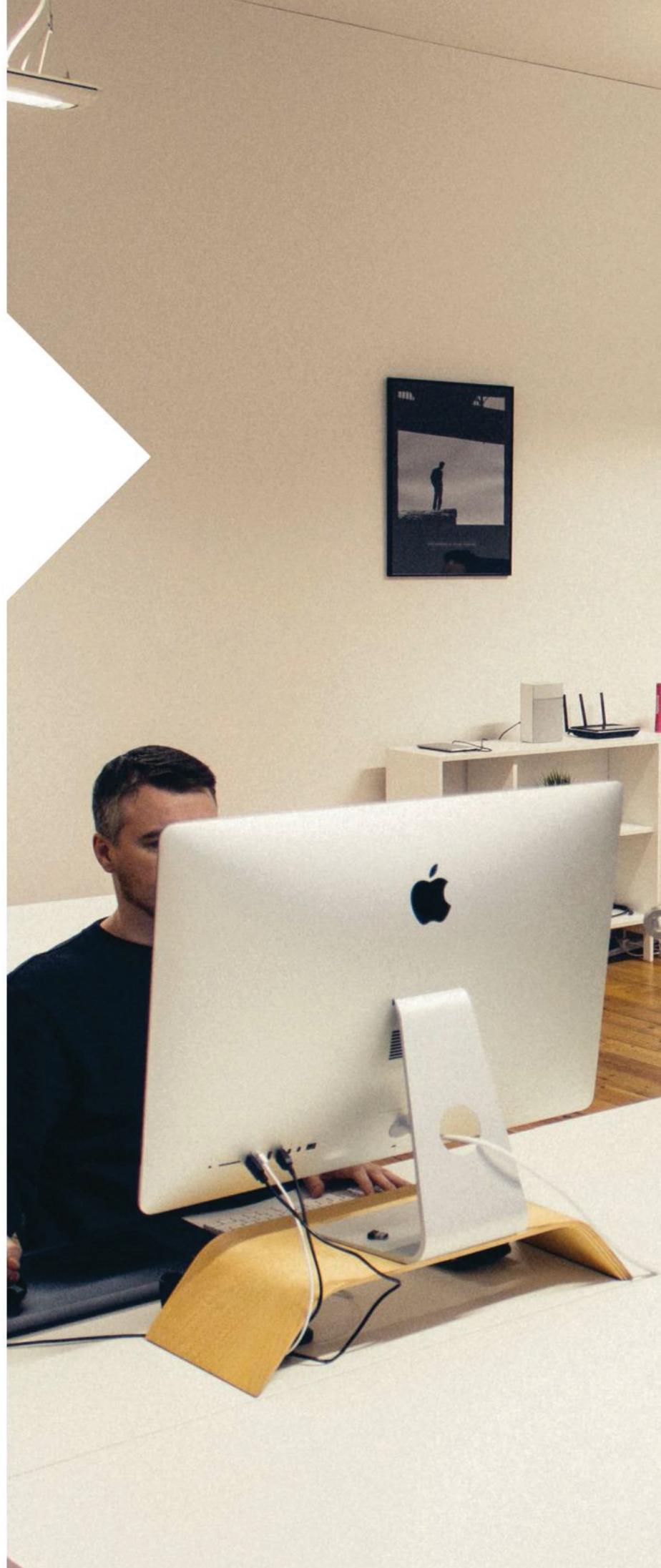
When it comes to really grabbing the attention of potential clients, it's hard to beat ToyFight's site ([toyfight.co](http://toyfight.co)), where the company's founders and creative directors, Leigh Whipday and Jonny Lander, have been painstakingly re-created as poseable action figures complete with their own accessories. It's a fantastic introduction to a company that prides itself on creating great work with lots of attention to detail, while having fun at the same time.

Founded by Leigh and Jonny in 2015 after many years spent working in various agencies and as freelancers, ToyFight has grown to accommodate seven full-time employees in its Manchester studio, and has worked with some prestigious brands along the way, with work in its portfolio for the likes of Tissot Watches, Lexus and Beats by Dre. And while the studio has made a name for itself with some impressive – not to mention award-winning – sites, there's more to ToyFight than web design; branding, packaging and app design have also featured among its projects over the past few years.

To find out more about what makes ToyFight tick, we spoke to its two founders just as they were coming back to work after Christmas. Here's what they had to say:

#### What are your backgrounds?

JL: We've both worked in the industry for around 20 years now at various agencies,



## INFO

**Location:** Manchester, UK

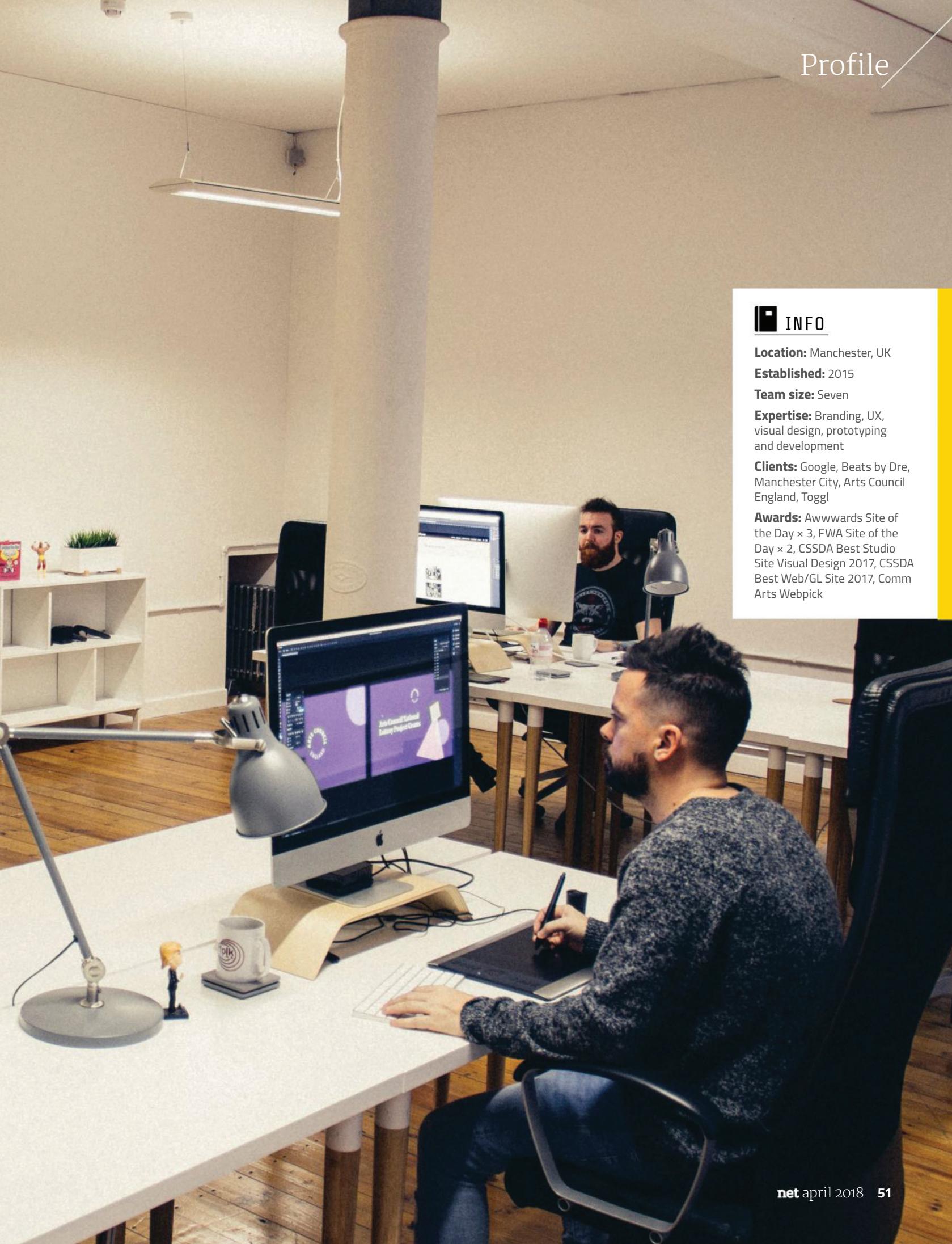
**Established:** 2015

**Team size:** Seven

**Expertise:** Branding, UX, visual design, prototyping and development

**Clients:** Google, Beats by Dre, Manchester City, Arts Council England, Toggl

**Awards:** Awwwards Site of the Day × 3, FWA Site of the Day × 2, CSSDA Best Studio Site Visual Design 2017, CSSDA Best Web/GL Site 2017, Comm Arts Webpick



► and in stints of freelance. The experience and contacts we've built up in that time have been absolutely invaluable to us with regards to ToyFight.

We're both from the north and are pretty level-headed. We don't take ourselves too seriously and like to have as much fun as possible at work.

#### **How did you come together?**

**LW:** We worked together at an agency in Manchester in the mid to late 2000s. From there we both moved to New York within a few months of each other to work at different agencies, occasionally meeting up and making drunken plans to set up on our own.

**JL:** If anything, it was driven by a fear that we'd end up as really, really old designers at some agency getting laughed at by all the youngsters. We'd never met a 60-year-old designer still on the tools!

**LW:** So, after moving back to the UK in 2012 I worked as a freelancer for a while, and then when Jonny came back we set our plan in motion. In April 2015 we officially set up as ToyFight and got to work.

#### **You describe yourselves as creative rustlers; what does that entail?**

**JL:** I think what we were getting at with that statement is that we can do a bunch of things creatively, and we understand how to make it happen. So, in some way we felt like we were corralling expressions of creativity and organising it.

**LW:** Plus it just sounded funny. I guess what we were trying to get at is that we just like to get stuck in to lots of different kinds of work.



Making time management fun is a bit of a tall order, but ToyFight's designs for Toggl do the job



The ToyFight site sets out to convey the studio's personality, and has proved to be a hit with clients as well as the design community

#### **What would you say are ToyFight's defining principles?**

**JL:** We firmly believe attention to detail and hard work makes all the difference. Not just in design, but in development too.

Above all else, going that extra mile to make sure we're happy with what goes out of the door with our name on it. We always try and over-deliver for all of our clients out of the need to satisfy ourselves as much as anything else.

**LW:** We also try to be different with the work we produce. We're not interested in doing the same thing as everybody else – that would feel pointless.

#### **Your own site is really eye-catching; how did it come about?**

**JL:** It wasn't difficult to understand that we needed to be different; after all, there seemed an endless list of agencies putting out similar sites (agency sites/portfolios) that while showcasing really great work, never really alluded to what made them great, the magic formula, their brand.

In fact, there were only a handful of agency sites out of seemingly hundreds that you really felt like you got to know a bit more about them and what made them tick. For us, as we are tiny, it was essential to get some form of who we are across.

**LW:** We actually designed and built at least four versions of the site before we settled on one. I'd say we worked on it for well over a year before we were satisfied.

As Jonny said, we really wanted something different to the other agency websites. We felt like we had a strong visual idea of our brand and how we could represent that, and let's face it, nothing says fun like micropenis, which is also a great icebreaker for new clients.

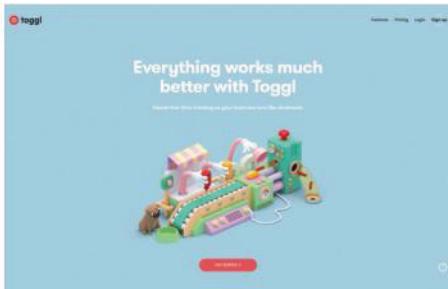
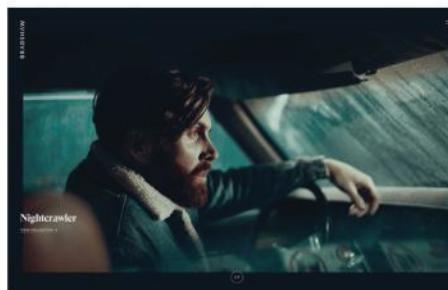
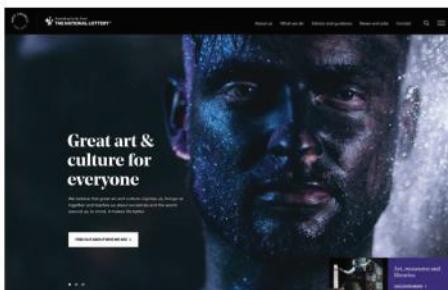
**JL:** In some ways, it has acted as a little bit of a pre-qualifier for the type of client too. We have had a number of our clients come to us just because of the way we portrayed ourselves (the brand).

**LW:** The site went down really well among our peers too. All seemed to get a bit of a kick out of it.

That said, we have plans for changing the site entirely. So watch this space.

#### **Tell us about your work with time management company Toggl**

**LW:** Toggl ([toggl.com](http://toggl.com)) approached us to ask if we could help redesign their website at the end of May last year. They wanted us to help them develop a more distinctive brand style, design language and site that would do the brand justice, be noticed, and ultimately get results.



ToyFight always goes the extra mile to ensure the team delivers imaginative work that stands out from the crowd, whatever the client

The brand and site leverage a more playful aesthetic, using bold imagery; quirky, engaging copy; and fun animations that bring unexpected moments of surprise and delight.

Overall, we spent a couple of weeks working on concepts that went down really well. The client picked a direction, then we got to work on the full visual design for the site. We did design sprints with client check-ins every week to make sure they were happy with the progress.

Once designs were signed off, we moved into development where we worked really closely with the client's internal development team. From our side, we spent a lot of time working on the interactions, animations and brand assets. Every movement and easing equation was considered to make sure we were getting the right feel for the site.

#### You built a site for a photographer, Dean Bradshaw; can you talk us through the process of this?

JL: Dean ([deanbradshaw.com](http://deanbradshaw.com)) is a good friend of ours, and we've worked together in the past on other projects. We jumped at the chance of building his portfolio, as his work is so beautiful. It's rare to get to work with such great assets.

Design-wise, the site is very straightforward. We didn't want UI or design elements to get in the way of the work, so we felt keeping it simple made the most sense. We wanted to give Dean the ability to let his imagery flow and tell a story wherever possible – crucially with few words.

LW: From a development point of view, we wanted the site to be slick with a few interesting front-end touches, like the distortion effect on the homepage.

Dean wanted the CMS to be very easy to use, so he could just upload a batch of photos and pretty much be done with it. With this in mind, we developed the site so after he uploaded the photos, we arranged them randomly in terms of order and layout to keep things fresh.

#### What is Open Continents, and how did you design its core experience?

JL: Open Continents ([opencontinents.com](http://opencontinents.com)) is a cinematic exploration of global storytelling by movie director Julius Onah. The idea was to create a site where visitors could experience different cultural stories by Julius that spanned the seven continents of the world.

The core experience uses Web/GL to showcase the director's vision and work.



**BRAD ARNETT**  
SENIOR DEVELOPER

#### What's on your desktop?

My desk is quite tidy. There are three half-filled notepads and a pair of noise-cancelling headphones that I only really use if I'm close to a deadline or I don't want to force my music on everyone.

#### What do you have on the walls?

A mix of music posters (Bowie being the highlight) and Joan Cornellà artwork.

#### What will you do for lunch?

There's a lot of great places to choose from close to the office, especially when the Friday markets are open, but usually I'll try to bring something from home.

#### What hours do you work?

9ish to 5ish, but it's quite flexible.

#### What else do you do in the office?

Other than admiring the work of 'Design Jesus' and 'The Photoshop Prophet', as they insist we call them, you mean? There's always music playing, of course, and we have a VR headset ready for if anyone needs to escape the office for a while. We also have a large vault room

left from when the building was a warehouse, but we're yet to find a use for that.

#### Do you all hang out?

We're more likely to go out for lunch but we sometimes go out for drinks of an evening.

#### Describe your office culture in three words

Small and crafty.



## ★ TIMELINE

### Key dates for ToyFight

**APRIL, 2015**

ToyFight was born, and the angels sang.

**JANUARY, 2016**

Moved into our first office, which leaked heavily every time it rained.

**FEBRUARY, 2016**

Released our debut album to critical acclaim.

**SEPTEMBER, 2016**

First proper ToyFight website launched.

**DECEMBER, 2016**

Hired our first member of staff.

**DECEMBER, 2016**

Won our first major direct client with Manchester City.

**APRIL, 2017**

Hired our first developer/all round good egg.

**JULY, 2017**

Moved into our fancy office, which doesn't leak when it rains.

**DECEMBER, 2017**

Won CSSDA Best Visual Design Studio 2017.

**JANUARY, 2018**

First international employee joined us.



Since 2015, ToyFight has grown from just its two co-founders working in a leaky office, to accommodating seven full-time employees

- We also paid close attention to the sound design to ensure the site had an atmospheric feel.

### What tools couldn't you do without?

LW: The designers use Photoshop, Sketch and Illustrator, as well as a bunch of tools to help with prototyping, in particular AE, Principle, Flint and Framer. The devs use Sublime Text and ToyBox, which is ToyFight's own framework. For communication, we use Slack, Google Hangouts and occasionally Skype. We also use Harvest and Trello for day-to-day project-management stuff.

Oh, and we talk a lot. We all sit next to each other, so no excuse!

### What sets you apart from other agencies?

JL: Aside from attention to detail and over delivery, we are very honest and transparent with our clients. We are also genuinely collaborative with clients. We will never start a project, disappear for a month then come back to them with a big 'ta-da!' reveal. We share our work as early and as frequently as possible, so we can get feedback and input from clients all the way through the process. After all, they know their business much better than we do, so we need their help in order to get the best possible results.

### What kind of projects do you find the most rewarding?

LW: Ones with lots of money. Joking aside, any projects where the client trusts our experience and expertise usually go well. JL: We especially like the projects where the client has come in thinking they want a particular thing and we then help show them that they may actually need something completely different. Always trying to start with what is the problem we are solving. After all, that is what design is all about, right?

### You've racked up plenty of awards; how do you feel about them?

LW: They are actually pretty helpful. Whenever we win an award, we get new work enquiries. It can be a bit circle-jerky, but you can't expect to get new clients if nobody knows about you. They are also helpful in attracting staff.

JL: We also don't really do any outbound activity, so awards have been really good for us getting some visibility with marketeers and business leaders.

### How do you stay inspired?

JL: Doing anything other than looking at a screen I consider inspiring. These little glowing screens we all travel around with don't do anything for our sanity. ■



As well as action figure founders, ToyFight has its share of actual action figures

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**CB** CREATIVE BLOQ

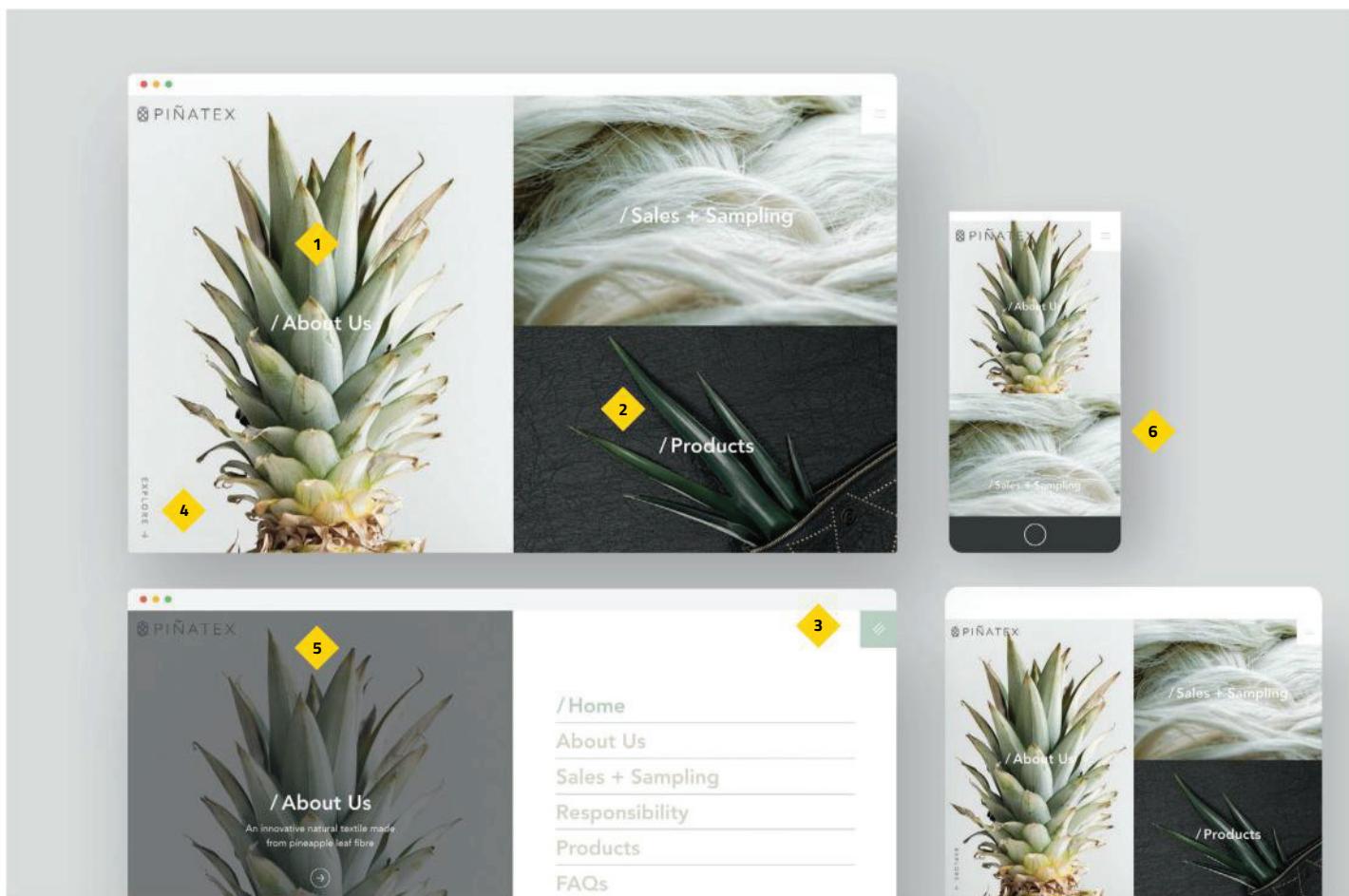
Graphic design | Art | Web design | 3D | Digital art

**www.creativebloq.com**

\* HOW WE BUILT

# PIÑATEX

Shoes made out of pineapples? We find out how Jory & Co helped raise awareness of a new sustainable alternative to leather



## CLOSE UP

### BRIEF

To build awareness of Piñatex, a sustainable alternative to leather made from pineapple leaf fibre, manufacturer Ananas Anam brought in Jory & Co to give its outdated website a complete overhaul and simplify the ordering process for potential customers.

(1) Uncluttered, fit-to-screen grid utilising beautiful photography for the three main areas of the site. (2) Elegant typography using the modern sans-serif font Avenir and the diagonal line inspired by the logo's icon is used throughout the site. (3) A hamburger menu is used for the top-level navigation and is suitable for the tech savvy audience. Once clicked, the menu slides in from the right-hand edge, taking up half the screen in symmetry. (4) A subtle animated queue for

the user to explore the rest of the homepage, once clicked it automatically scrolls down the page. (5) On hover for each section/image of the homepage, supporting text animates in with an arrow, while the image fades to a dark-grey tint, increasing legibility. This helps the user to decide what step to make next without information overload. (6) The site is fully responsive and automatically adjusts to the screen size, making for perfect viewing on all devices. Obviously!

**BEN  
JORY**



Founder and creative director of Jory & Co. Ben was project manager and creative lead.  
w: [www.joryand.co](http://www.joryand.co)

**TOM  
KATTE**



Founder of specialist agency Katté & Co, Tom coordinated the development of the site.  
w: [www.katteand.co](http://www.katteand.co)

**CLAIRE  
MUELLER**



Claire is a communications consultant who tells authentic brand stories.  
w: [www.clairemueller.com](http://www.clairemueller.com)

**> Are you wearing shoes made from leather? In the future they might be made from Piñatex – a natural textile made from pineapple leaf fibre. Piñatex was developed by Ananas Anam (ananas-anam.com) as a sustainable alternative to cheaply produced leather and synthetic materials; it's produced with a very low environmental impact, and does not contain heavy metals or banned toxic chemicals.**

To get the word out about Piñatex, Ananas Anam brought in Jory & Co (www.joryand.co) to overhaul its web presence; we caught up with those involved to find out more.

#### What was Ananas Anam looking for from this site?

**CM:** A complete overhaul, both to represent the significant development in the product and to streamline the delivery of information to varied audiences. The old site was clunky and difficult to navigate, leading to a cascade of avoidable enquiries for general information, which was a challenge for the small team to manage. Another important improvement was incorporating a payment portal to allow customers to order a swatch card directly through the website (a process that used to take seven steps and multiple emails) – orders have increased over 300 per cent through this automation!

#### How did Jory & Co get involved?

**BJ:** It was a bit of an unusual one; we originally met through a networking

Facebook group for creative-minded antipodeans living in London. Claire posted that they were after a web designer to work on a new sustainable textile website. It sounded like a great project, so we got in touch and met for coffee to talk through the brief. Off the back of that, we pitched against two agencies and were lucky enough to win the project.

#### What are the site's big design features?

**BJ:** The vision was to create a modern, informative site that helped Piñatex make a real imprint on the mind of its target audiences (designers, journalists, students, consumers and so on). We achieved this with a clean, simple layout that made use of the beautiful, full-screen photography, combined with subtle animations, overlays and layered, parallax-style functionality to give a certain depth and movement to the site. Understated elegant typography and detailed illustrations of their product life cycle also helped clearly communicate their unique story in a creative, emotive and immersive way.

#### Could you talk us through what your UX process entailed?

**BJ:** One of the main goals of the site was to simplify the different user journeys and clearly define the different areas of the business – how to buy, sales process, products, designers, social impact, environmental impact and so on. The original site had poor flow, and information was scattered throughout



#### \*TIMELINE

How the Piñatex came to fruition

**MAY, 2017**

Meet with client to receive brief and provided a stellar pitch for the project.

**JUNE, 2017**

Thankfully the client agreed! Contract signed, user profile workshop completed, sitemap, UX and over-arching strategy all agreed.

**LATE JUNE, 2017**

Present three initial concepts for homepage look and feel, and sign off on functional spec.

**JULY, 2017**

Present amended design iterations for general look and feel of key pages, combining the best elements.

**AUGUST, 2017**

Studio photo shoot of still-life, showcasing the textile and natural fibres in a modern and contemporary style added to the site.

**AUGUST, 2017**

General look and feel signed off, design applied to all templates, and create detailed life-cycle illustration to clearly demonstrate the process.

**LATE AUGUST, 2017**

Receive reportage photography of Philippines pineapple farm from photographer Jacob Maentz.

**SEPTEMBER, 2017**

Sign-off on website design and content. Hand over artwork files to the developers to start the build.

**LATE OCTOBER, 2017**

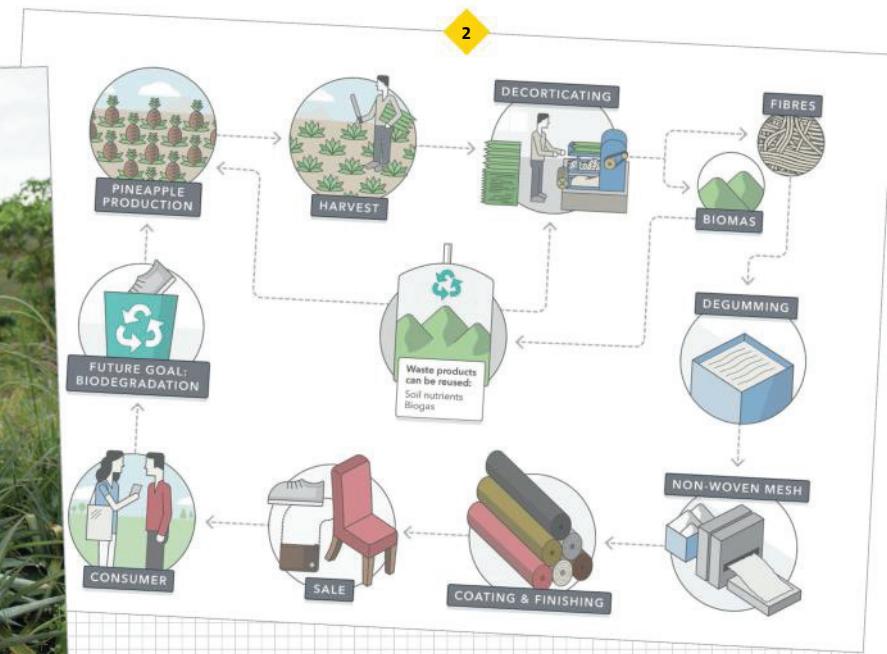
Dev site created, ecommerce functionality developed, site fully tested and successfully launched. One happy client!

# SHOWCASE

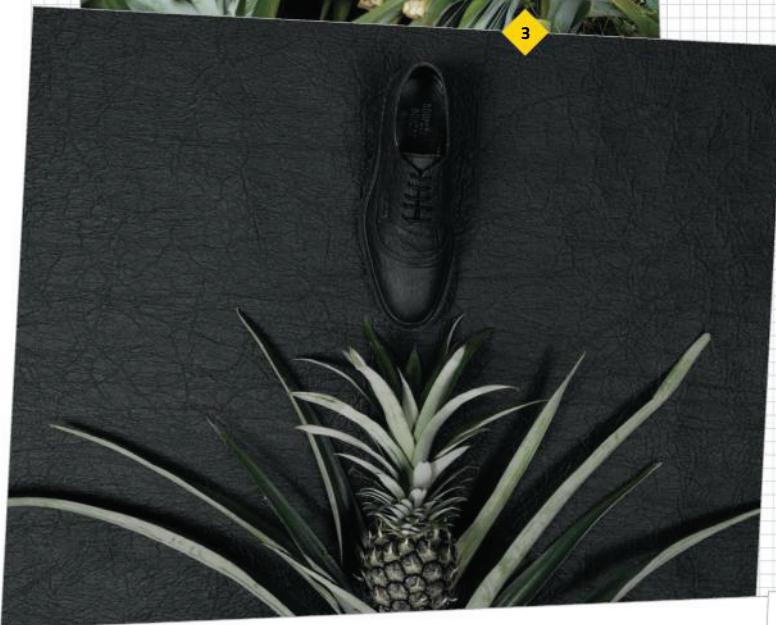
How we built



1



2



3

## REPLACE WITH



### EVO2 NEW

#### \* EVOLUTION

(1) Photography plays a vital role in the site. We commissioned a shoot at one of the supplier's farms in the Philippines. The result was natural shots that showcased life on the farms and the process involved in harvesting and preparing the crops to be transformed into textile. (2) We created a detailed illustrative infographic to demonstrate the full life-cycle of the product. (3) We also created a modern, still-life photo shoot to show the relationship between the fibres, textile and end products. (4) There were three initial designs for the homepage; this was our first attempt at a grid format, although it was ultimately too busy. (5) An early sitemap showing desired content and basic functionality.

**PIÑATEX**

**ABOUT**  
Lorem ipsum dolor sit amet, nec zill doming posidonium id, his ei bonorum quiaque complectitur.

**SOCIAL IMPACT**  
Lorem ipsum dolor sit amet, nec zill doming posidonium id, his ei bonorum quiaque complectitur.

**SALES & SAMPLES**  
Lorem ipsum dolor sit amet, nec zill doming posidonium id, his ei bonorum quiaque complectitur.

**FAQS**

**PRODUCTS**

ananas anam  
Ananas anam is a social design

TERMS | SHIPPING | CONTACT US | SALES INFORMATION | BLOG | PRESS KIT

#MADEFROMPINATEX

[Facebook](#) [Instagram](#) [Twitter](#)

4



5

► with no clear logic. We identified the different user profiles and designed bespoke UI/UX solutions for clear delivery of information, streamlining relevant content and including a secondary navigation and simple grid format on the homepage. The end result is an intuitive site that helps users to quickly find and digest the content relevant to them, and importantly keeps them coming back and engaged.

#### **What technologies are running the site?**

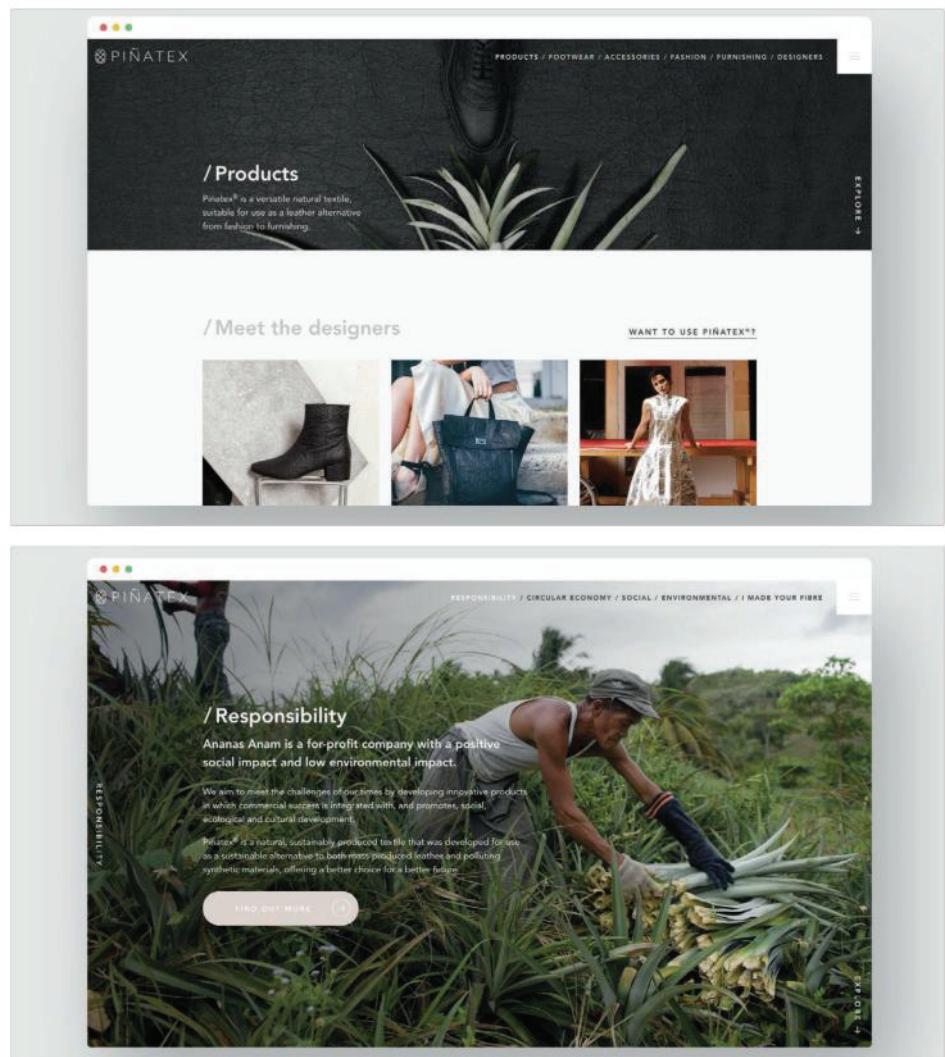
**TK:** The site is WordPress-based with a bespoke theme custom built for Ananas Anam, running on a LAMP server. In the coding for the website, as well as using modern and cutting-edge HTML and CSS technologies that modern browsers have unlocked, such as CSS Grid-based layouts, we also used JavaScript to enhance the experience visitors have. In the case of this site, while the JQuery libraries are utilised, as well as a few other open-source libraries from around the web, the JavaScript coding is what would be called ‘vanilla’ and not built through any JavaScript frameworks; the reason being, we try to avoid using technology for convenience unless it has tangible benefits in keeping costs down or improving the experience for clients and visitors alike.

#### **What were the big challenges you experienced on this build?**

**TK:** From a development point of view the biggest challenge was bringing the designer’s vision to life. With seemingly asymmetric design patterns in use, and the desire for using parallax-style effects that enable images and text to move at different rates as the visitor scrolls through the site, a lot of work needed to go into ensuring the website would work for everyone, from mobile visitors to those able to visit the site using a desktop computer.

#### **Talk us through your testing process; did it uncover any major issues?**

**TK:** We largely test as we build for major problems, checking sections of pages we build out in mobile and various browser widths/heights to uncover layout issues.



**On location** Beautiful full-screen photography draws attention to Piñatex’s aims

Once the build is complete and signed off as being ready by the designer and client in our main browser (Chrome, in this case) we then use a tool called BrowserStack to be able to browse through the website on a huge number of different devices and browsers that are relevant to our audience. Browser-centric problems are then uncovered and patched while testing to ensure that any fixes don’t cause knock-on issues with other browsers.

#### **Did you learn any useful lessons while making the Piñatex site?**

**TK:** During the Piñatex build we got to refine how we use WordPress themes for bespoke use with clients such as

these, as well as utilising WooCommerce to allow for specifically ordering and purchasing a single item rather than the more traditional use of operating a store with many items. It may sound counter-intuitive, but using ecommerce software like WooCommerce to do less than it normally would need to do is actually a more complicated task!

#### **What has the response to the new site been like?**

**CM:** Phenomenal! There has been a positive response from all angles – clients, potential clients, media, people wanting general info – and we’ve seen a huge increase in traffic to important content thanks to the UX improvements. ■

# NEW FRONTIER OF CSS



CSS animation

# ANIMATION

Ana Travas and Sergej Skrjanec, creators of Animista.net, explore the current state of CSS animation, what makes it so popular, and why it is going to be big in coming years

## AUTHORS

**ANA TRAVAS &  
SERGEJ SKRJANEC**

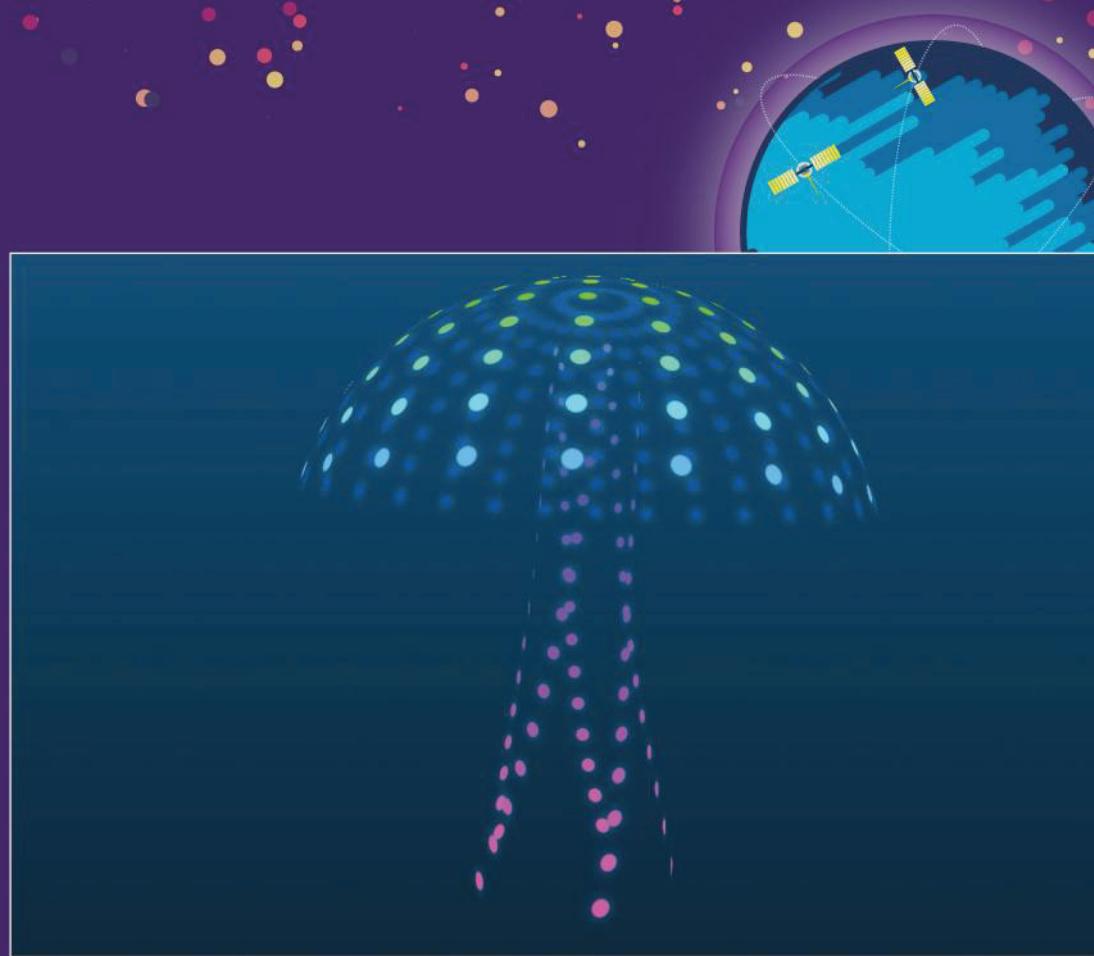
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ver the past few years, we have witnessed a change in web technologies and the way we interact with vast amounts of information. Modern browsers and design tools offer a lot in terms

of creative power. Mobile devices have turned into pocket powerhouses with enough oomph to push all those Retina screen pixels without breaking a sweat.

It should therefore come as no surprise that dynamic websites, which tap into all this power, are emerging on a daily basis. In fact, you would be hard-pressed to find a modern website that doesn't make use of animation in some way, be it in the form of simple hover transitions or in full-blown pieces of animated pixel art. There is a good reason for that, and the trend is likely to continue as we go further into 2018 and beyond.

But why has animation become such an important design element? One obvious reason is bringing life to otherwise-static content. Websites that employ well-orchestrated animation are more engaging, and immediately capture users' attention. Good animation supports the rest of the design and helps to express brand personality.

However, there are also other reasons. Humans have built mental models that help them interact with their environment. Our brains are hardwired to detect, understand and interact with moving objects. Physical objects move from one point to another gradually; they don't simply appear out of nowhere. Accordingly, animation can help propagate the natural human response to the environment by extending a similar model to digital UIs, thus making the experience of interacting with it feel a whole lot more natural.

## WHY CSS ANIMATION?

Compared to script-driven animations, CSS animations are easier to learn, and can be used without having to know

## WEBSITES THAT EMPLOY WELL-ORCHESTRATED ANIMATION ARE MORE ENGAGING... GOOD ANIMATION SUPPORTS THE REST OF THE DESIGN AND HELPS EXPRESS PERSONALITY

JavaScript. They can be made responsive as they can be modified through CSS media queries. Despite having a relatively simple syntax, we can create quite complex animations with it, especially with the help of CSS preprocessors.

CSS animation consists of a style describing the animation and a `@keyframes` block that defines intermediate steps in an animation sequence. All aspects of the animation are controlled via a set of easily understandable properties: `animation-name`, `animation-duration`, `animation-timing-function`, `animation-delay`, `animation-iteration-count`, `animation-direction`, `animation-fill-mode` and `animation-play-state`. There is also the `animation` property, a shorthand syntax that combines all of the others.

This is what the CSS animation code looks like in its simplest form:

```
/* Animation description */
.slide-right {
```

```
    animation: slide-right 0.5s ease-in-out 0.2s
    infinite alternate both;
}

/* Animation steps */
@keyframes slide-right {
    0% { transform: translateX(0); }
    100% { transform: translateX(100px); }
}
```

Using the same syntax, it is possible to animate SVG the same way as any other HTML element.

CSS animations perform really well, even on less powerful devices and under moderate system load. Unlike the script-driven animations (that is, those relying on `requestAnimationFrame` to move objects with each frame), CSS animations are not capped at 60 frames per second. Some devices like the iPad Pro and Razer Phone already support the 120Hz screen refresh rates, which in turn enables them to run CSS animations at a buttery smooth 120fps. Chances are that other manufacturers will soon follow suit.

# animista



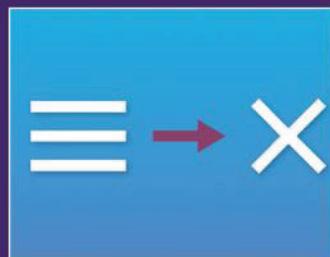
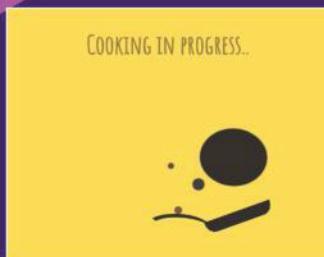
**Far left** Animated ocean jellyfish – <https://codepen.io/iamlark/full/opyBNy/>

**Top** SVG CSS keyframes animation – <https://codepen.io/anatravas/pen/GyzLoy/>

**Middle** Card UI Skeleton Screen by Max Böck – <https://codepen.io/mxbck/pen/EvmLVp/>

**Bottom left** Making pancake loader by Paweł – <https://codepen.io/pawelqcm/full/ObywNe/>

**Bottom right** Burger menu turning into a close icon



and start adopting the 120Hz standard, so it may well become an important consideration in the future.

We will explore various aspects of CSS animation and how we can use it to enhance the overall user experience.

## FUNCTIONAL ANIMATION

Animations can be applied to perform various functions in the interface. They can successfully guide users through a certain process, improve orientation and also provide visual feedback. Such animations play an extremely important role in designing a high-quality, brand-based user experience. Let's look at some examples of functional animation.

### Page transitions

Clicking the website navigation links usually results in a sudden change in

user interface. A page is requested, and when the browser receives a response from the server, a blank screen will flash briefly before the new page is shown. This interrupts the user's workflow and can be disorienting. Page transitions help minimise the distracting effect.

Instead of letting the browser handle this for us, we can intercept the request, load the new content asynchronously in the background, and then use CSS animation to create a smooth transition to another page when it is ready. This helps to promote a sense of continuity while keeping the context.

### Loaders and progress bar indicators

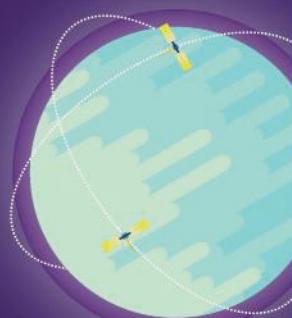
An important aspect of good interaction design is providing visual feedback. We should never leave users wondering what is happening or whether

## PERFORMANCE HINTING WITH THE WILL-CHANGE\_PROPERTY



There used to be a trick to force layer creation by applying a null-transform hack, that is `translate3d(0,0,0)` or `translateZ(0)` to an element so that the layer is already painted when the animation starts. This has recently been replaced with the `will-change` property, which has a similar effect. The difference is that `will-change` can hint to the browser about what kind of changes are expected on an element so that it can set up appropriate optimisations before the element is actually changed.

`will-change: transform;`



In case multiple properties are expected to change, comma separated values are accepted as well.

`will-change: opacity, transform;`

This can increase the responsiveness by doing potentially expensive calculations ahead of time. As with most things, however, there are some caveats. Avoid setting the `will-change` property across too many elements, and use it with elements whose properties you expect to change constantly. Browsers are already doing their best to optimise everything. When overused, it may use a lot of resources and can even have a negative impact on performance. Use it sparingly and don't worry about adding it if your page is already performing well.

Switching `will-change` on and off using JavaScript before and after the change occurs is a recommended practice. Otherwise the browser will keep the optimisations for a longer time than it would have usually.



# FEATURES

CSS animation

## USING CSS ANIMATIONS TO ENHANCE THE FORM UI

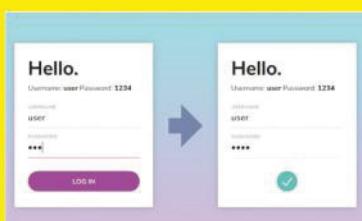
Filling an online form is a boring task that no one particularly enjoys. At times it can also be confusing, especially when users are unsure about what is expected of them. Using well-chosen labels, placeholders and clearly visible fields and buttons certainly goes a long way to prevent any confusion.

With this in mind, we can use CSS animations to create a series of micro-interactions, and make the experience of filling out the form a straightforward and more pleasant one.

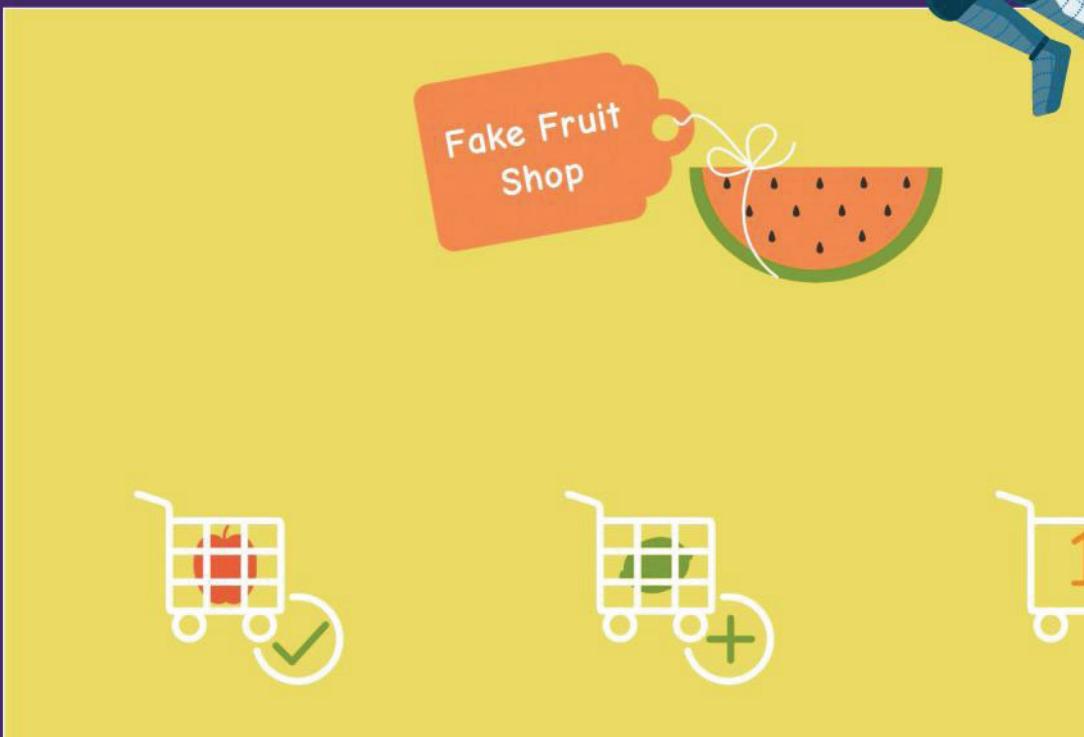
We can use floating labels instead of relying on placeholders alone. That way, when the user starts typing, instead of disappearing, labels move slightly above the input field accompanied by a subtle sliding line animation below it, informing and assuring them that they are in fact filling out the correct field.

The default error messaging behaviour can be extended with additional visual feedback. We can animate input fields in such a fashion as to emulate a head shake, quickly alerting the user about the incorrectly entered information.

Upon submitting the form, the 'submit' button can be morphed into the animated spinner, indicating that the information is being processed. We can then inform the user about the successful operation with the animated tick icon. Finally, the form can be animated out of the visible view to make place for the new content.



**Above** Using micro-interactions to enhance the login form user experience – <https://codepen.io/anatravas/pen/GyPPMY>



## A SKELETON SCREEN IS A SIMPLIFIED GRAPHIC REPRESENTATION OF THE UI TO BE DISPLAYED WHILE THE CONTENT IS LOADING IN THE BACKGROUND

► the result of an interaction has been successful or not.

When using page transitions, for example, we should let the user know not only that the page is being loaded, but also that it will be displayed shortly. One way to achieve this would be to show an animated loader indicating that the operation is underway.

If it is possible to measure the duration, we could instead show a progress bar. This method provides useful information about how long it will take for the page to load completely.

### Beyond loaders – skeleton screens

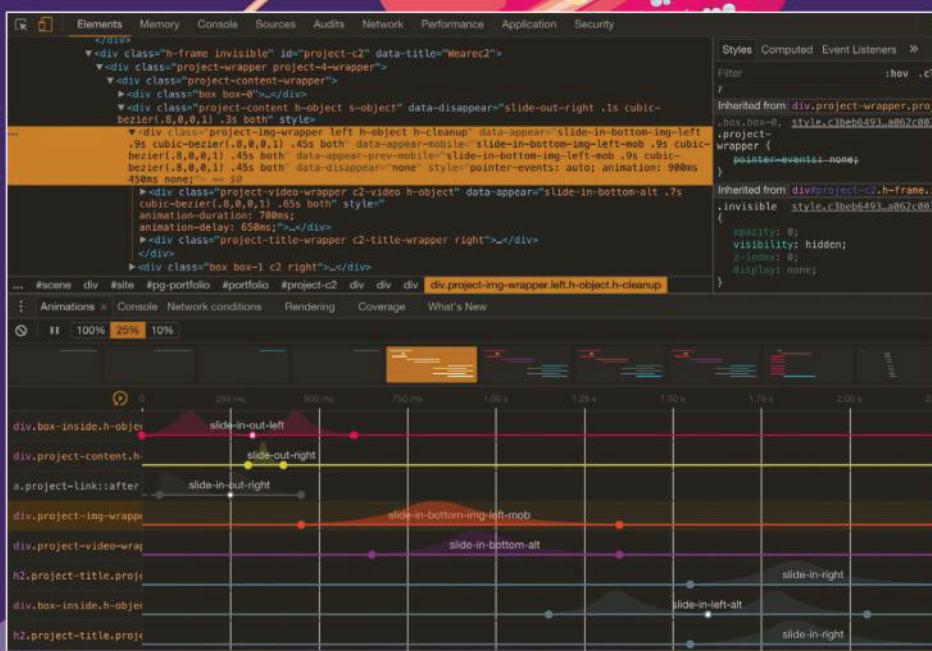
The alternative solution to loaders are skeleton screens, which can greatly improve perceived performance. A skeleton screen is a simplified graphic representation of the UI to be displayed while the content is loading in the background. The UI is divided into

smaller blocks of skeleton images, which are then swapped with real content as soon as it is ready. We can use CSS animation to indicate that the content is loading as well as to ensure that the change appears gradually.

### Micro-interactions

Micro-interactions are small tasks we perform almost automatically. Liking a tweet, adding an item to the shopping cart, sharing links – these are all micro-interactions. We can use CSS animation to provide visual cues and make the result of an action easily understandable. One example is making CTAs or various UI buttons appear tangible.

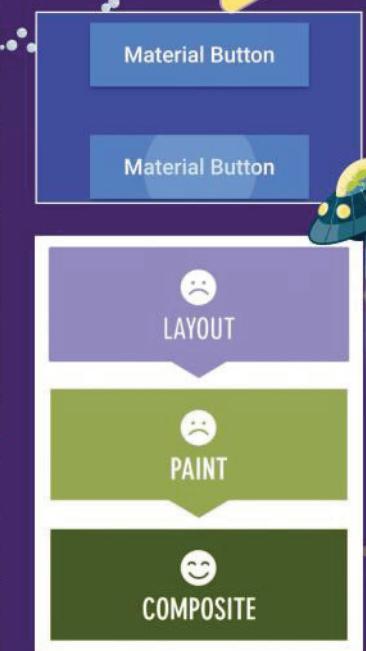
We can also use CSS animation to create a meaningful transition between states, for example, morphing a menu button from its original shape to an 'X' icon, hinting that the navigation can be closed by clicking the same button again.



**Left** Animated shopping cart button by Joni Trythall – <https://codepen.io/jonitrythall/pen/kzcnC>

**Above** Chrome DevTools are extremely helpful in debugging CSS animations

**Top right** Google material buttons trigger ripple animation when they are clicked upon



**Above** Browser render pipeline: stick to the compositor layer for best performance

Such design is both pleasing as well as being informative.

Animation can also be used to direct users' attention by highlighting the changes in the UI, like adding a new item to the shopping cart.

## Achieving 60fps

One thing to keep in mind when it comes to CSS animation is performance. It is important to keep the animations jank-free and run them as smoothly as possible. Otherwise instead of enhancing the entire experience, we very quickly risk ruining it. While there are no magical recipes for creating smooth animations besides testing frequently, there are a few principles we can follow to minimise the risk.

### Hardware acceleration

Always aim to animate only hardware accelerated CSS properties. This should be easy to remember as there are only two: `transform` and `opacity`. The goal is for all changes to happen in the compositing layer, which is the cheapest from the browser's perspective.

Other properties when changed trigger either `layout` or `repaint` operations, which

are more expensive. Avoid animating them if possible.

Transform properties can be used to scale, skew, rotate and move objects around. Using `left`, `top`, `right` and `bottom` properties to change an element's position is a common mistake. Animating these will cause the browser to recalculate the layout. Use `transform: translateX()` and `transform: translateY()` instead.

### Choreography

Don't animate too many elements all at once, or you may end up with a slideshow instead of the animation. If you find yourself in a position where you need to animate lots of objects, coordinate their motion. Plan in advance what elements you will animate and how and when you will animate them.

Animation delays are super-useful in that regard. Well timed, they can also be used to create a neat staggered motion effect. Offsetting animation start times decreases the strain on the browser, as animations won't be starting at the same time. This is much easier with the help of CSS preprocessors or JavaScript, as they support loop functions.

Here is how to stagger an animation-delay property in SCSS:

```
.staggered { animation: slide .7s ease-out both; }
@for $i from 1 through 10 {
  .staggered:nth-child(#{$i}) {
    animation-delay: 0.05s * $i;
  }
}
```

It may take a bit of experimenting in order to fully master the choreography, but the effort will be rewarded with better performance.

### Debugging

Debugging CSS animation can be a daunting task, and having some help in that regard is essential. Both Chrome and Firefox developer tools enable you to see and tweak your keyframe animations, and slow them down, as well as track their performance. It is definitely worth getting familiar with these tools.

## CONTROL CSS ANIMATION WITH JAVASCRIPT

Sometimes you need more control over your animation, and this is where

# FEATURES

CSS animation



- JavaScript comes in. There are some things that simply cannot be done in CSS alone. JS enables you to tap into different animation callback functions like `animationstart`, `animationiteration` and `animationend`.

## Restarting animation

Although it sounds trivial, restarting the CSS animation on user input is at times surprisingly tricky. Simply removing the animation class from the element and re-adding it doesn't work. We need an extra step in between and somehow trigger a reflow on the element. Here is how to do it:

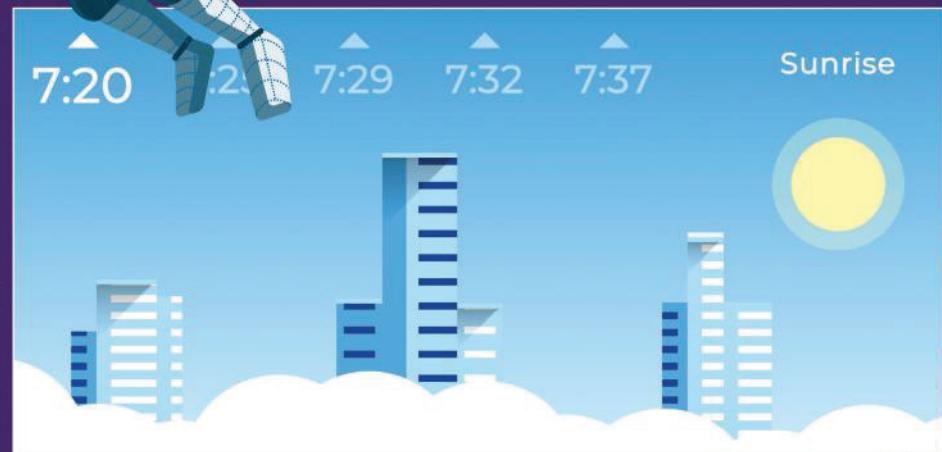
```
const elem = document.querySelector('#animated-element');
const btnRestart = document.querySelector('#btn-restart');
const restartAnimation = event => {
  event.preventDefault();
  elem.classList.remove('animating');
  // This triggers reflow
  void elem.offsetWidth;
  elem.classList.add('animating');
};
btnRestart.addEventListener('click', restartAnimation, false);
```

As a last resort, removing the element from the DOM and adding it again will restart the animation as well.

## Controlling play state

We can pause and resume the CSS animation with JS in a similar fashion:

```
const elem = document.querySelector('#animated-element');
const btnPlay = document.querySelector('#btn-play');
const btnPause = document.querySelector('#btn-pause');
const playAnimation = event => {
  event.preventDefault();
  elem.style.animationPlayState = 'running';
};
const pauseAnimation = event => {
  event.preventDefault();
  elem.style.animationPlayState = 'paused';
};
btnPlay.addEventListener('click', playAnimation, false);
btnPause.addEventListener('click', pauseAnimation, false);
```



**CUSTOM PROPERTIES ARE INHERITABLE. CHANGING THEIR VALUES WILL TRIGGER STYLE RECALCULATION FOR ALL OF THEIR CHILDREN... SET THEM AT THE MOST SPECIFIC LEVEL**



```
playAnimation, false);
btnPause.addEventListener('click',
  pauseAnimation, false);
```

## A LOOK INTO THE FUTURE

There are a few exciting standard CSS features outlined in the spec that are currently in the pipeline and partially implemented in some browsers already. Two of them are particularly interesting when looking from the CSS animation perspective: CSS Variables or more accurate `CSS custom properties` and the `Motion Path` module.

## Animate with CSS custom properties

Although variables have been available in CSS pre-processors for some time now, one thing makes CSS custom properties far more flexible and extremely usable in animation scenarios.

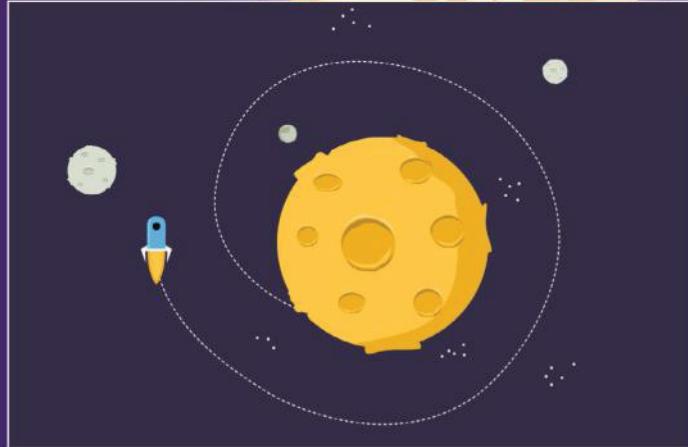
We can certainly take advantage of the fact that we are able to manipulate them dynamically at runtime via the `getProperty()`, `setPropertyValue()` and `removeProperty()` JS methods. For example, our CSS code might look something like this:



**Top left** Sunset/Sunrise Animation with CSS Variables by David Khourshid – <https://codepen.io/davidkpiano/pen/VmMWZW/>

**Bottom left** Single Div Accordion (Animated with CSS Variables) by Dan Wilson – <https://codepen.io/danwilson/details/BRdJVZ/>

**Right** CSS Animate on SVG Path – <https://codepen.io/yisi/pen/rQqQzq/>



```
#animated-obj {
  --xPos: 100px;
  animation: slide .4s ease-out both;
}
@keyframes slide {
  to% { transform: translateX(var(--xPos)); }
}
```

We can then access the `--xPos` property in JS:

```
const elem = document.
getElementById('animated-obj');
// Read the property value declared in our CSS code
const currentX = elem.style.
getPropertyValue('--xPos');
```

#### Set it to new value

```
elem.style.setProperty('--xPos', '300px');
```

#### Remove the property

```
elem.style.removeProperty('--xPos');
```

This opens up interesting possibilities, and provides developers with new ways to pair CSS Variables with animation that weren't possible before. You can see great examples of animating with CSS Variables on CodePen in this feature's images.

It is worth mentioning that custom properties are inheritable. Changing their values will trigger style recalculation for all of their children, so good practice is to set them at the most specific level.

#### CSS Motion Path module

Motion Path module enables us to

- animate objects along a custom path. The specification defines the following properties: `offset-path`, `offset-distance` and `offset-rotate`. `offset-path` defines coordinates on which the object will move during animation, `offset-distance` specifies a position along an offset-path and `offset-rotate` defines the direction of the element while positioning along the offset path.

Here is the simplified example in CSS:

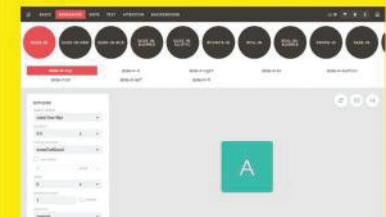
```
.animated-obj {
  offset-path: path('M100,250 C 100,50
400,50 400,250');
  offset-rotate: auto;
  animation: move .5s linear infinite;
}
@keyframes move {
  from { offset-distance: 0%; }
  to { offset-distance: 100%; }
}
```

## CONCLUSION

The days of designing for static screens are long gone, as are the days when animation meant Flash banners and popups. We should welcome the interactive nature of modern web and start thinking about animation in early stages rather than as an afterthought.

If you haven't already done so, now is the perfect time to dive into the exciting world of CSS animation. With a bit of creativity, careful planning and modern tooling, there is almost nothing that can't be achieved. ■

## TOOLS & RESOURCES



### Animista

<http://animista.net>

A place where you can play with a collection of pre-made CSS animations, tweak them and get the CSS animation code to use in your projects.

### Stop Leaving Animation to the Last Minute

<https://24ways.org/2017/stop-leaving-animation-to-the-last-minute/>

Val Head discusses motion comps, animated prototypes and the importance of including animation in the early phases of design process.

### CSS Triggers

<http://csstriggers.com>

An excellent online reference for the render impact of mutating CSS properties constructed by Paul Lewis and Das Surma.



### Making CSS Animations Feel More Natural

<https://css-tricks.com/making-css-animations-feel-natural/>

An article on how to achieve natural motion using CSS animation by Brandon Gregory.

### CSS Animations on MDN

[https://developer.mozilla.org/en-US/docs/Web/CSS/CSS\\_Animations](https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Animations)

A collection of CSS animation-related guides and references.



Progressive Web Apps are here, but there are many challenges and abilities you might be missing. Use this guide to ensure you are creating a good user experience in your PWA

# P

WA support started with Chrome on Android, and is now available on most other Android browsers, such as Opera, Firefox, Samsung

Internet and UCWeb. But there will also be full PWA support on iPhones and iPads from iOS 11.3, and they will be available on Edge for Windows and Chrome on desktop operating systems later this year.

To help you create a good experience for this growing user base, we're going to share some vital tricks and ideas.

## WebAPK vs Android shortcut

In 2017, Chrome rolled out a new feature for Android users: WebAPK. Now, when your users install your PWA (if it meets the requirements), a Google Play server will create an APK (Android Package, a native app container) on the fly and install it in the device as if it's coming from the Play Store. Your user doesn't need to enable insecure sources or touch any other settings.

When the PWA is installed, it will appear in the home screen, in the app launcher, in Settings and as any other first-class citizen app in the OS, including information on battery and space used in the system.

If your PWA doesn't meet all the requirements, the Play service is down, there is a connection issue, or another Android browser such as Firefox or Samsung Internet is being used, a standard shortcut to the home screen will be created. That icon will be browser-branded from Android 8+.

WebAPK also enables a nice but dangerous feature you need to be aware of: the PWA will own the domain and path within the boundaries of the Android OS. Based on the scope attribute of your Web App Manifest, every link the user receives to that scope will be forwarded to your full-screen app and not the browser, which means you must pay attention to the URLs you use.

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► Let's say you have a PWA serving mobile users and it's on the root folder of your domain. When the app is installed through WebAPK, the whole domain will now be owned by the PWA. If you have a survey at /survey that you share through Facebook, or a PDF with terms and conditions that you email to your users at /terms.pdf, the OS will open PWA and not the browser when clicking those links. It's essential to check if your PWA routing system knows about those URLs and how to serve them and, if not, to open them in a browser on a different scope.

### Create a custom web app installation banner

Several browsers invite the user to install your PWA if certain conditions are met, including recurrent visits from that user for your PWA. At the moment, the banner doesn't include enough information for why a user should accept. However, we can use events to avoid the banner and, more importantly, to defer it for something more likely to generate acceptance, such as an install icon.

The first step is to cancel the appearance of the banner and save the event object for later usage:

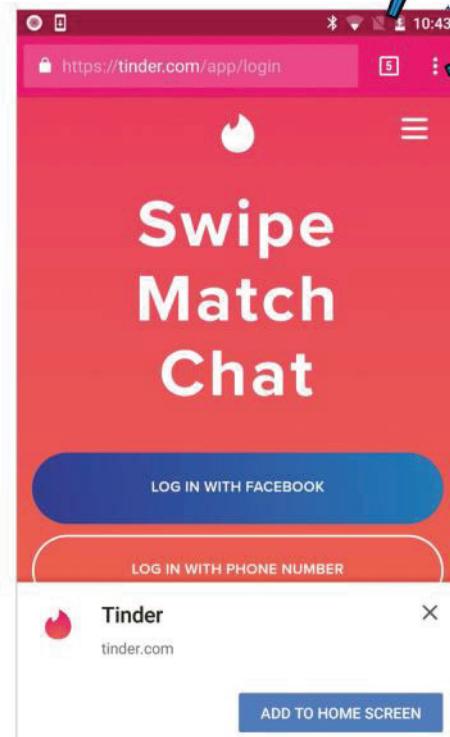
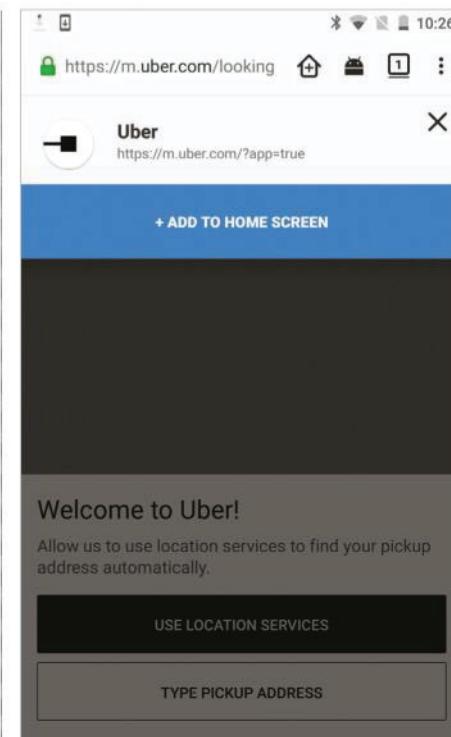
```
// global variable for the event object
var installPromptEvent;
window.addEventListener('beforeinstallprompt',
function(event) {
  event.preventDefault();
  installPromptEvent = event;
});
```

The next step is to provide a user interface to explain the advantages of installing, or an Install button. That user interface will call our next function:

```
function callInstallPrompt() {
  // We can't fire the dialog before preventing default browser dialog
  if (installPromptEvent !== undefined) {
    installPromptEvent.prompt();
  }
}
```

### Share content from your PWA

When your PWA is in full-screen mode, there is no URL bar or Share action from



**Custom workaround** We can't customise a browser's web app installation banner, but we can defer them after we show more information to the user

**AT THE MOMENT, THE WEB APP BANNER DOESN'T INCLUDE ENOUGH INFORMATION FOR WHY A USER SHOULD ACCEPT. HOWEVER, WE CAN CUSTOMISE WHEN IT WILL APPEAR**

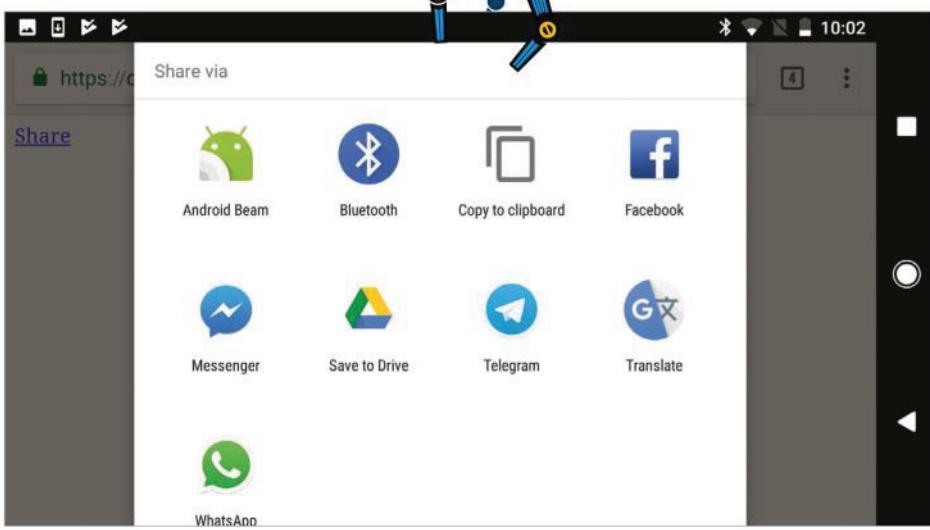
the browser for the user to share content with social networks. We can take advantage of the Web Share API and have a fallback to open native social apps.

```
function share() {
  var text = 'Add text to share with the URL';
  if ('share' in navigator) {
    navigator.share({
      title: document.title,
      text: text,
      url: location.href,
    })
  } else {
    // Here we use the WhatsApp API as
    // fallback; remember to encode your text for URI
    location.href = 'https://api.whatsapp.com/
send?text=' + encodeURIComponent(text + ' - ')
+ location.href
  }
}
```

### Analytics tracking

When you have a PWA, you will want to track as many events as possible, so let's take a look at everything we can currently measure. You can use Google Analytics APIs or any other analytic tools to track these events later.

```
window.addEventListener('appinstalled',
function(event) {
  // Track event: The app was installed (banner
  // or manual installation)
});
window.addEventListener('beforeinstallprompt',
function(event) {
  // Track event: The web app banner has
  // appeared
  event.userChoice.then(function(result) {
    if (result.outcome === 'accepted') {
      // Track event: The web app banner was
      accepted
    }
  })
});
```



**Share links** On compatible browsers, the Web Share API will trigger the well-known share dialog from the operating system

```
} else {
    // Track event: The web app banner was
    // dismissed
}
});
```

The next important tracking event is when the user opens the app from the home screen. That means the user has clicked the app's icon or, on Android with WebAPK support, also clicked on a link pointing to the PWA scope.

The simplest way to do this is through the manifest's `start_url` attribute, adding a tracking event in the URL that can be automatically used as an origin from an Analytics script, such as:

```
start_url: '?utm_source=standalone&utm_
medium=pwa'
```

Also, the following script leaves us a boolean stating if the user is currently in a browser (true) or a standalone app mode (false):

```
var isPWAinBrowser = true;
```

```
// replace standalone with fullscreen or minimal-
ui according to your manifest
if (matchMedia('display-mode: standalone').
matches) {
    // Android and iOS 11.3+
    isPWAinBrowser = false;
} else if ('standalone' in navigator) {
    // useful for iOS < 11.3
    isPWAinBrowser = !navigator.standalone;
}
```

Then, if you use push notifications, you can track several events in the service worker, such as:

```
self.addEventListener('push', function(e) {
    // Track event: Push Message Received
});
self.addEventListener('notificationclick',
function(e) {
    // Track event: Push Message Clicked, you can
    // read e.action.id to track actions
});
self.addEventListener('notificationclose',
function(e) {
    // Track event: Push Message Dismissed
});
```

## CREATE A COMPATIBLE iOS PWA

While many think PWA support is about to land for the first time on iOS 11.3, the truth is that the concept – albeit with a different name – was presented by Steve Jobs more than ten years ago at WWDC 07. That's why iOS supported home screen and offline apps for a while, using legacy techniques. But from iOS 11.3, it will start to support the same specs as Android.

If you still want to offer an installation experience before iOS 11.3, you need to add meta tags or use a polyfill this author created at <https://github.com/firtman/iWAM>

Now your PWA will be offline-capable and installable on iOS even if you don't opt-in for iOS. It's important to understand some differences that might affect your PWA user experience on iOS:

**1** Icons on iOS must be square and non-transparent to avoid UI problems. Don't use the same icon you have on Android. Use 120x120 and 180x180 for iPhones.

**2** If you have an SPA or you link to other pages on your scope, be careful with navigation, as iOS users don't have a way to go back or forward if you don't provide navigation links within your UI. Swipe gestures don't work on full-screen PWAs.

**3** As of the first versions of iOS 11.3, the OS reloads PWAs on every access to the app, so if the user needs to get out of the app to come back later (for example, for a two-way authentication process), remember your app will start from scratch by default.

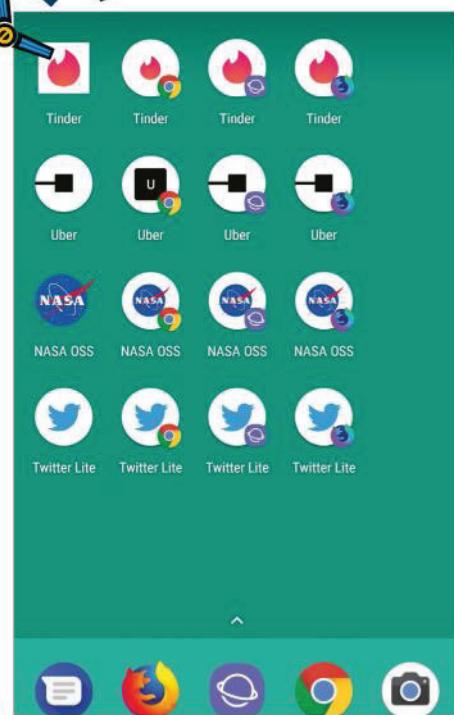
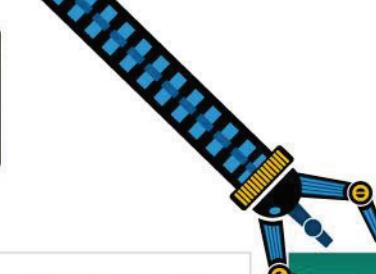


**Consider iOS** When doing PWAs on iOS, always make sure you check your status bar definition, which will create different status bar experiences



# FEATURES

9 amazing PWA secrets



**Different icons** The first column shows WebAPK icons and the rest are browser-branded PWAs installed without WebAPK on Android 8+

## ▶ Syncing data in the background

Service workers have a separate life cycle from the PWA window or browser's tab. That's why you can make network operations in the background, even after the user closes the PWA. If there is a pending operation and there is no available network access at that point, the engine will let us process while in the background if a connection is detected later.

The Background Sync API is currently only available on some browsers, so you must provide a fallback. The idea is that your PWA will set a flag with a string tag, stating that it needs to do background sync operation.

```
navigator.serviceWorker.ready.  
then(function(reg) {  
  reg.sync.register('myTag')  
});
```

Then, on the ServiceWorker we listen to the event, and if it's the label, we are expecting we return a promise. If the promise is fulfilled, then the operation is flagged as finished. If not it will keep trying later in the background.

```
self.addEventListener('sync', function(event) {  
  if (event.tag === 'myTag') {  
    event.waitUntil(doAsyncOperationForMyT  
ag());
```

```
});
```

## Social networks and pseudo-browsers

If your users share your PWA content on social networks, or if they use pseudo-browsers (browsers without their own engine but using web views), you need to be aware of some issues.

For example, Facebook uses a WebView inside the Android and iOS apps to offer an in-app browsing experience when the users click on a link. On Android, most of the WebViews don't support service

dialog explaining the value of installing your app, check if you are within a WebView because the user won't be able to follow your steps. Hide that information or invite the user to open the URL in the default browser. This applies to Facebook on Android, Facebook on iOS, Chrome on iOS and Firefox on iOS, among other apps. Doing

## SERVICE WORKERS HAVE A SEPARATE LIFE CYCLE FROM THE PWA WINDOW OR BROWSER'S TAB. THAT'S WHY YOU CAN MAKE NETWORK OPERATIONS IN THE BACKGROUND

workers and can't install your PWA, so when the user opens your content from Facebook, your PWA will act as if it's a non-compatible browser without any cached files or session details. From iOS 11.3 the WebView will support service workers, but it will be a clone of the same PWA that the user has used in Safari or even in other pseudo-browsers, such as Chrome or Firefox on iOS.

Therefore, if you are rendering an installation banner or installation hint

a live check if you are on a WebView or not is tricky, but there is a helper tool available at <http://www.npmjs.com/package/is-webview>.

## Publishing to stores

While the PWA approach didn't start with the stores in mind, some offerings, including Twitter Lite and Google Maps Go in the Play Store, started to serve PWAs on the stores. If this is something you are interested in, to distribute your

**Testing Service Workers and PWA features**

- Testing started...
- PWA in browser mode - JS detection
- PWA in browser mode - CSS detection
- PWA in browser mode - URL detection
- Service Worker serving files on first load
- Service Worker Registered at https://mobilehtml5.org/tests/sw/
- **Background Sync not available**
- Files cached
- Service Worker Activated
- Service Worker ID 4521
- Service Worker serving files after skipWaiting

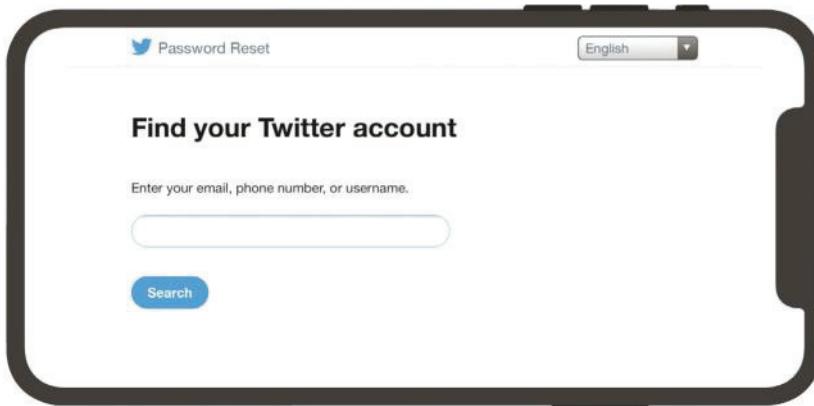
**Testing Service Workers and PWA features**

- Testing started...
- PWA in browser mode - JS detection
- PWA in browser mode - CSS detection
- PWA in browser mode - URL detection
- Service Worker serving files on first load
- Service Worker Registered at https://mobilehtml5.org/tests/sw/
- **Background Sync not available**
- Files cached
- Service Worker Activated
- Service Worker ID 6117
- Service Worker serving files after skipWaiting

**Testing Service Workers and PWA features**

- Testing started...
- PWA in browser mode - JS detection
- PWA in browser mode - CSS detection
- PWA in browser mode - URL detection
- Service Worker serving files on first load
- Service Worker Registered at https://mobilehtml5.org/tests/sw/
- **Background Sync not available**
- Files cached
- Service Worker Activated
- Service Worker ID 399
- Service Worker serving files after skipWaiting

**No share** WebViews don't share service workers with the default browser; these examples show the same iOS device and PWA on Safari, Chrome and Facebook in-app browser, each having a different service worker instance



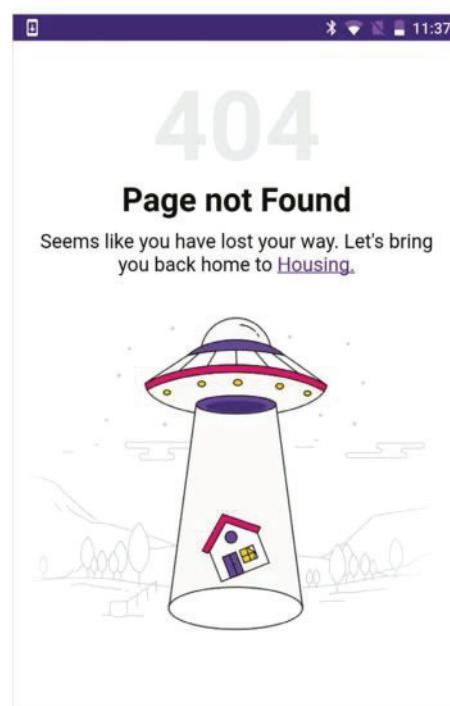
**Navigation setup** Standalone PWAs on iOS don't have navigation UI such as a back button or navigation gestures, so you must provide your own. In this case, we see a Twitter PWA page without navigation; the user is stuck there!

PWA without packaging it with Cordova, your available options are:

● **Microsoft Store:** You can create a PWA for Windows 10 using the official tool from [pwabuilder.com](#)

● **Google Play Store:** At the time of writing, the Trusted Web Activities available on Canary Channel enable you to create an Android app that just opens a PWA you own and distributes it in the Store, creating a similar solution to WebAPK. You can learn more at <http://developer.google.com/web/update/2017/10/using-twa>

● **Apple App Store:** Currently there are no official solutions to distributing PWAs, but WKWebView will support service workers from iOS 11.3, so it won't be difficult to create a simple wrapper for a PWA. The question is, will Apple approve it in the Store? Apple doesn't want solutions that are just websites with a wrapper on it. ■



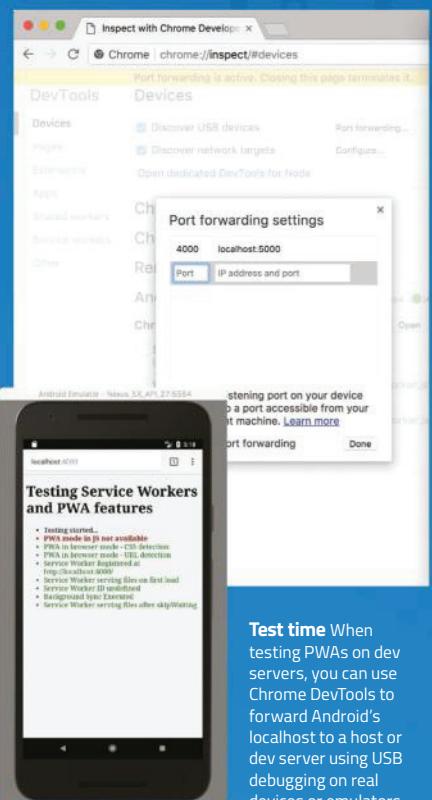
**Bad URLs** With WebAPK your users can see a 404 page inside your standalone apps when using URLs that are not supposed to be inside the PWA

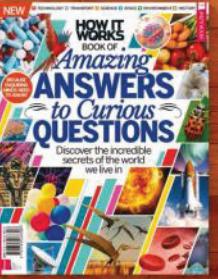
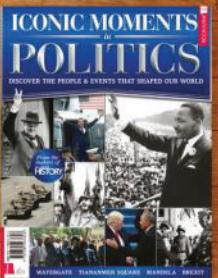
## TEST ON ANDROID DEVICES AND EMULATORS

### Testing service workers and Web App

Manifest requires https, with the exception of localhost. While local desktop testing is fine initially, at one point we want to see our PWAs in action on Android devices. How can we do that? Accessing a dev server from our phone or Android emulator won't work because it's not https and it's not localhost from an Android OS point of view.

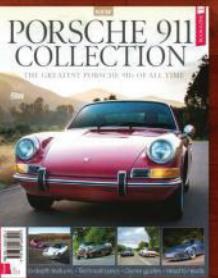
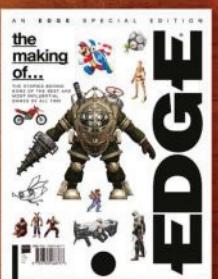
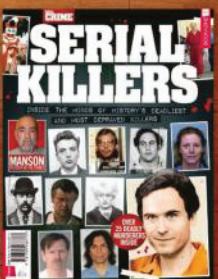
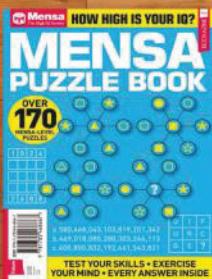
The solution appears with Chrome Developer Tools. If we go to `chrome://inspect` and open an emulator or a real device with USB debugging connected, we will be able to enable port forwarding. Then `http://localhost` on our Android device will be forwarded to our host computer's localhost or any other host. With this trick, Android will render the PWA properly over a non-secure connection. Have in mind, though, that while WebAPK will create the package and install it, it might not work in standalone mode.





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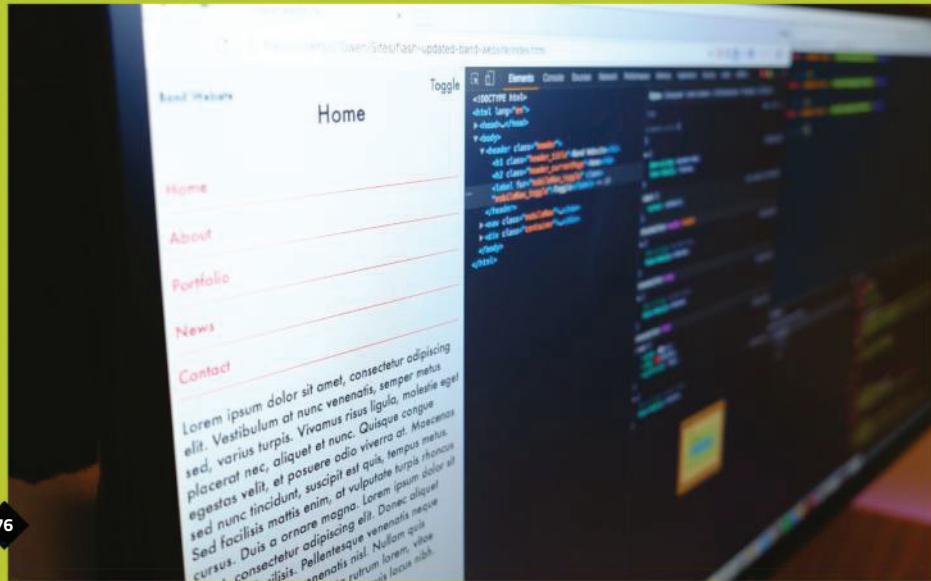


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# PROJECTS

Tips, tricks  
& techniques

THIS MONTH FEATURING...



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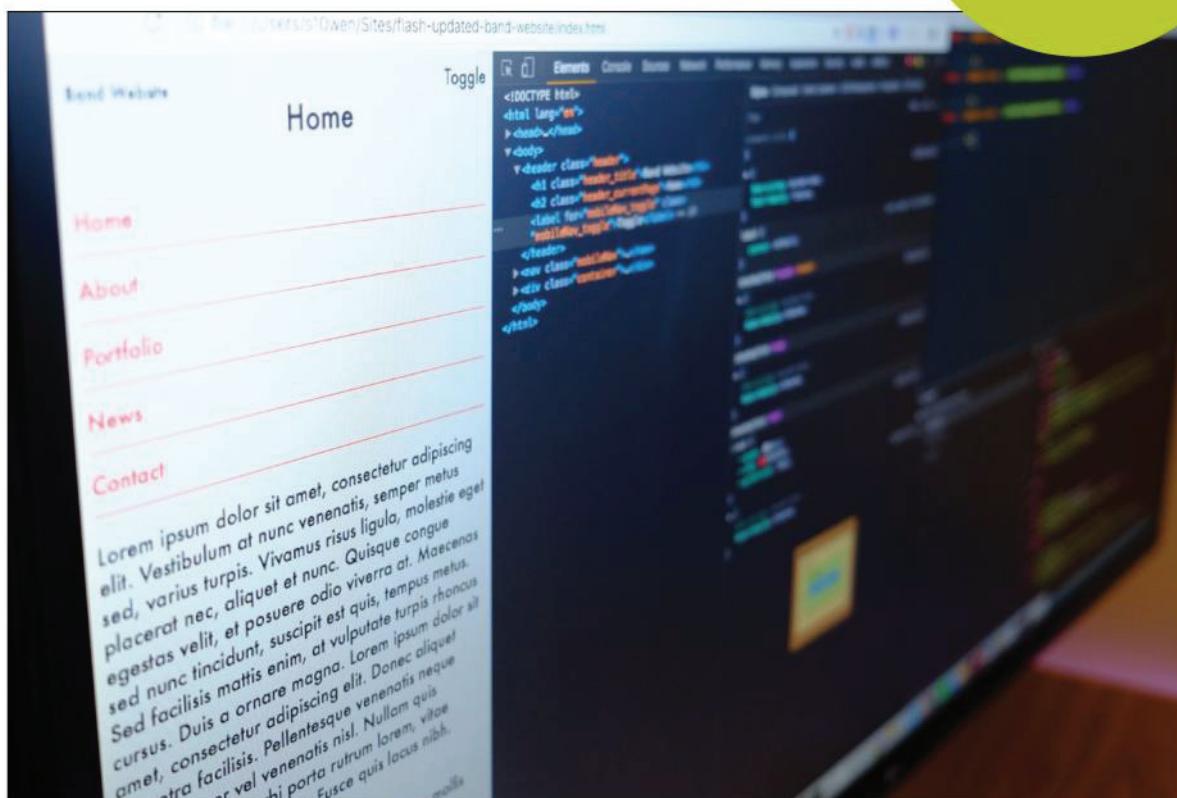
job: Freelance front-end developer

**areas of expertise:**

All-round front-end developer, style guides, pattern libraries, architecture, team work, speaking, workshops

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All the files you need for this tutorial can be found at  
<http://bit.ly/2DIZDeY>



\* HTML, CSS &amp; JAVASCRIPT

# REBUILDING A 2004 FLASH WEBSITE IN 2018

**Simon Owen** rebuilds a 14-year-old Flash website with HTML, CSS and JavaScript for the web today

 In 1999, I built my first website using Web Studio 1.0. Web Studio was a graphic user interface. It was possible to create a new canvas and drag and drop elements into it. I then set up a free domain and hosting with GeoCities and voila! I had a website. Fast forward to 2004, inspired by the work of [advanced.com](http://advanced.com), I wanted to take steps further and so like many others, I set out to build a band website.

A lot has changed since then. In this article, I'm going to be taking a trip down memory lane and re-create the same site for the web today.

So, let's start! First off, generally every new project for me starts with `mkd` followed by `git init`. For those of you who know me, at some point, I've probably

mentioned dotfiles to you. Dotfiles are files that simply begin with a dot (it took me a surprisingly long time to actually make that connection!) and they can be used for a number of purposes. Two of my favourite dotfiles are `.alias` and `.functions`. Let me elaborate...

In bash, it's possible to create a new directory using the command `mkdir` then after that you'd have to change directory `cd` into the directory that you have just created. Using the code I have in my `.functions` file, it's now possible to run `mkd`. This will not only create the new directory, but also have changed into that directory as well. This may seem overkill at first, but I love these micro wins. Over

time, especially if running these commands several times a day, they soon add up to a lot of saved time.

```
# Create a new directory and enter it
function mkd() {
    mkdir -p "$@" && cd "$_";
}
```

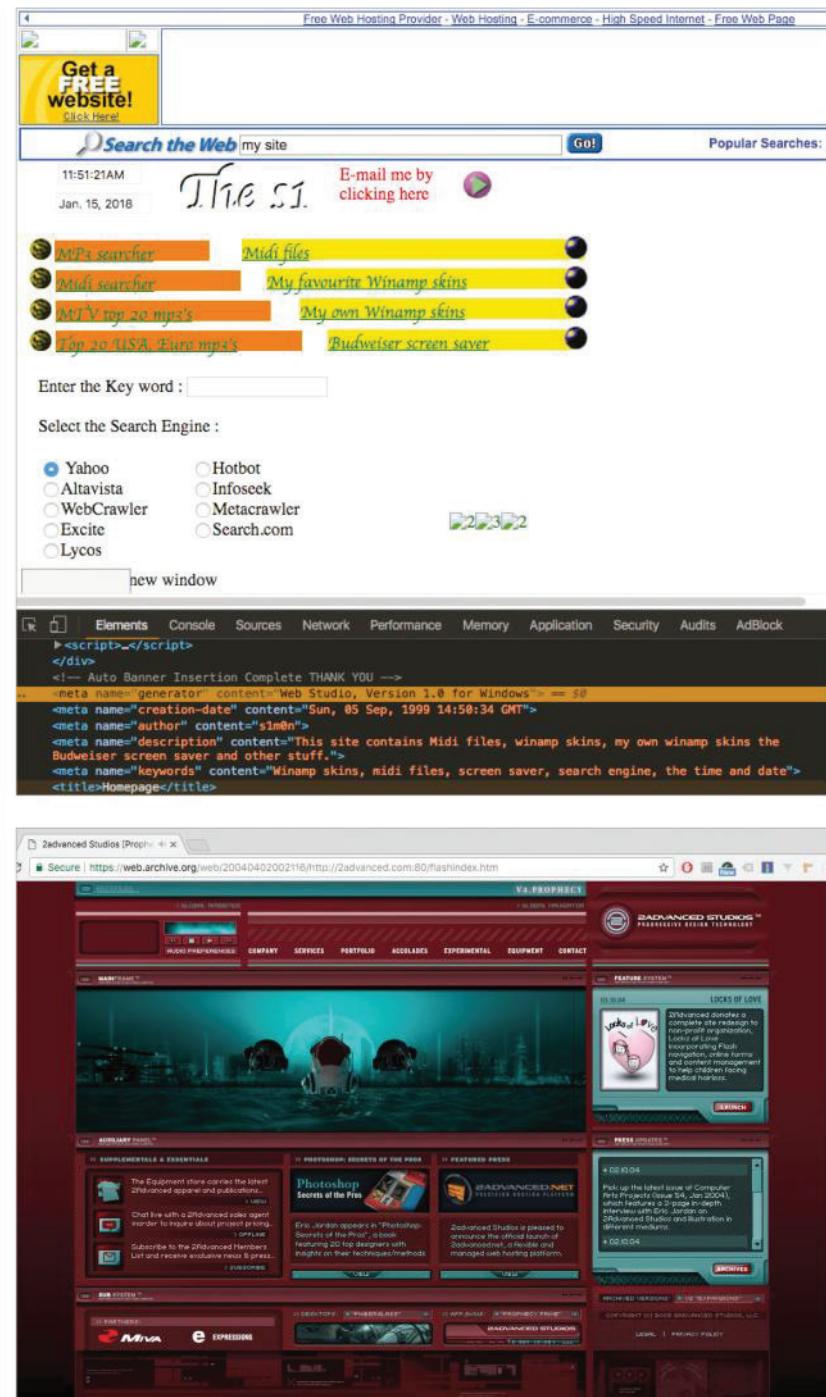
The next command, if you're familiar with git is simply `git init` this will enable us to version control the project. I use git a lot, even for shopping lists! So rather than having to type out git every time, adding alias `g="git"` to `.aliases` again is a nice, small time saver for me.

These days, there's a plethora of different frameworks and technologies. For this project, I want to keep things simple. I'm going to use HTML, CSS and if required a sprinkle of JavaScript. First up, let's create the basic HTML markup. But wait! Let's stop and think for a minute.

## “Before writing any code, I’m going to get out a good old-fashioned pen and paper”

Sometimes developers, myself included, can be super excited about a project and want to get cracking immediately and go straight for the keyboard to write code. However, I find this is often not the best approach. I love to get an overview in mind of the project first. By doing this and having a much clearer vision of the project as a whole, I find it allows for much better decision making. For example, if I dived straight into the code, I might encounter an issue that I'd then have to go back and refactor. There are a few different outcomes with this approach. First, it might be that I have to delete the code entirely and start again; second, if continuing in this fashion I may end up with ‘spaghetti code’ making it difficult in the future to update, debug and result in performance loss; third, sometimes it does work out okay and you end up with better code, but I'd tend to say the first and second outcomes are far more common.

This project is fairly small; it has a few pages: Home, News, Gigs, Media, Albums, Links and common parts among these pages: header, navigation, typography content, lists, images, videos. When originally building the Flash site in 2004, things were a lot more simple in terms of

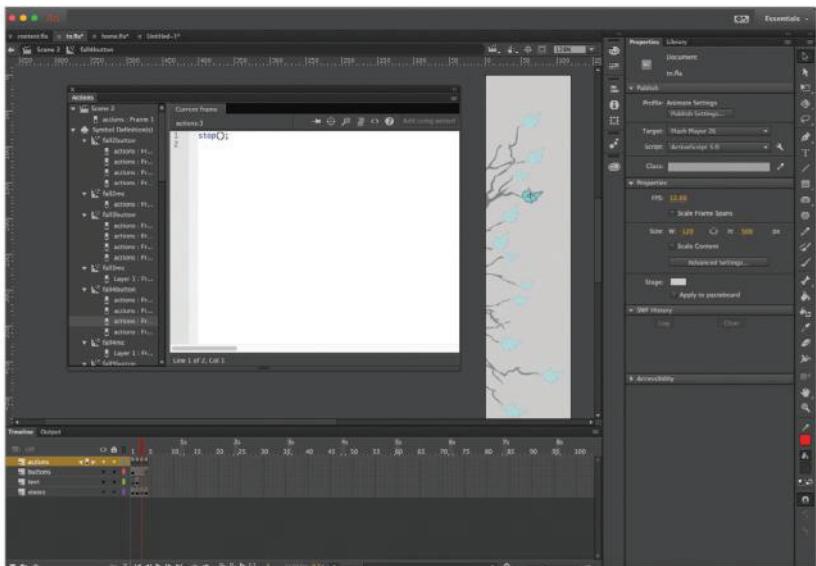


**Top** Many years ago I built my first website in 1999

**Above** The `2advanced.com` site heavily inspired me to learn Flash

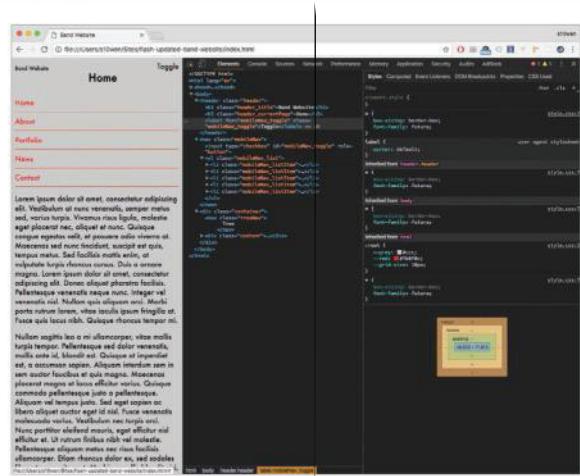
testing. The site was built in Flash, for Flash on a desktop computer with a mouse and keyboard. These days, mobile and tablet internet usage is more common than on a desktop computer, and this trend is continuing to rise.

In order to make this a better experience for whoever views the site, I'm going to take a few things into account at the start of the project and use a mobile first strategy. To do so, and again,



**Above** Flash tree navigation in Adobe Animate CC 2018

**Right** Mobile first, responsive navigation menu



► before writing any code, I'm going to get out a good old-fashioned pen and paper. First, I write out the sitemap; in doing so there are some key areas I think can be improved. For example, my original site consisted of different pages for each of the band's albums. At the time they had three albums and so fit nicely in the navigation. Now they have a lot more and potentially more to come, so already in my mind I'm thinking about ways in which to make the site more future proof (an oldie but a goodie is Dan Cederholm's *Bulletproof Web Design*).

Now I have a rough idea in my head of the sitemap and pages, next up is to create some low-fi wireframes. From previous experience building many responsive sites, mobile comes with interesting design challenges, namely how to create a navigation, but still enable people to view the main content of the site. I'm going to go along with the design outcome we've all grown to love/hate: the burger menu approach. However, I'm going to add a

little twist. The original artwork used birds, so rather than the standard burger menu icon, I'm going to use bird artwork that will activate the menu and open and close its wings as a way to indicate if the menu is active or not.

Things in my mind are now starting to take shape, with an idea of how people will be able to navigate around the site. I'm now going to think about how the pages themselves might look. Starting with the homepage, it's fairly simple, with typography content. Next, news – again typography content, potentially images and then some sort of navigation to view older posts. Gigs – a list of upcoming gigs with links to purchase tickets. For Media, looking back at the previous site, I had 'images' and 'videos' as two different sections, but here I think there's room for improvement and to consolidate as 'media'. Albums, ah, yes Albums – now this is where doing this sort of thing pays off. You see, the Albums page has typography and an image, and is going to need some sort of navigation to view older posts. Sound familiar? Sounds a lot like the same structure as the news page! Having this top level overview I can look at and think things over at a more granular, component, some could even say 'atomic' level, if you're familiar with the work of Brad Frost.

Now I have an idea of how the site is going to work on smaller devices and reusable elements, it's time to repeat the process with larger devices. As the site is fairly simple, and with the wireframes already created for mobile, I see the larger devices being fairly similar – apart from now we have some extra room, so we can widen the content areas and also include a side navigation.

The side navigation is the bit of the site that from the offset I'm most excited about. Taking inspiration from the band's original artwork, I built the navigation as a tree silhouette with leaves. Each leaf was a button that linked to a different page of the site. Also, as you scrolled in and hovered away from the leaf, the leaf would animate, falling to the ground. Flash was great at this; it was called tweening. You could set an element at one keyframe in the interface on the timeline, create another keyframe further along the timeline and add a path for the element to follow. Taking things a little further, varying the paths, duration and speed of the falling leaves, I ended up with something I was very pleased with.

But now we're not using Flash, so how do we do this? Quite often I'll jump to CodePen or JS Bin. For those of you who aren't aware, CodePen and JS Bin are online services that enable you to quickly code and save. I tend to see CodePen as more design led, and JS Bin more JavaScript focused. For this project

I'll be using CodePen to create the tree navigation for a few reasons. First, I want to start building up the main mobile version of the site, and in fact by doing this, if things were time critical, I could end up with an mvp. Although there are enhancements to the site that could be made by adding the nice leaf navigation and animation, this will take longer to produce. An advantage of working in CodePen for the tree navigation means it's isolated from the main site and code base. If things get tricky with completing it, I'm able to save where I'm at, carry on with the main site build, and then come back to the navigation. Sometimes I find that in going away from a problem, or even sleeping on it, my subconscious can carry on thinking about it. Then upon returning back to the problem, a solution presents itself.

SVGs! I love SVGs. Previously in Flash, I drew out the leaf assets in Illustrator. Amazingly I still had a working CD with the original artwork and was able to open it. These days I use Sketch and it did a great job of opening up the file. I now have the leaf assets all ready to be exported as SVGs. Why SVGs? There are a lot of reasons. If we were to use a jpg, or gif on a Retina device, we'd also have to supply bigger

## "Working in CodePen for navigation means it's isolated from the main site and code base"

assets, otherwise they would look blurred. Also, with SVGs, we can use CSS. This is great and lets us simply change the colour of the SVG using a bit of CSS rather than having to create another image asset. This means it's easier to maintain, and as a bonus it's also more performant. If you're not familiar with SVGs I'd highly recommend reading up on them and the incredible work from my good friend, Sara Soueidan.

With the tree and leaf assets now in place, the final thing to add is the animation. There are a few approaches I could take with this. One would be to stay true to the original Flash path tween I did. This would mean replicating the paths and using SVG and then potentially further SVG work with paths and animateMotion. I quite like this idea from a nostalgic point of view, but CSS has come on a lot over the years, and we now have transform and translate at our disposal, so this could be another approach. Taking things a step further, we could even add some JavaScript that would randomise the falling leaves. Both options sound good, but I'm swaying towards the more CSS-led route. Here's another benefit of



### FLASH

## HISTORY OF FLASH



Jonathon Gay plays with LEGO. He gets an Apple II Computer. He clones *Space Invaders* in Apple II Basic. At college he adds PostScript style drawing to SuperPaint II.

**1993:** FutureWave Software is born, leading on to the building of SmartSketch software.

**1995:** With talk about the internet and possibilities of the World Wide Web, SmartSketch introduces animation. SmartSketch becomes CelAnimator and then FutureSplash Animator and includes a variety of browser support.

**1996:** Disney uses FutureSplash. Disney work with Macromedia. Macromedia buys FutureWare, and FutureSplash Animator becomes Macromedia Flash 1.0.

**2000:** ActionScript is released with Flash 5.

**2004:** ActionScript 2.0 is released with Flash MX 2004.

**2005:** Adobe buys Macromedia.

**2007:** Steve Jobs announces the first iPhone. The iPhone does not support Flash.

**2008:** Adobe releases Adobe Flash CS4 and Adobe AIR.

**2010:** Steve Jobs writes 'Thoughts on Flash' post (<https://www.apple.com/hotnews/thoughts-on-flash/>).

**2014:** Adobe AIR is voted Best Mobile Application Development product.

**2015:** Google moves all its YouTube videos to HTML5.

**2016:** Adobe Flash becomes Adobe Animate.

**2017:** Adobe announces it will stop updating and distributing the Flash Player at the end of 2020. A petition is created to open source Flash and Shockwave (<https://github.com/pakastin/open-source-flash>).

**★ RESOURCES**

# RESOURCES AND FURTHER LEARNING

 This article wouldn't have been possible without the work of some awesome people. Here are some resources I'd recommend checking out.

## 2advanced.com

<https://web.archive.org/web/20040610062326/http://2advanced.com:80/flashindex.htm>

The work of 2advanced inspired me to learn Flash.

## Dotfiles

<https://github.com/mathiasbynens/dotfiles>

Mathias helped me get up and running with dotfiles.

## Bulletproof Web Design

<http://vault.simplebits.com/publications/bulletproof/>

An oldie but a goodie.

## Brad Frost

<http://atomicdesign.bradfrost.com/>

Learn about how to create effective pattern libraries.

## Sara Soueidan

<https://www.sarasoueidan.com/>

Sara is all sorts of awesome.

## Wes Bos

<http://wesbos.com/>

Wes Bos is coming to Manchester, UK, to talk at UpFront Conf.

## UpFront Conference

<http://upfrontconf.com/>

The conference I run. It would be great to see you there, 16th March 2018.

## McrFRED

<https://s10wen.com/blog/categories/mcrfred/>

The meetup I run, which runs every last Thursday of the month.

Again, it would be great to see you there.

## s10wen.com

<https://s10wen.com/>

My personal website. I've recently gone freelance and I'm on the lookout for new and exciting projects, so if there's something I can help with, please get in touch.

► using CodePen, I can quickly go and try out one approach. If it turns out that it's more complicated than I originally thought, or it doesn't feel right, I can try another approach with little time wasted. In fact this turned out to be a great idea! I'm still looking at options for this – please refer to the project on GitHub for the final result.

With the tree navigation now sorted, I turned back to the mobile first approach, building up the navigation. If you're familiar with Sass, you've more than likely encountered variables. But did you know variables are now available in CSS? They have pretty decent browser support in Chrome, Edge, Safari and Samsung Internet (<http://caniuse.com/#search=variables>) as well! As I'm trying to

**“To help grid alignment, white space, vertical rhythm, I've defined a grid size variable”**

keep to basic CSS and avoid the need for any extra dependencies, this is great news. So how would we implement this? At the top of the style sheet I declare my variables:

```
:root {
  --grey: #ccc;
  --red: #fb0f0c;
  --grid-size: 10px;
}
```

Now that they're declared, I can call them, so for example setting the body background colour would look like this:

```
body {
  background: var(--grey);
}
```

Taking this a step further and to help with grid alignment, white space, vertical rhythm, you may have noticed I've also defined a grid size variable. Variables work extremely well with calc and that looks a little something like this:

```
// Standard variable being used, outputs 10px.
padding-top: var(--grid-size);
```

```
// Adding calc to multiply the variable unit by 2, outputs 20px.
padding-bottom: calc(var(--grid-size) * 2);
```

With the mobile navigation styles complete, let's tackle the functionality for hiding and showing it. For the toggle button we'll apply a `label` tag, then in the `nav` tag we'll add an `input`:

```
<header class="header">
  <h1 class="header_title">Band Website</h1>
  <h2 class="header_currentPage">Home</h2>
  <label for="mobileNav_toggle" class="mobileNav_toggle">Toggle</label>
</header>

<nav class="mobileNav">
  <input type="checkbox" id="mobileNav_toggle"
    role="button">
  <ul class="mobileNav_list">
    <li class="mobileNav_listItem"><a class="mobileNav_listItemLink" href="#">Home</a></li>
    <li class="mobileNav_listItem"><a class="mobileNav_listItemLink" href="#">About</a></li>
    <li class="mobileNav_listItem"><a class="mobileNav_listItemLink" href="#">Portfolio</a></li>
    <li class="mobileNav_listItem"><a class="mobileNav_listItemLink" href="#">News</a></li>
    <li class="mobileNav_listItem"><a class="mobileNav_listItemLink" href="#">Contact</a></li>
  </ul>
</nav>
```

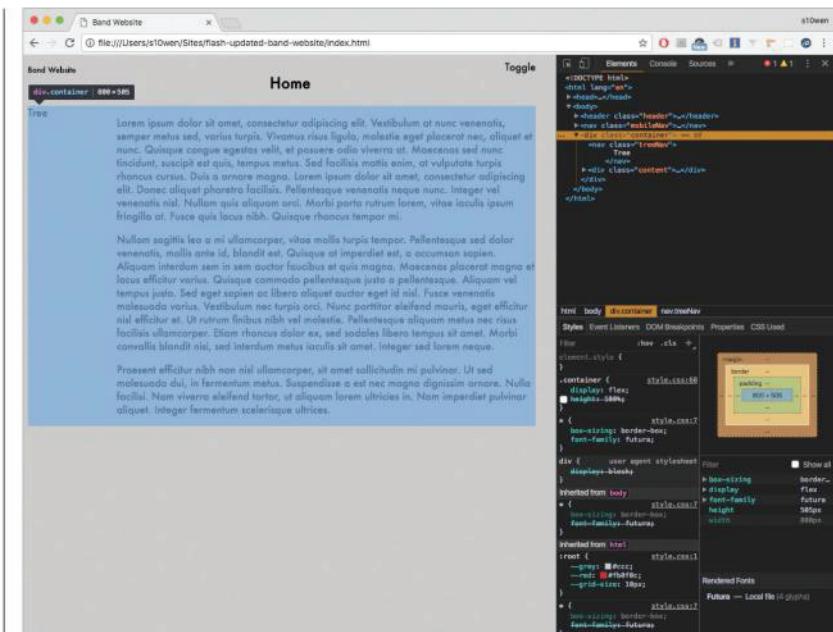
Using the following CSS, we can show and hide the navigation menu; because we want the label in the header, we can use `~` aka `tilde` or `(U+007E)` so it works while not being immediately succeeded by the first element.

```
#mobileNav_toggle[type=checkbox] {
  display: none;
}

#mobileNav_toggle[type=checkbox]:checked ~
.mobileNav_list {
  display: block;
}
```

With the mobile navigation complete, it's time to get responsive. Adding in the main content for the site, then using the Responsive View in Chrome Developer Tools, I'm able to increase the viewport width until I feel there's enough room to adequately hold the tree navigation. This ends up being at 600px, and for this we can use a media query:

```
.treeNav {
  display: none;
}
```



**Above** An example showing 'display: flex' preventing content from wrapping underneath the tree navigation

```
@media screen and (min-width : 600px) {
  .treeNav {
    display: block;
  }
}
```

Almost there! Finally for the tree navigation to sit next to the main content area, I'm going to make use of Flexbox:

```
.container {
  display: flex;
}

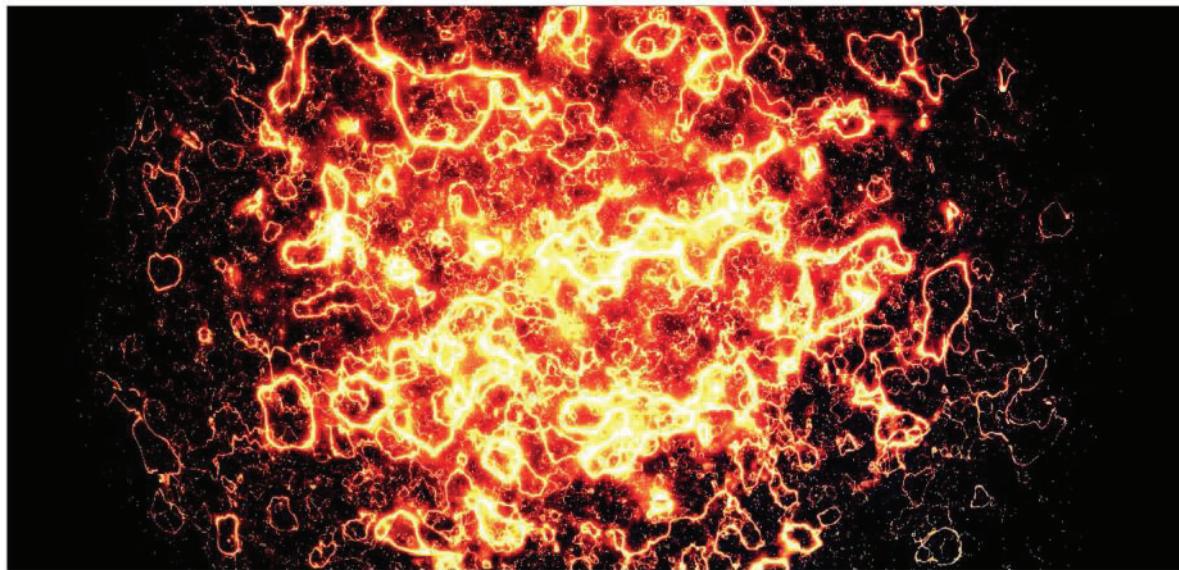
.treeNav {
  display: none;
  min-width: 140px;
}
```

Now the tree navigation takes up 100% height, with the content doing the same and sitting to the right of it. This means that no matter how long the content becomes, it will never flow underneath the tree navigation. If you'd like to know more about Flexbox, I'd recommend checking out <http://flexbox.io/> by the one and only Wes Bos. There's a lot it can do!

That's all I have time for at the moment, but there are still plenty of things we could do to make this project even better. If you have any questions, or liked the article, please say hello (<https://twitter.com/t10wen> or <http://t10wen.com>), or send me a pull request on GitHub!

**ABOUT THE AUTHOR****RICHARD MATTKA**w: <http://richardmattka.com>

t: @synergyseeker

job: Interactive director,  
designer and developerareas of expertise:  
Shaders, VFX, WebGL**\* GRAPHIC SHADERS**

# GET STARTED WITH GRAPHIC SHADERS

Richard Mattka introduces you to shaders and guides you through creating your own in this first tutorial in an ongoing series

**>** Graphic shaders are everywhere – on your phone, the web, the games you play and the movies you see. They create a virtually infinite range of effects: they're used as photo filters to alter lighting, colours, saturation and contrast; they can produce blur, blooms and bokeh effects; create depth effects with normal mapping and bump mapping; or chroma keying for blue-screen/green-screen effects for film. The applications are endless.

This is the first in a series of tutorials on graphic shaders, designed to get you started using shaders in your projects. The goal is to get you inspired so you can start creating as soon as possible.

## WHAT IS A GRAPHIC SHADER?

In the interest of time, this is going to be really brief. Shaders are a set of instructions that run on graphics hardware in the graphics pipeline. They are executed in parallel (in other words, at the same time) for every single pixel on the screen. This is the reason behind their speed, but also the main

reason it can be tricky to get your head around the code when starting. We're going to focus specifically on fragment shaders in these tutorials. They are responsible for setting the RGBA colour value for each pixel on the target screen or canvas.

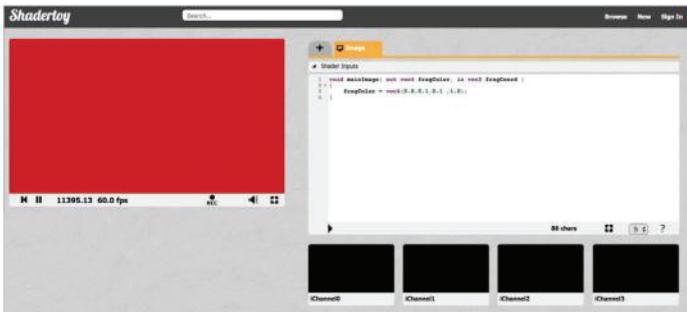
## OUR FIRST FRAGMENT SHADER

Okay, let's do this!

In order to see our shader executed, we need to render it. A quick method is to use a WebGL rendering tool, such as Shadertoy. It gives us a nice code window to practise in, and a render window to see our work.

- To get started, visit <https://www.shadertoy.com/> in a browser that supports WebGL.

- You'll see a sample shader all ready to go for you. However, we're going to delete it. We want to start from scratch so we can talk you through exactly what is going on.



Above Your first graphic shader. A hello world in GLSL. Simple, but it works!

- Type in this new code and press the black play icon at the bottom of the window. This will execute the shader code.

```
void mainImage( out vec4 fragColor, in vec2 fragCoord ) {
    fragColor = vec4(0.8,0.1,0.1,1.0);
}
```

You should now see a solid red colour filling the canvas. You've made and run your first shader! We know it's not very cool yet. It's actually really simple, but it works and it's a first step!

Let's break down what is happening.

First, we have a function called `mainImage`. It is the only function that is required. It defines one output and one input.

The only required output is called `fragColor`. The shader's sole job is to output this one variable. It does it for every single pixel, but essentially that is all a fragment shader does. `fragColor` is a `vector4 (vec4)`. This means it has four dimensions. In this case they are RGBA for red, green, blue and alpha. They range from 0.0 to 1.0. It's a lot like setting a colour in CSS using `color:rgba()`.

The only input is called `fragCoord`. It's a variable comprised of two parts (`vec2`), x and y. This tells the function which fragment (pixel) it is colouring. Recall this shader runs against each and every pixel. So, basically it says for pixel xy, colour it RGBA. For each `fragCoord`, colour it `fragColor`.

**Challenge:** Take a minute and play with the values. Make a deep blue, a mustard yellow, whatever you like. Run your code anytime by pressing the little, black play icon at the bottom of the code window.

## OUR SECOND SHADER – ADDING SOME LOGIC

Instead of colouring all the pixels the same, let's colour half of them and make use of that cool `fragCoord` input. To do this we need a little logic. Try this code out.

## ★ GRAPHIC SHADERS

# WHAT ARE GRAPHIC SHADERS?



A cool tunnel effect that was created in a fragment shader using audio uniforms

**+** GLSL (OpenGL Shading Language) shaders compile and run on a wide range of platforms. You can apply what you learn to any environment that uses OpenGL, OpenGL ES or WebGL. This means you can use this knowledge for websites, Three.js, iOS games, interactive installations, Unity, openFrameworks, Processing and many others.

Several shaders work together in what is called the graphics pipeline. Some are programmable, some are locked to the hardware. We're most interested in two shaders in the pipeline – vertex shaders and fragment shaders. These are the core of the OpenGL Shading Language and the WebGL graphics pipeline. We're going to focus on fragment shaders in these tutorials.

**What is a fragment shader?**

This shader, which is typically the last in the pipeline, instructs each fragment or pixel what colour it should be. It does this by setting a value for `fragColor` in the code's "main" function. It's where we'll create our photo filters, animations, effects and so much more, by manipulating the colours of the pixels.

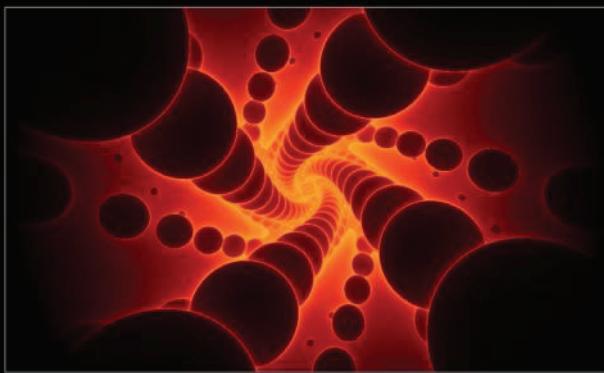
**Vertex shaders**

These handle the processing of individual vertices. They take a vertex as an input and return one as an output in a 1:1 mapping. Because we won't be diving into manipulation of 2D or 3D primitives or geometry, we don't need to do anything with these to get started. Just know that it is the first step in the pipeline, and for now is essentially giving us a canvas to colour.



## ★ EFFECTS

# MATHS & CODE



Shaders can be used to create amazing effects by combining mathematics and code

**Uniforms**

Please note that each render tool will have its own little nuances, such as built-in uniforms (variables) passed to the fragment shader for things like Time or Resolution. Shadertoy uses *iTime*, *iResolution* and *iMouse*, for example. These are super easy to port across other implementations such as Three.js, Unity or your own custom WebGL, as most are standard and have only slight variations in name.

**Normalized values**

Often in shaders we work with normalized values. This means they range from 0.0 to 1.0. They can be more precise (more digits past the decimal), but they have this range. RGBA values are normalized. We also typically use screen resolution and fragment position to create normalized uv or position values. For example:

```
vec2 uv = fragCoord.xy / iResolution.xy;
```

**Macros**

Fragment shaders can use preprocessor macros, which may be familiar if you know C. Macros are part of a pre-compilation step. It is possible to `#define` global variables and do some basic conditional operation (`#ifdef` and `#endif`). Macro commands begin with a hashtag (#). For example, you could add this to your code before the main function:

```
#ifdef GL_ES
precision mediump float;
#endif
```

You can define `lowp`, `mediump` or `highp` for the precision of float values (how many digits past the decimal). Lower precision means faster performance, higher means slower.

```
► `void mainImage( out vec4 fragColor, in vec2 fragCoord ) {
    vec2 uv = fragCoord.xy; // get current pixel xy
    uv.x = uv.x / iResolution.x; // divide by screen size to
    normalize
    uv.y = uv.y / iResolution.y; // divide by the screen size to
    normalize
    vec4 col = vec4(0.8,0.1,0.1 ,1.0); //red

    if(uv.y > 0.5){
        col = vec4(0.4, .3, .9,1.0); //blue
    }

    fragColor = col;
}`
```

You should see the top half of the canvas blue and the bottom red. Perfect!

So, what's going on here?

Before we get too far in the process, we should talk about Uniforms really quickly. We just used one in the code called *iResolution*. Uniforms work like little bridges between the CPU and the GPU. They are inputs that enable us to have changes across our shader. Things like time, mouse position, screen resolution are all good examples. Shadertoy uses *iTime*, *iResolution* and *iMouse*.

First, we get the *fragCoord* value, then normalize them by dividing by the screen *iResolution*. This means x is now 0 for the leftmost pixel, and 1 for the rightmost; y is 0 for the bottommost pixel, and 1 is for the top. This method makes it much easier to scale our work and know exactly where the centre is.

We used a variable to hold the colour and called it *col*. Then we simply check if the current fragment we are processing is greater than .5 (half) and change the colour to blue if it is. There are other ways to accomplish this effect, such as the *step* function, but using an *if* check is familiar to get started. We'll dive into the many GLSL built-in functions as we progress over the series.

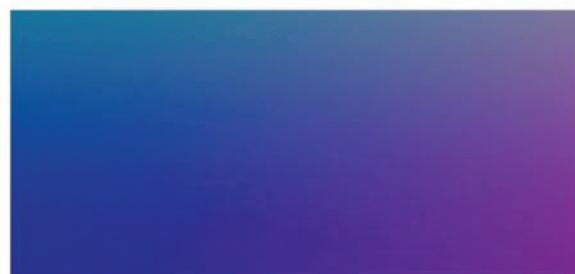
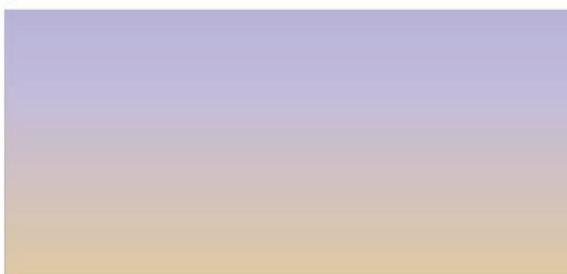
**Challenge:** Try altering the code to make the division of colour happen vertically instead by using *uv.x* instead of *uv.y*.

**OUR THIRD SHADER – GRADIENT FILL**

What if we decided we wanted this to transition as a gradient instead?

First we'll define two colours to use. We can use a *vec3* to hold the RGB values, and plug that into *fragColor* at the end. Let's use a sandy tone and a sky blue. We have a couple of shortcuts in the following code that we'll explain after you try it out.

```
`vec3 col1 = vec3(1.0,0.9,0.6);
```



**Top left** A simple shader, but useful. With just a little more logic, this could become a checkerboard or stripes pattern

**Bottom left** You should see a nice horizontal gradient going from blue down to a light, yellowish tan

**Top right** Gradient shaders make great performant skybox textures. I used one here in a Unity BB8 prototype I created

**Bottom right** Animated gradients are an excellent basis for more complex animations later on, and they also happen to make beautiful backgrounds

```
vec3 col2 = vec3(0.7,0.7,1.0);
void mainImage( out vec4 fragColor, in vec2 fragCoord ) {
    vec2 uv = fragCoord.xy / iResolution.xy;
    vec3 col = mix(col1, col2, uv.y);
    fragColor = vec4(col,1.0);
}
```

You should see a pretty gradient from tan to blue. We shortcut the normalizing steps from our second shader, down to one. Because `iResolution.xy` and `fragCoord.xy` are both 2D variables, we can make this shortcut. We will do this step in some form for almost every shader we create.

Next we removed the `if` check and replaced it with a built-in function called `mix`. It takes two values and mixes them based on the percentage given as a third value. We are mixing between colour 1 and colour 2 with a percentage that increases as the value of the `uv.y` increases (as we go up). Since we normalized the `uv` values, it mixes smoothly from 0.0 to 1.0. In other words, 100% colour 1 to 100% colour 2.

**Challenge:** Try making a night-sky gradient of blue and black. Try changing the orientation of the gradient, by using `uv.x` instead of `uv.y`. How about applying a little maths to the gradient. Try this out for line 8 instead:

```
vec3 col = mix(col1, col2, uv.y * uv.x );
```

Experiment and see what patterns you can come up with.

## THE FINAL SHADER – ANIMATION

Shaders can handle animation really well. So let's

wrap this first tutorial up with a basic animation of our gradients. To do this we need a `iTime` variable. Shadertoy exposes a Uniform called `iTime` for this. Try out this simple code:

```
void mainImage( out vec4 fragColor, in vec2 fragCoord )
{
    vec2 uv = fragCoord.xy / iResolution.xy;
    fragColor = vec4(uv*0.5,0.5+0.5*cos(iTime),1.0);
}
```

You should now see a beautiful gradient animating between a variety of colours. All with just a few lines. Nicely done!

In this example, we are using `uv.xy` as a 2D variable to handle the first two values of the `fragColor` (R and B), then we instruct the blue to change over time. We wrapped the `iTime` variable in a simple maths function for cosine. Sin and Cos are your best friends for quick animations; they neatly convert values into a range between -1 and 1. We'll explore these further in the next tutorial.

That's it! You are now the proud owner of a cool, animated, ambient colour shifting shader. You could put your new shader to work as a background for a splash screen or a web project, a game or whatever you might need. It's simple, but it's a start and doesn't cost any image file size or video. It's scalable and will look great on any device that supports WebGL or OpenGL/GLSL.

Have fun experimenting with this one. Next up we'll investigate how we get images into our shaders, as well as some awesome photo filters and effects that we can apply. ■

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★ STANDARDS

# GOOGLE CHROME VS WEB STANDARDS

**Brent Summers** looks at how Chrome went from defining standards to defying them

► I recently began a project with a client who had a new starter. The first thing the new hire did was open Safari to download Chrome, as the company uses G Suite, which runs best on Chrome.

In 2008, when Google released Chrome, much of the computing world used Windows XP, and Internet Explorer 7 was the most popular browser. Over the next few years, Chrome grew in popularity and eventually eclipsed all other browsers. Today, Chrome boasts 55 per cent of all browser traffic, according to StatCounter (<http://gs.statcounter.com/browser-market-share>). In my opinion, it was Chrome's developer tools and compliance with web standards that helped it become so influential.

The standards for an 'open web platform' are defined by the World Wide Web Consortium (W3C), whose members include Google, international companies, universities, nonprofits and NGOs. Through its involvement in the W3C, Google helped set the standards that define the modern web and accelerated innovation over the past decade.

Thanks to web standards, browser behaviour is more predictable, and developers are able to collaborate effectively. When one developer builds according to the standards, another developer can contribute with minimal knowledge transfer.

Google has helped drive standards, such as HTML5. Without Google's influence, we might still be using XHTML instead of HTML5, which was pioneered by the open-source Mozilla project. Lately, though, Google seems to be taking a cue from Microsoft circa IE6.

Google's own apps sometimes defy web standards, encouraging the user to adopt Chrome for the tools to work properly. It's not just G Suite – Google Hangouts, Inbox, AdWords 3, Google Earth, and even YouTube TV are designed to "work best with Chrome."

Support teams at leading companies have stated they prioritise support for Chrome. People are taking notice, too. John Gruber, creator of Markdown, said on Twitter: "There is so much Chrome-only stuff right now. If you think Google isn't building a proprietary Chrome platform, your head is in the sand."

When I asked an engineer about this, he told me about a breaking change that he discovered in Chrome v22. The bug he filed with Chromium was given a status of 'WontFix', and the project team referred him to a blog post that explained their stance.

According to the post [<http://developer.google.com/web/updates/2014/09/Tracing-Change-Coming-to-position-fixed-elements>], the change was intended to accelerate scrolling on mobile browsers. By the author's own admission: "There's not yet consensus over what to do."

This specific issue was discussed at a W3C meeting because Opera and Gecko had accelerated scrolling without requiring a change to the CSS spec. According to the official W3C meeting minutes [<http://www.w3.org/Archiwes/Public/www-style/201206/0115.html>], representatives from Microsoft, Adobe, Opera and three other representatives rejected the proposed change because it wasn't backward compatible.

It's been more than five years since my colleague filed that bug. The Chromium team still hasn't prioritised solving the issue in a standards-compliant manner, despite the fact it was addressed at a W3C meeting. Nevertheless, I'm hopeful the increasing pressure I've seen from media outlets and consumers will bring the Chrome team around to Google's core mission: "Organize the world's information and make it universally accessible and useful."

After all, shouldn't 'universally accessible' mean that I can use the browser I choose? ■

**PROFILE**  
Brent leads client services at Blink UX. He helps to design teams by collaborating with them to identify priorities, define strategies, and anticipate obstacles.



#### ABOUT THE AUTHOR

### DANIEL SCHWARZ

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**areas of expertise:**

Interface design, UX, design tools



\* ORIGAMI STUDIO

# PROTOTYPE INTERACTIONS WITH ORIGAMI STUDIO

Daniel Schwarz introduces you to Origami Studio, the macOS prototyping tool made by the talented guys at Facebook

**>** Origami Studio is a prototyping tool built and used by the design team at Facebook to explore, iterate and test ideas. It's best equipped for prototyping mobile apps, but it's also suitable for tablet, TV, watch and desktop apps, too.

It can handle anything from user flows to micro-interactions, but you'll need to first design any foundations using a design tool like Sketch. You can apply minor styles in Origami, such as colours, but designing an app from scratch is something of a challenge (it's the animation features that really make Origami Studio a mighty tool for designers). It's free, but limited to macOS users only.

Today we'll acquaint ourselves with Origami Studio as we learn how to create micro-interactions. We'll start by copying layers from Sketch to Origami, and then we'll create some semi-complex interactions while learning how Origami works.

Let's take a look.

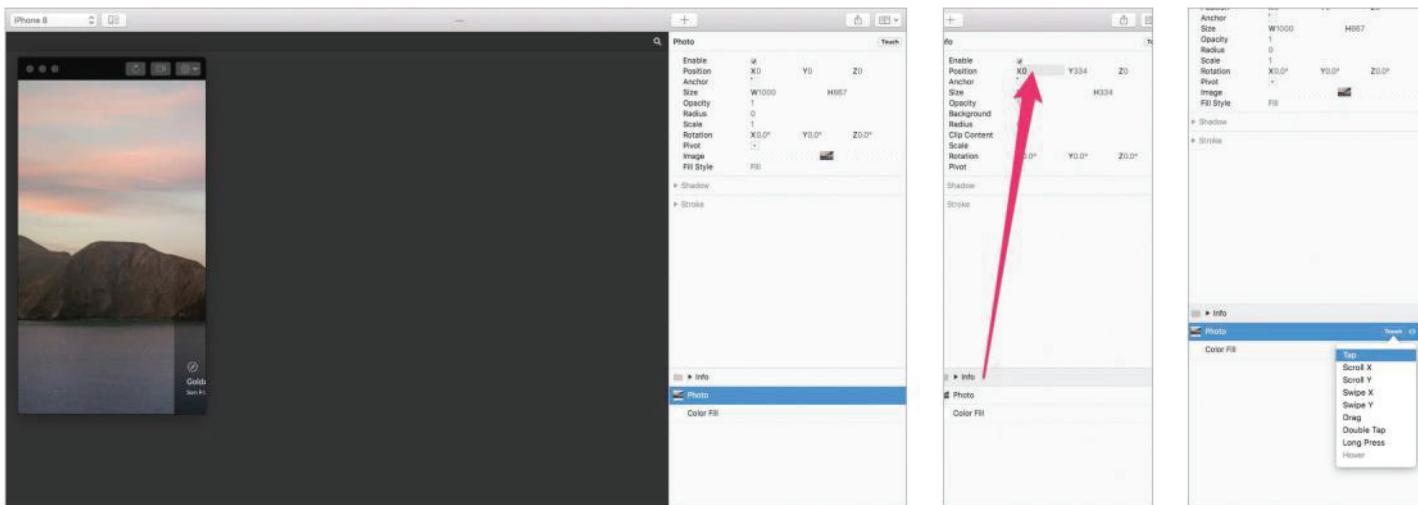
## COPY LAYERS FROM SKETCH

We'll start by copying layers from Sketch to Origami. Open Origami Studio, and choose iPhone 8. After that, copy the layers from your .sketch file into the Origami Studio Viewer (please note: that's the window that resembles your device, which in this case is an iPhone 8).

You don't have to copy every layer one-by-one; you can copy groups of layers, too. In fact, you can copy over all of the objects at once. Origami does a decent job of maintaining the object hierarchy, although some objects may appear misaligned.

## ALIGN OBJECTS

You can't align or style objects using the Viewer – the Viewer is for previewing only. Instead, you'll need to select the object that you want to edit (that is, the Info group) from the Layer Inspector on the right-hand side, and edit the values of the styles (also



## "Patches appear in the Patch Editor and present information about the interaction in real time"

using the Layer Inspector). Specifically, you'll need to change the value of the X property; this will need to be 0 in order for it to be aligned to the left.

Alternatively, you can use the Anchor property to fix objects to a side or corner (think responsive design, but for apps). You might find it useful to completely centre the image layer.

Now in case you were wondering, the Viewer is used as a live preview (you'll be able to interact with it once there are some animations defined), so don't worry, there's a reason that we can't directly manipulate objects on the canvas.

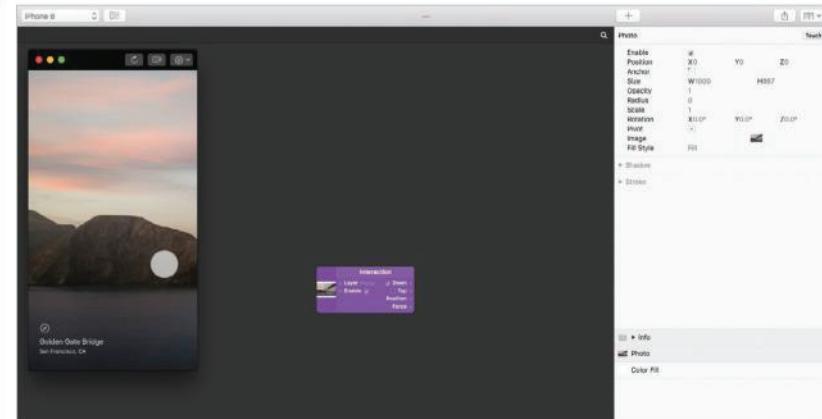
### ADD INTERACTIONS

Now let's add our first touch interaction. What gesture is required for the interaction to trigger?

We want the image to enlarge when the user taps it, so select the image using the Layer Inspector and click the Touch button that appears. Choose Tap from the list of options.

What you see on the screen right now is called a Patch. Patches appear in the Patch Editor and present information about the interaction in real time. For example, when you click on the image from the Viewer, the Down output will be activated, but when you release your click, the Tap output will be activated instead.

Note that the Force output corresponds with the amount of force applied on devices with Force Touch



hardware. As you can see, Origami helps you to demonstrate very detailed interactions!

Speaking of interactions, let's make one...

### DEFINE THE TRANSITIONED STATE

Next, you'll want to define the result of the interaction (that is, what will the transitioned state look like?). In this case, you'll want the tap gesture to enlarge the image.

For this to happen, you'll need to add a Transition Patch. Double-click on the Patch Editor (or use the keyboard shortcut Cmd+enter), then begin to type Transition into the search field. This search field is like the macOS Spotlight, but for Origami Studio. Click Place Patch.

From the Transition Patch, make the Start and End values 0.38 and 1 respectively. Next, click-hold Down and drag the connecting line over to Progress. What we've done here is tell Origami that when the tap is initiated, the image scale will transition from 0.38 to 1 (that is, it will get bigger).

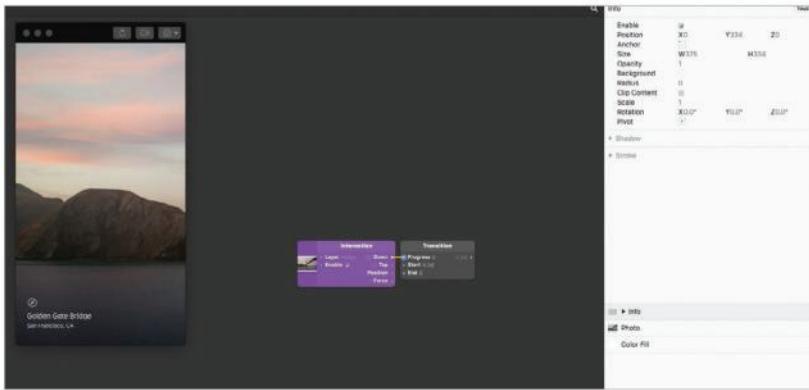
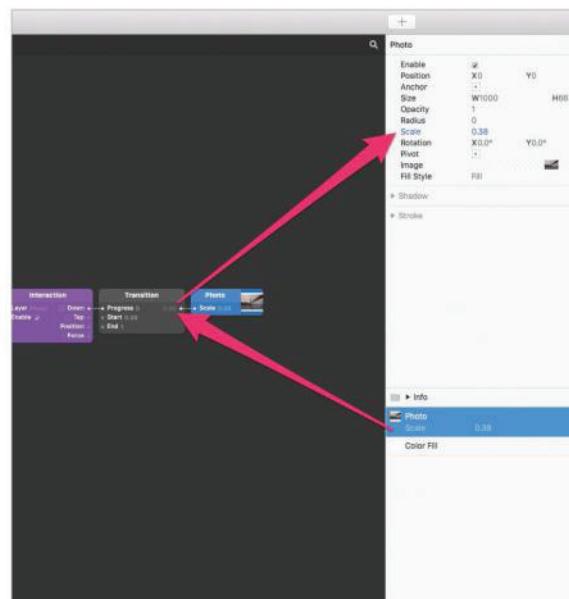
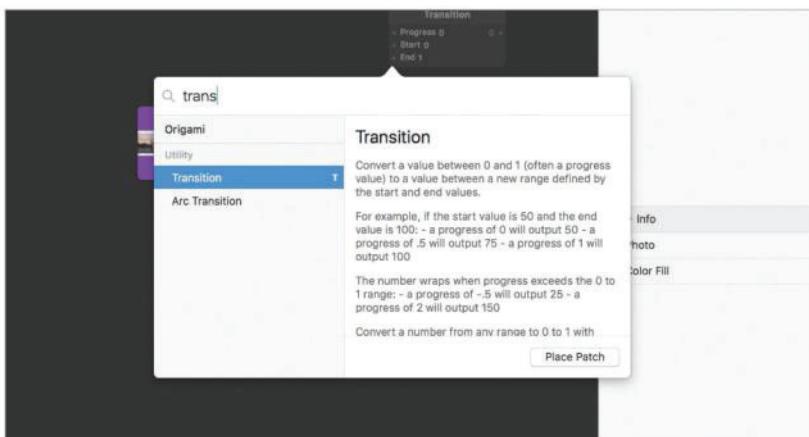
That being said, we haven't actually linked this transition to the Scale property yet, so let's do that ►

**Top left** Copy layers from Sketch to Origami with Cmd+C and Cmd+V

**Top middle** Align layers using the Layer Inspector's X, Y and Anchor properties

**Top right** Create touch interactions using taps, swipes, drags, hovers and long presses

**Above** Create an Interaction Patch with Cmd+enter and typing 'Interaction Patch'



**Top left** Create a Transition Patch with Cmd+enter and typing "Transition Patch"

**Top right** Define a transition state by linking the Transition Patch to a property

**Bottom left** You can create a transition state by linking the Interaction Patch to the Transition Patch

▶ now. Connect the 0.38 value to the Scale property found in the Layer Inspector. Ensure that you have the image layer selected (this is very important), because we don't want to accidentally alter the scale of the text layers.

Now that you've altered the scale of the image and you can see the white background behind it, you might want to switch to the Color Fill layer (this is the background of the app screen) and change the Color property to Black. You'll find this in the Color Palette section of the Color Picker.

### ANIMATE THE INTERACTION

You now have your before and after states, but so the user can identify when something has happened on the screen (sudden movements can easily go unnoticed), you'll want to define a transitional effect to ease the user into the transitioned state at a natural speed (quick, so the user knows it happened, but not so quick that it goes unnoticed).

Double-click on the Patch Editor again (or Cmd+enter), and search for Pop Animation. You can also tap A on the keyboard to quickly insert a Pop Animation – it's much faster.

Make sure that this Pop Animation appears between the Interaction and the Transition. Connect

**"Define a transitional effect to ease the user into the transitioned state at a natural speed"**

the Down output of the Interaction to the Number input of the Pop Animation, and the Progress output of the Pop Animation to the Progress input of the Transition. Now the image will animate to its transitioned state (click down on the Viewer to see).

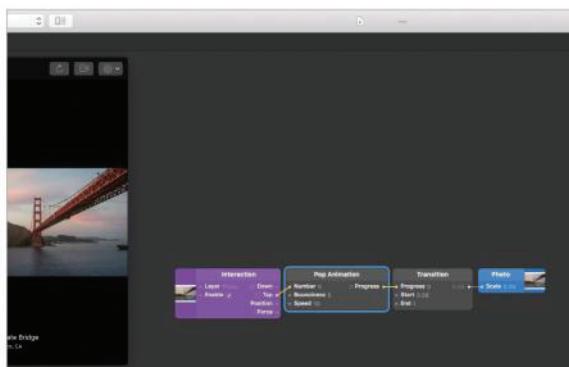
All seems well and good, but there is a problem – we have to keep our finger on the image for this to happen. What we actually want is for the interaction to occur when the user taps, not holds their mouse/finger down.

Therefore, make the connection between Tap and Number instead. Next, test the animation.

You might have noticed that the animation now begins, but reverses as soon as you release your hold (d'oh!). What the animation needs is some kind of switch functionality, where you can switch to the transitioned state and back with ease.

### SWITCHING BETWEEN STATES

Double-click/Cmd+enter on the Patch Editor, but this time choose the Switch option. Insert the Switch Patch between the Interaction and the Pop Animation. Connect the Tap output of the Interaction to the Flip input of the Switch, and the On/Off output of the Switch to the Number input of the Pop Animation. The tap will now trigger a switch flip.



You need to test the animation again. This time around, you should notice that a tap now switches to the transitioned state and will remain that way until you decide to turn off the switch again by repeating the interaction.

Congratulations are in order – you have just demonstrated an interaction!

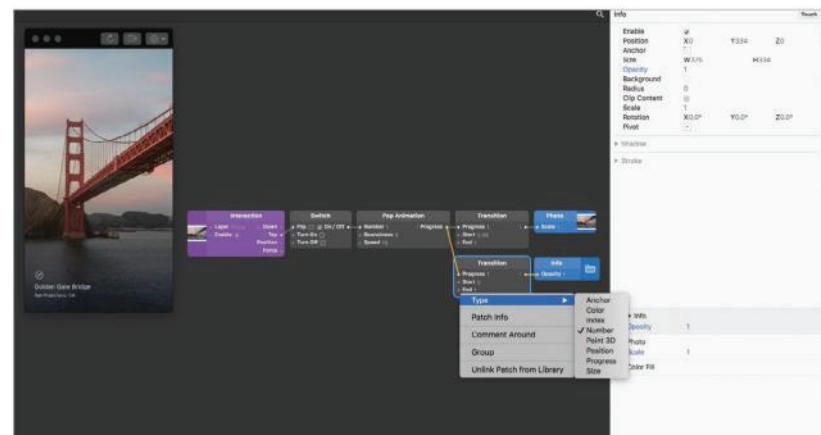
## WHAT NOW? WHAT ELSE?

As you may have noticed, Origami Studio is able to accomplish interactions that are more complex than the average prototyping tool (you can even test these interactions on real devices, as you'll see a little bit later on). Where the likes of the InVision app and Marvel app are focused more on user flows and dynamic elements, they're somewhat lacking when it comes to animation. From here, with Origami Studio, we can add not only more interactions, but more animations to those interactions. This effectively means that a single interaction could trigger a series of animations.

## MAKE COMPLEX ANIMATIONS

All you need to do is add more Transition Patches to the Patch Editor, and then define the output styles for that transition.

If you right-click on the Transition Patch, you'll even be able to change the transition Type. By changing the Type, your Start and End values can represent something other than a number – they can represent a Position, a Color, or whatever.



**Top left** You can ease the user into the transitioned state by adding a Pop Animation Patch

**Bottom left** Create a Switch Patch so the user can easily flip back and forth between the transition

**Above** Right-click on a Transition Patch to change the Type of transition

## PREVIEWING/MIRRORING

Even though we've been using the Viewer up until now, you can also preview your interactions on a real device. After all, app interactions are designed to be used by thumbs, so we should be testing our interactions with thumbs if we are to create intuitive user experiences. Right next to the device type in the top-left corner (which is iPhone 8 in this example), click the preview icon/button after attaching your device via USB. You'll need to make sure you have the Origami Live app on either iOS or Android (whichever is relevant).

Now you can spend some time testing your interactions in a real environment!

## RECORDING

You might find that you want to record your interactions for stakeholders, clients and other members of your team.

Hit the Record Prototype button from the Viewer to begin recording, and for some extra flavouring, select 'iPhone 8 Device and Screen' from the drop-down box to have the recording awesomely contained within the device frame.

**Tip:** use Cmd+Alt+arrows to tilt the device orientation into landscape, and use Cmd+H to toggle diverse device hands on and off.

Want to know more about Facebook Origami? Read the official documentation to learn about user flows, the types of device hardware that you can take advantage of, advanced interactions, designing directly in Origami, maths, logic, loops and more.

Considering that Principle is available for a one-time fee of \$129, and Framer Studio is available from \$15/month, Facebook's free Origami Studio offers a generous amount of features. ■



#### ABOUT THE AUTHOR

##### SIMON JONES

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job: Software engineering director

###### areas of expertise:

JavaScript, front-end frameworks, emerging technology



\* SOCKET.IO

# COMMUNICATE IN REAL TIME WITH SOCKET.IO

From chat apps to multiplayer games, WebSockets enable efficient, real-time data exchange, and the Socket.IO library makes it easy to get started

 Most typical experiences on the web are client-driven. The client requests a page or performs an action, and the server responds. This is fine most of the time, but it relies on the client to know when something needs to happen. For some use cases, you need the server to provide information as soon as it's available, or even a two-way exchange of information in real time. Chat apps are a great example of this: imagine if you needed to refresh the page to check if a new message has been received.

WebSockets are one solution, and provide bi-directional communication between a client and server in real time. Use cases for this go beyond live chat. Streaming information in real time is one use case (think social updates, weather, stock prices and more). Multiplayer gaming possibilities emerge due to the ability to exchange data between clients with very low latency. In this tutorial, we'll build a simple page that tracks the live price of Bitcoin (which varies in real time as orders are placed 24/7).

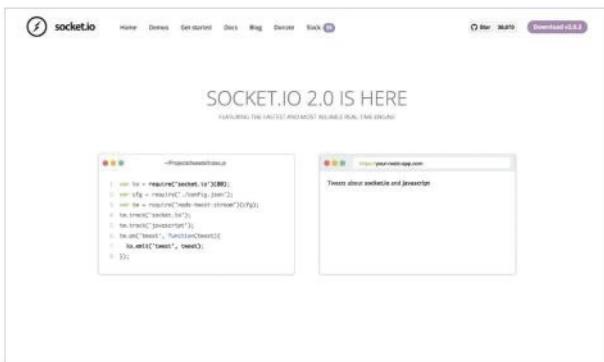
Our app will consist of two parts. First, we need a web server to retrieve live price data from the

Blockchain API (<http://blockchain.info/api>). For simplicity we'll poll the API at an interval, but we could implement a real-time solution end-to-end. We'll use Node.js for the server (<http://nodejs.org/en/>). The second part is a client page that receives price data from the server via a socket connection. The socket connection will be established using Socket.IO (<http://socket.io/>), which greatly simplifies the use of WebSockets, and offers both server and client libraries.

If you don't have npm (Node Package Manager) installed, pick it up at [npmjs.com](http://npmjs.com). Create a new directory for the project, go to it, and run `npm init`.

```
mkdir socket-demo
cd socket-demo
npm init
```

Enter the information that npm asks you for, and enter `server.js` as your entry point when prompted. Npm will create a `package.json` file for your project, which is the foundation of a Node project and tells



**Fallback plan:** We'll use Socket.IO to handle our WebSocket connection, which provides a layer of abstraction and fallback if WebSockets are unsupported

it the packages you depend on. The entry point we provided specifies a JavaScript file to execute when the server is stood up.

Now we need to install a couple of dependencies: Socket.IO and Request ([npmjs.com/package/request](http://npmjs.com/package/request)), which we'll use later for HTTP requests to the API.

```
npm install socket.io
npm install request
```

Time to get to work creating and modifying server.js as follows:

```
var http = require("http");
var url = require('url');
var fs = require('fs');
var httpRequest = require('request');
var server = http.createServer(function(request, response) {
  var path = url.parse(request.url).pathname;
  switch(path) {
    case '/':
      response.writeHead(200, {'Content-Type': 'text/html'});
      response.write('The server is working!');
      response.end();
      break;
    default:
      response.writeHead(200, {'Content-Type': 'text/html'});
      response.write('Error - page not found.');
      response.end();
  }
});
server.listen(8000);
```

Here we're telling Node to create a new HTTP server using its http module. Requests to this server trigger the enclosed function, which we can use to examine the URL path and determine the content to serve. At the moment we just respond with a static string. What we've built here is a 'router' that takes a URL

The screenshot shows a page titled 'ALTERNATIVES TO SOCKET.IO'. At the top right is a '★ ALTERNATIVES' button. The main title 'ALTERNATIVES TO SOCKET.IO' is in large, bold, white letters. Below the title is a screenshot of a web browser displaying the 'WebRTC' project page. The page has a green header bar and a white content area with text about WebRTC's mission and supported platforms. It also features a 'Supported Browsers & Platforms' section with icons for Chrome, Firefox, Opera, Android, and iOS.

**+** There are alternative ways of implementing true, real-time communications on the web these days. WebSockets are essentially a protocol that can be implemented on a web server using a variety of libraries. Technically Socket.IO itself is not a pure WebSocket library, but rather a custom protocol that will use WebSockets if they are available. It also provides fallback support if they are not, using older methods, such as AJAX long polling. Its underlying WebSocket implementation is pWebSockets (<https://github.com/uNetworking/uWebSockets>).

Alternative WebSocket implementations are also available for Node.js, as well as for other web servers, so whether you're using JavaScript, Java or another language server-side, you can take advantage of them. If you're sticking with Node, then ws (<https://github.com/websockets/ws>) is another popular implementation.

WebSockets themselves are also only one of a number of tools in your arsenal for real-time communication on the web. Push API is one alternative. Where WebSockets offer two-way communication, the Push API enables messages to be pushed from server to client. However, it has the advantages of being integrated with service workers, which means its messages can be received and processed even when the user is not looking at the page.

WebRTC (Web Real Time Communications) is another standard that is focused around the streaming of audio, video and data. WebRTC can establish peer-to-peer connections directly between clients, whereas WebSockets require messages to be exchanged between client and server.



\* RESOURCES

# WEB SOCKETS

**+** We've only scratched the surface of what WebSockets and Socket.IO can do. Fortunately, they've been around for a while and are well supported, so there's a wealth of information available online to help you.

#### socket.io documentation

<https://socket.io/docs/emit-cheatsheet/>

Socket.IO has documentation and examples on its site. Of particular use is the 'emit cheatsheet', which gives you a quick rundown of how to gain more control over what happens when you emit messages.

#### Mozilla Developer Network

[https://developer.mozilla.org/en-US/docs/Web/API/WebSockets\\_API](https://developer.mozilla.org/en-US/docs/Web/API/WebSockets_API)  
MDN is always a good port of call for web technologies, and its section on WebSockets includes tutorials on working with them in various languages, as well as a list of alternative implementations to look at.

#### When to use an HTTP call instead of a WebSocket

<https://blogs.windows.com/buildingapps/2016/03/14/when-to-use-a-http-call-instead-of-a-websocket-or-http-2-0/>

If you're wondering whether WebSockets are the right solution for your needs, this article gives a good overview of what to take into account when deciding whether you need them or if you'll be better off with a regular HTTP call.

#### Deep dive into WebSockets and HTTP/2 with SSE

<https://blog.sessionstack.com/how-javascript-works-deep-dive-into-websockets-and-http-2-with-sse-how-to-pick-the-right-path-584e6b8e3bf7>

If you're interested in more detail, this article has some great information on how WebSockets work, plus how they compare with HTTP/2 and Server Sent Events.



**Further info** Help is at hand if you're not sure whether you need WebSockets

► and then determines the page content to serve. If you now run:

npm start

...you can visit `http://localhost:8000` and should find the browser displays "The server is working!". As we make modifications, you may occasionally need to terminate the server and restart to see your changes.

Next, we'll have the router render an HTML page instead of text:

```
case '/':
  fs.readFile(__dirname + '/index.html', function(error,
  data){
    if (error){
      response.writeHead(404);
      response.write('Error - page not found.');
      response.end();
    }
    else{
      response.writeHead(200, {'Content-Type': 'text/
      html'});
      response.write(data, 'utf8');
      response.end();
    }
  });
  break;
```

We'll go ahead and create a simple index.html page to serve:

```
<!doctype html>
<html>
<head>
<title>Bitcoin Real Time Price</title>
</head>
<body>
<div id="tracker">
<h1>Bitcoin Price Tracker</h1>
<button id="btn" onclick='connectSocket()'>Connect</
button>
<p>The latest buy price of bitcoin is: </p>
<div id='price'>-</div>
</div>
</body>
</html>
```

Try it out again and you should find you are serving this page. Style it if you like.

We're now ready to introduce Socket.IO to our server. In server.js, add:

```
var io = require('socket.io').listen(server);
```

This will need to go below your `server.listen(8000)` instruction. That's all it takes to set up Socket.IO to run on a server. We now have a basic Node.js HTTP server that also listens for socket connections (but doesn't do anything with them yet).

Next we need to modify our client (`index.html`) to connect to the server. To do this, we need the Socket.IO client library. This is already being served by our HTTP server since it was installed by npm with the Socket.IO package, so we can go ahead and include it in our client code:

```
<script src="/socket.io/socket.io.js"></script>
```

The Socket.IO client library exposes an `io` object that you can use to connect. Our button is expecting to call a `connectSocket` function, so let's define one:

```
<script>
  function connectSocket() {
    console.log('Opening socket connection.');
    var socket = io.connect();
  }
</script>
```

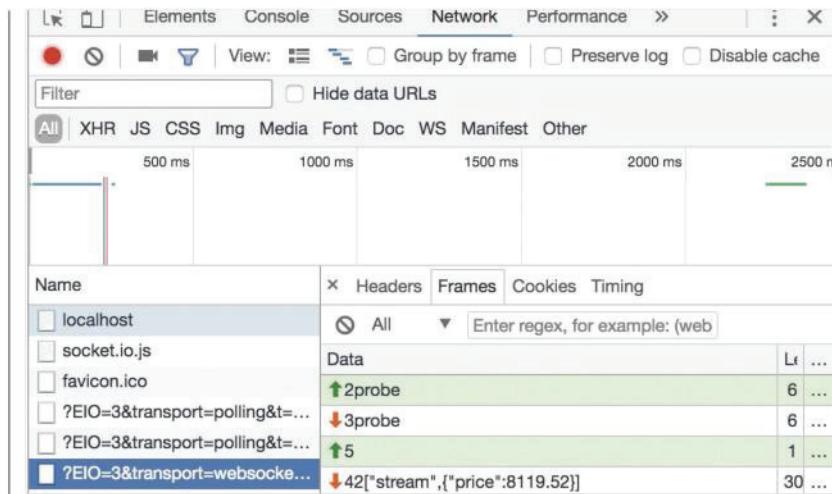
It'd be nice to be able to confirm the client connected when this button is clicked. The server-side `io` object will receive `connection` events you can react to:

```
io.on('connection', function(socket){
  console.log('Client connected.');
});
```

If you fire up your page now, you'll find that clicking the button causes a 'Client connected' message to be logged in your server console window (the one running Node.js). In the browser console window, you'll find your client side logging, which should say 'Opening socket connection'.

We can extend `function(socket)` to do something more interesting when a connection is established:

```
var priceURL = 'https://blockchain.info/ticker';
var price = 0;
io.on('connection', function(socket){
  console.log('Client connected.');
  setInterval(function(){
    httpRequest(priceURL, function (error, response, body) {
      try {
        price = JSON.parse(body).GBP.buy;
      } catch (e) {
        console.log("Couldn't get price from API.");
      }
    });
  });
});
```



**Message details** You can use the Network tab of Chrome DevTools to examine WebSocket traffic on a page. If you select the socket connection and view Frames, you'll see details of all messages

We're now running a function at an interval of 1000ms (1 second), which accesses the blockchain.info API, parses its JSON structure (you can see this structure by visiting the URL directly in your browser), and extracts the price property.

We then have Socket.IO 'emit' the price, which means it is sent to clients. Our implementation sends it to all connected clients, but there are ways to refine the emit function for more control.

All that remains is to extend our client-side `connectSocket()` function to define some behaviour when an event is received from the server. We do this by responding to `stream` events.

```
function connectSocket() {
  console.log('Opening socket connection.');
  socket = io.connect();

  socket.on('stream', function(data){
    console.log('Received message: ' + data.price);
    document.getElementById('price').innerHTML =
    '&#163;' + data.price.toLocaleString();
  });
}
```

This uses the data from the server to update the price on the page. If you test it out in the browser, you'll find that upon pressing Connect, the page begins streaming price data from the server. Notice how you don't have to do anything here, and the page does not refresh. Updates are driven by the server as your socket emits data.

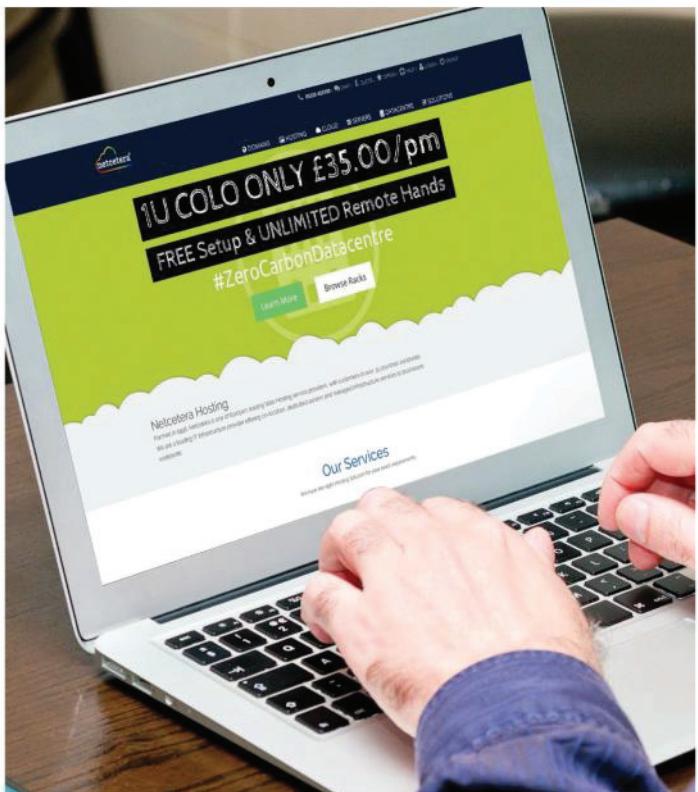
Congratulations! You've built your first real-time app with WebSockets. ■

# HOSTING PARTNERS

Key hosting directory

\*CONTACT US To advertise here, contact our sales team: +44 01225 687 832 [christopher.mitchell@futurenet.com](mailto:christopher.mitchell@futurenet.com)

## FEATURED HOST



"We have several servers from Netcetera and the network connectivity is top-notch – great uptime and speed is never an issue. We would highly recommend Netcetera"

Suryan

\* EXPERT TIP

### CLOUD TECH TIP...

If you're going to fully utilise cloud technology, before deciding on a service provider, ask whether monitoring comes as standard and whether management is included in the price. A fully managed cloud can make your business fly; an underutilised cloud will be a waste of money.



Netcetera provides hosting from one of the most energy-efficient datacentres in Europe, all powered by green energy. It offers everything from reliable low-cost hosting for a single site right through to complex cloud racks and managed IT solutions. One of its most popular products is its Managed Cloud, designed to help SMBs get the most from their website, on their own cloud server. Server monitoring comes as standard for Netcetera's Cloud and Dedicated server clients – something it believes should be included in the price of the hosting it provides.

Offering reliable website hosting, dedicated servers, colocation and cloud solutions, Netcetera has a large portfolio of green, zero-carbon solutions for businesses of all sizes. Customers can choose from its fully managed cloud servers, Linux and Windows for SMBs and a fully managed cloud solution for WordPress websites, to help them fully utilise cloud technology without any hassle. And with server monitoring as standard and a full migration service available, Netcetera has made the switch to better hosting really easy.

### CONTACT

03330 439780 / [SALES@NETCETERA.CO.UK](mailto:SALES@NETCETERA.CO.UK)

**WWW.NETCETERA.CO.UK**

### WHAT NETCETERA OFFERS

- **Managed hosting:** A full range of solutions for a cost-effective, reliable, secure host
- **Dedicated servers:** Single server through to a full rack, with free set up and a generous bandwidth
- **Cloud hosting:** Linux, Windows, hybrid and private cloud solutions with support and scalability features
- **Data centre co-location:** From quad-core up to smart servers with quick set up, and all fully customisable

## 1&1 INTERNET

1&1 Internet is a leading hosting provider that enables businesses, developers and IT professionals to succeed online. With a comprehensive range of high-performance and affordable internet products, 1&1 offers everything from simple domain registration to advanced eCommerce packages.

0333 336 5509

[WWW.1AND1.CO.UK](http://WWW.1AND1.CO.UK)



The screenshot shows a secure connection with SSL included. It features a blue header with the text "SAFEST OF THE SAFE!" and a yellow sidebar with a list of security features:

- ✓ SSL Certificate included
- ✓ Certified data centres
- ✓ Geo-redundancy
- ✓ DDoS protection

Below the sidebar is a button labeled "Check". At the bottom left, there's a placeholder "Enter your ideal web address" and at the bottom right, a green "GO" button.

## TIDYHOSTS

Tidyhosts boasts a feature-rich selection of services from shared web hosting, WordPress hosting, hosted exchange, virtual servers and streaming. Tidyhosts' passion and drive has gained it a highly reliable and trusted reputation from its customers, making it the number one choice for hosting services.

0560 367 4610

[WWW.TIDYHOSTS.COM](http://WWW.TIDYHOSTS.COM)



The screenshot shows the "HOSTED EXCHANGE" section of the tidyhosts website. It features a large image of a laptop displaying an email inbox. Below the image, there are several bullet points about the service:

- ✓ Up to 10 GB storage
- ✓ Unlimited Domains
- ✓ Wild Domain Routing
- ✓ Control Panel
- ✓ Instant POP3/IMAP
- ✓ Anti-Spam
- ✓ Instant Push Email
- ✓ 30 Day Money Back Guarantee

At the bottom left is a "GET STARTED NOW" button, and at the bottom right is a "GO" button.

## HEART INTERNET

As one of the UK's leading web hosting authorities, Heart Internet focuses on designers, developers and technically adept businesses. It builds on its four tenets – speed, reliability, support and security – to create award-winning solutions for over 500,000 customers.

+44 (0) 330 660 0255

[WWW.HEARTINTERNET.UK](http://WWW.HEARTINTERNET.UK)



The screenshot shows the Heart Internet homepage. At the top, there's a search bar with the placeholder "Search for a moment" and a "LOG IN" button. Below the search bar is a navigation menu with links to "Domain Names", "Web Hosting", "Reseller Hosting", "Servers", "Marketing Tools", and "More". The main content area features a large image of two people working on computers, with the text "Your websites deserve great web hosting".

## THENAMES

TheNames.co.uk offers great value cPanel web hosting, SSL certificates, business email, WordPress hosting, Cloud, VPS and dedicated servers. Part of a hosting brand that started in 1999, it is well established, UK based, independent and its mission is simple: ensure your web presence "just works".

0370 321 2027  
[WWW.THENAMES.CO.UK](http://WWW.THENAMES.CO.UK)



The screenshot shows the TheNames website. At the top, there's a navigation bar with links to "HOME", "DOMAINS", "WEBSITES", "HOSTING", "CLOUD", "EMAIL", "SECURITY", and "COMBO OFFERS". Below the navigation is a section titled "Get your Domain Name" with the sub-instruction "Create your Online Identity in Moments". There's a text input field for "YourWebsite.co.uk" and a green "GO" button.

## CATALYST2

As one of the UK's most experienced hosting companies, Catalyst2 has built a stable, reliable and well-supported hosting platform for organisations across the UK. Catalyst2 specialises in very high-availability hosting and exceptional customer support. Contact the team today for a quote.

0800 107 7979  
[SALES@CATALYST2.COM](mailto:SALES@CATALYST2.COM)



The screenshot shows the catalyst2 website. At the top, there's a navigation bar with links to "Home", "Web Hosting", "Dedicated Servers", "Email Hosting", "About Us", "Support", and "Login". Below the navigation is a large image of a laptop with three "Z" symbols on its screen. A call-to-action button "GET IN TOUCH!" is visible.

## ADVERTISE HERE!

Would you like to promote your hosting business and services to our audience of professional web designers and developers? If so, please call or email Chris as below.

## REASONS TO ADVERTISE

- **Reach professionals:** 75 per cent of readers are working in or seeking work in the web industry
- **Variety of projects:** Future projects include mobile apps, web apps and CMS-driven sites
- **Home workers:** 51 per cent have a personal website under development

## CONTACT

+44 01225 687 832 / [CHRIS.MITCHELL@FUTURENET.COM](mailto:CHRIS.MITCHELL@FUTURENET.COM)



\* ACCESSIBILITY

# BEING A FREELANCER WITH A CHRONIC ILLNESS

**Katherine Cory** reveals how suffering from Chronic Fatigue Syndrome (ME) has forced her to adapt in order to stay in business

**>** In 2013 I felt I had the world at my feet; my freelancing was going well, I was beginning a speaking career, and loved attending all the meetups and conferences.

You wouldn't have known I was ill because it was quite easy to hide as I'd recovered to 80 to 90 per cent of 'normal' health. However, I was dangerously caught up in the lifestyle of working in tech; I didn't think twice if I had to work every evening and weekend – this felt like a badge of honour. The warning signs were there but I ignored them until I burnt out, battled depression and then relapsed.

Five years on, everything has changed and it's no longer possible to hide my illness; I regularly use a wheelchair and on days I'm able to leave the house on my own, I have to use a walking stick. I can't remember the last time I made it to a conference, and my business is basically run from either my bed or the sofa.

I've had to learn how to be sick while freelancing; I'm much more conscientious and I now no longer take on project after project; I make sure I give myself a couple of days breathing room after each

project. I've found I'm more productive working five hours every weekday rather than eight to nine hours for two weeks and then completely crashing for the next two weeks.

I limit my distractions; before my relapse, I'd sit at a computer for ten hours a day, yet I'd only achieve seven billable hours. Now, if I'm at a computer five hours a day, I make sure I'm working five hours. I try and avoid stressful projects, and I never avoid tasks on my to-do list because I never know how my health will be the next day.

It's very rare if I work an evening or a weekend but if I do, I make sure I have time off in lieu to recharge my batteries. I limit my screen time too; I finish work by 7pm and switch off my laptop at 9pm, and I don't touch my phone after 10pm.

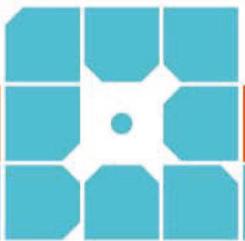
I feel my lifestyle is frowned upon, but it's not always possible to 'hustle' and no one ever talks about surviving in the sense of taking on projects because you simply need to pay the bills. I do wish that things were different – my life frustrates me greatly, but I'm proud to be able to freelance with a chronic illness. ■

**PROFILE \*** Katherine Cory is a freelance graphic and web designer, passionate about working with small and independent businesses, and aspiring surface pattern designer.



This is the moment  
when a click  
turns into a lead.

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or try something new with your website.  
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**WordPress.com**  
with  Jetpack