Seven ways to be a happier JavaScript developer



Chris Heilmann (@codepo8) Xpand Conference 2019

aka.ms/cloudsociety

Understanding that JavaScript is not a language...

JavaScript is a lot of things...

- Far from perfect
- Everywhere
- Free to use
- Environment independent
- Freely documented
- Instantly gratifying

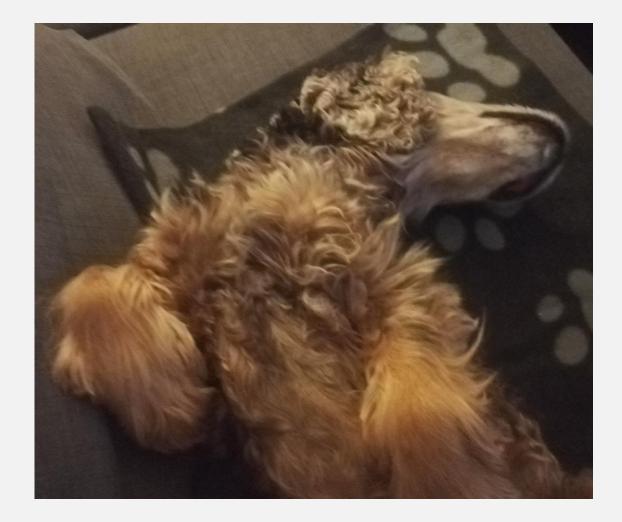
JavaScript's versatility means diverse needs.

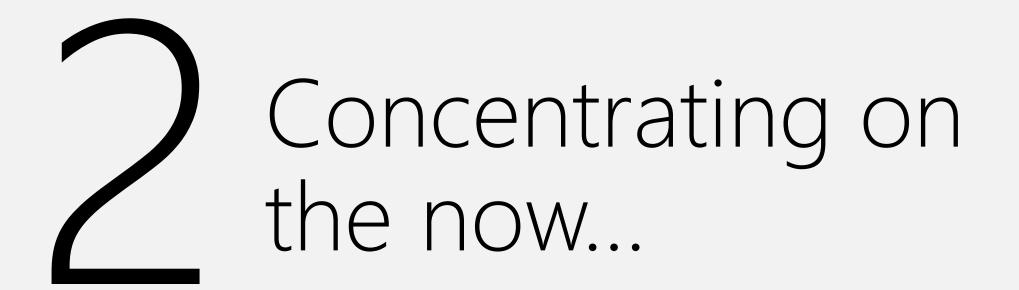
- Web scripts
- WebView based solutions (Electron)
- Browser extensions
- Web based apps (PWA)
- Server-side solutions (Node)
- Convertible to binary formats (WebAssembly)
- Powering Robots (Nodebots)
- Packages (NPM)

JavaScript is much more now than we ever expected...

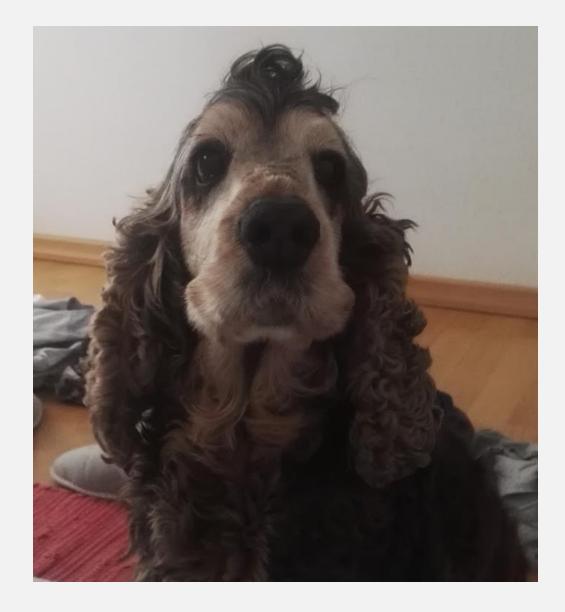
- A standardised language (TC39)
- An ecosystem
- A community
- An opportunity to do a lot with one language
- A chance to cause damage (performance, security)

Relax - in a world of options nobody can be an expert in all of them.





Worries of the past shouldn't prevent us from creating...

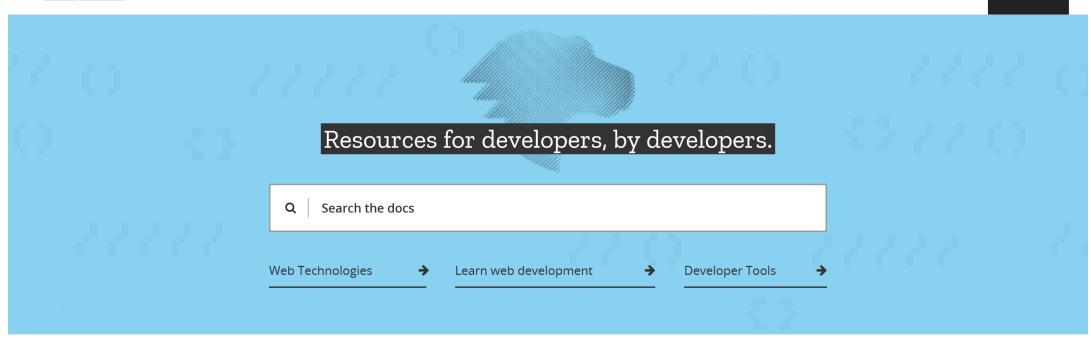


Focusing exclusively on the next cool thing is as stifling and depressing





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developer.mozilla.org/en-US

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caniuse.com

S Limiting our development environment

The web development trinity

Editor

Terminal

Browser



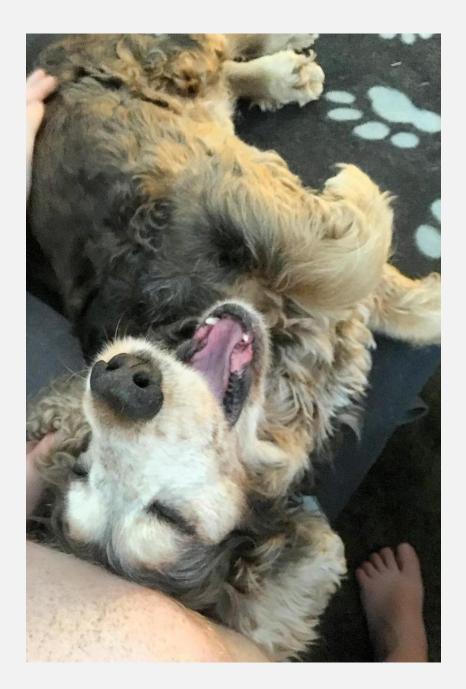
- Where we code
- Where we tweak themes
- Where we mix spaces and tabs *like animals*
- Where we do version control
- Where we run build tasks
- Where we deploy
- Where we tweak themes
- Where we assume everyone runs OSX

- Where we debug
- Where we check and tweak visual output
- Where we audit
- Where we annoy the end user with odd log messages.

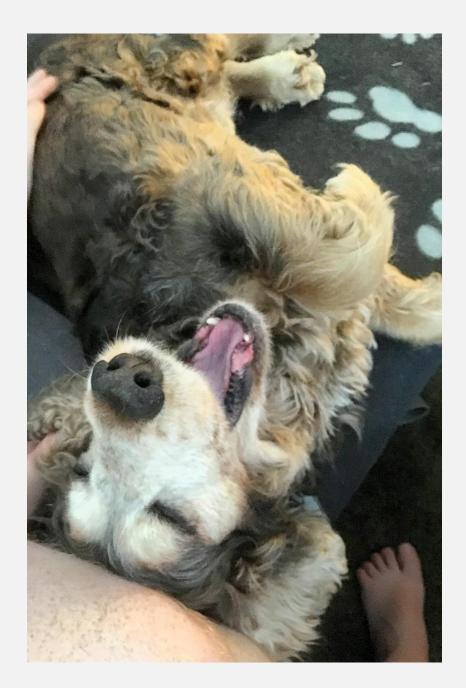
That is a lot of duplication and multiplication with choice



Tooling is starting to overtake that historically grown trinity.



Good editors consolidate features to avoid context switching.



VS Code (@code)

- Open Source, Cross-platform
- Hundreds of extensions
- Highly theme-able
- Built-in source control support
- Built-in terminal
- Integrates into build processes
- Written and extensible in TypeScript
- Straightens and lightens teeth with repeat use
- Possibly is good against hair loss

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VS Code's autocomplete is amazing. I'll get like 60% of the letters right of what I want, and it still guesses the right thing.

e.g. "RgstIOt" -> RequestOptions

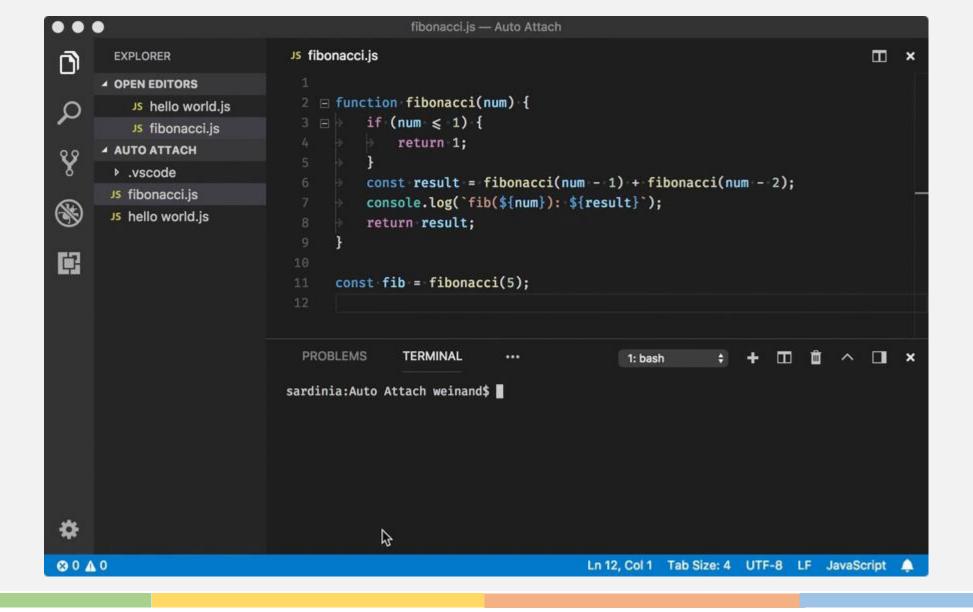
I can just roll my face on my keyboard and still be close.

12:34 AM - 10 Apr 2018

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twitter.com/crandycodes/status/983488436756627456

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code.visualstudio.com/updates/v1_22#_node-debugging





Burke Holland is a front-end developer living in Nashville, TN; the greatest city in the world. He enjoys JavaScript a lot because it's the only way he ... More about Burke ...



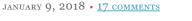
About two years ago, I begrudgingly opened Visual Studio Code (VS Code) for the first time. The only reason I even did so is that I was

working on a TypeScript project (also quite begrudgingly) and I was tired of fighting with the editor and the compiler and all of the settings that I needed to make a TypeScript project work. Someone mentioned to me that TypeScript "just works" in VS Code and I was

pleasantly surprised to find that they were right.

I expected that though. VS Code is from Microsoft, so it's entirely expected that TypeScript would just work. What I did not expect was that virtually anything that I needed to do in VS Code "just worked" too. And I do mean anything. While this article focuses primarily on features for the web as well as JavaScript developers, VS Code has integrations with Go, Python, Java, and Ruby – just to name a few.

Over the next few months, I began to discover things in VS Code that I found remarkable. I made the official switch to VS Code, and I haven't looked back since.



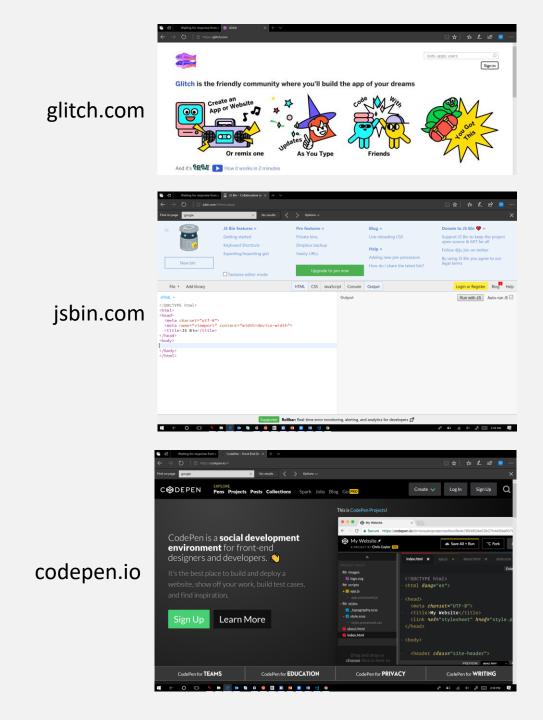
Visual Studio Code Can Do That?

JavaScript 177



smashingmagazine.com/2018/01/visual-studio-code vscodecandothat.com

Instead of using your own machine, why not try online before?



Making it harder to write bad code.

Introduce first topic/question

- 1. When we talk about enterprise <u>aplications</u> and the web, what's are the pain points?
- 2. What can be done about that? How could companies create happier users

Applying a stricter ruleset pre-empts mistakes

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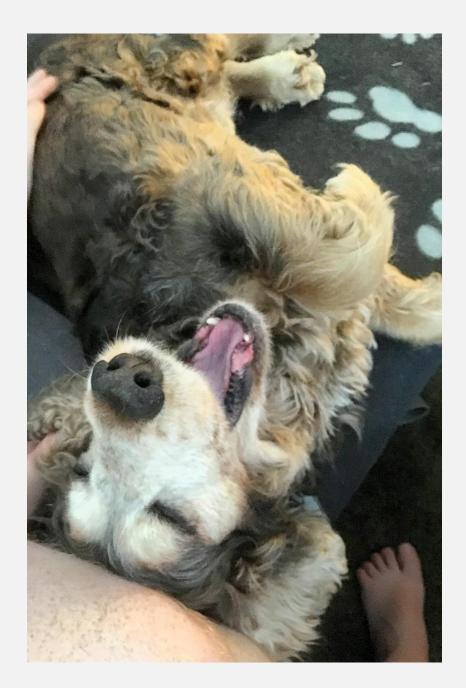
Linting > Debugging

- Find mistakes while you make them
- Based on the experience and consensus of many others
- Learn from explanations of linting results
- Install and configure, or use in-built linting.

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Moving from knowing .* to learning by making mistakes



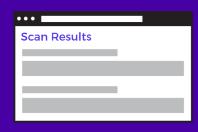
Adding custom linting and validation to your dev and release process.

A JS Foundation Project

🕑 webhint

Use webhint to improve your website

webhint is a linting tool that will help you with your site's accessibility, speed, security and more, by checking your code for best practices and common errors. Use the online scanner or the CLI to start checking your site for errors.



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TRY THE ONLINE SCANNER



GET STARTED WITH THE CLI

"hint" on NPM || webhint.io

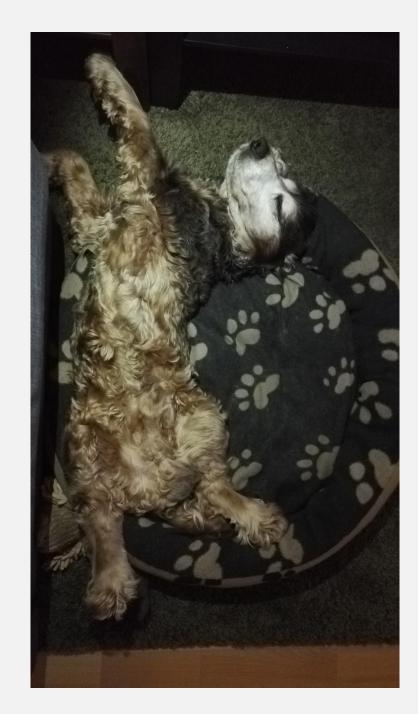
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Getting to know our tooling

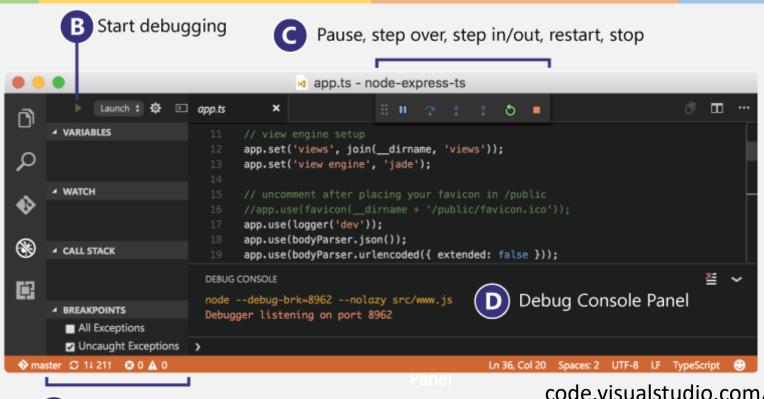
It is true that our tools have become much more complex.



Knowing them gives you superpowers and insights how to build great solutions



Step one is to stop using console.log() and use breakpoints instead.





code.visualstudio.com/Docs/editor/debugging

smashingmagazine.com/2018/02/javascript-firefox-debugger/



Take part in the JavaScript community...

- Help document
- Help clean up and send pull requests
- Publish your own work as open source
- Enjoy meetups and events
- Help by example, not by telling people what they should do

Muffling the noise ...

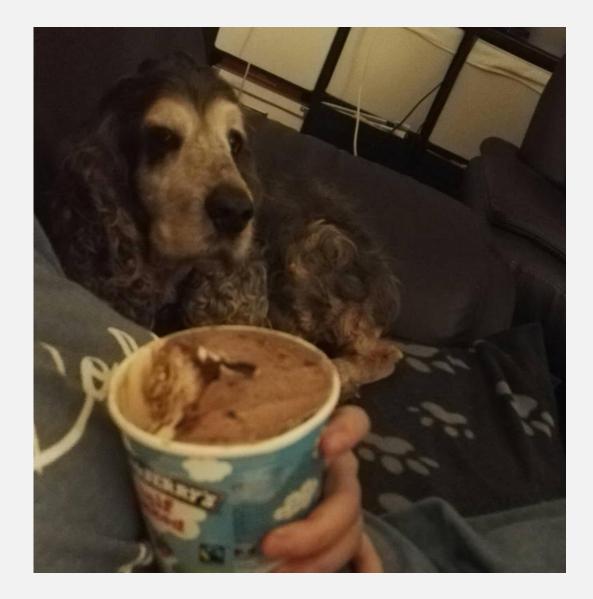
Not everybody cares about the nuts and bolts and has endless time to invest...



6:56 AM - 22 Jan 2018

twitter.com/headjs_ru/status/955333399564161024

It is easy to get tempted to sell people your experience as "best practice"



Find the largest item in the array...

let arr = [20, 10, 5, 10];

Once learned, never forgotten...

let arr = [20, 10, 5, 10];

const largestInArray = function(arr) { let temp = 0;for (let i = 0; i < arr.length; i++) {</pre> if (array[i] > temp) { temp = array[i]; return temp;

Loop optimisation

let arr = [20, 10, 5, 10];

const largestInArray = function(array) { let temp = 0; let all = array.length; while (all--) { if (array[all] > temp) { temp = array[all]; } return temp;

Using native methods instead of "if"...

```
let arr = [20, 10, 5, 10];
```

```
const largestInArray = function(array) {
    let temp = 0;
    let all = array.length;
    while (all--) {
        temp = Math.max(array[all], temp);
    }
    return temp;
}
```

Looking up array methods..

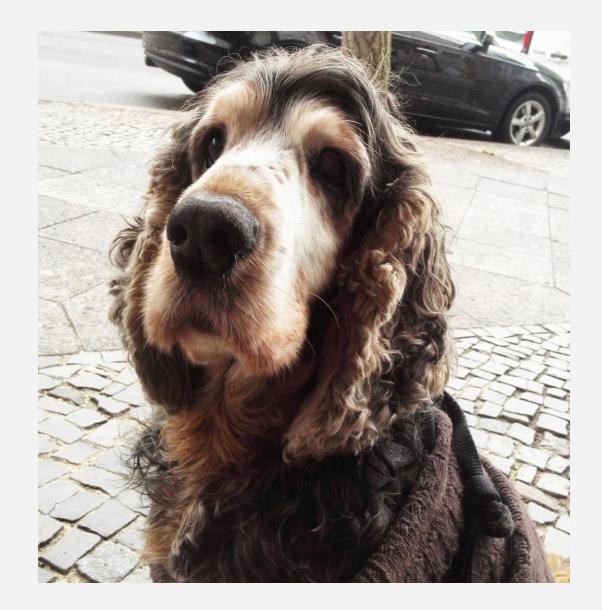
const largest = arr.sort().reverse()[0];

let arr = [20, 10, 5, 10];

Embracing new language features...

const arrMax = arr => Math.max(...arr);

Which one is the best?



It depends™

- Who is writing the code?
- Where does it run?
- How clean is the data we deal with?
- What horrible old environment needs support?
- Who will maintain it?
- How likely is it ever to change?
- How will it be used?

Validate and triage

- Let's not feel bad if not everything in the JS world excites us
- Not everything hot and cool is ready to replace what we are comfortable with.
- If it doesn't make our lives easier, it is OK to not use it – hype moves fast and forgets fast.
- Let's be excited, but also ready to give it a "meh"

Projection isn't good...

- What makes us effective can be very subjective
- It makes sense to talk about our success.
- It makes less sense trying to force others to do the same
- New approaches lead to new happy paths, let's not discourage people from finding theirs.

Let's not kid ourselves about the bleeding edge...

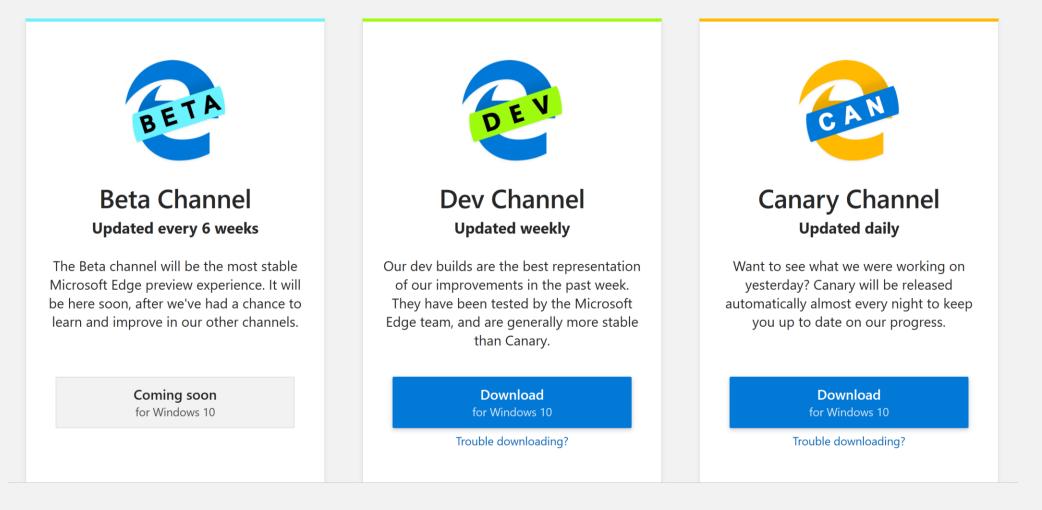
- The amazing new idea of today very often becomes the problem of tomorrow
- Production code moves less fast than we think
- Our end users aren't guinea pigs or canaries
- It is the bleeding edge, make sure you have enough blood to give

Let's make this a great community...

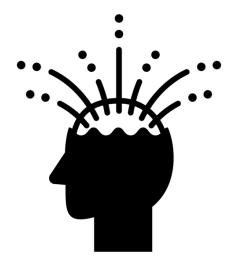
- Let's be the people we'd like to have met when we started
- Let's be kind
- Let's be supportive
- Let's allow people to learn by making mistakes and letting off steam
- Let's not get lost in pointless drama

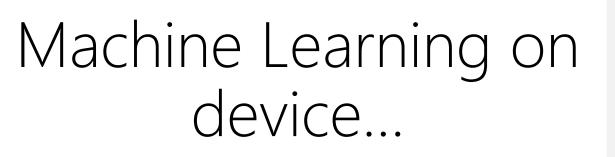
Bonus round: Browsers, JavaScript & ML Fun

Brand new opportunities



http://aka.ms/edgeinsider







Home / Machine Learning for the...

MACHINE LEARNING FOR THE WEB COMMUNITY GROUP

The mission of the Machine Learning for the Web Community Group (WebML CG) is to make Machine Learning a first-class web citizen by incubating and developing a dedicated low-level Web API for machine learning inference in the browser. Please see the <u>charter</u> for more information. The group invites browser engine developers, hardware vendors, web application developers, and the broader web community with interest in Machine Learning to participate.

Note: Community Groups are proposed and run by the community. Although W3C hosts these conversations, the groups do not necessarily represent the views of the W3C Membership or staff.

w3.org/community/webmachinelearning

@codepo8

Help the human



I used Tensorflow.js to build a quick prototype of head-controlled keyboard to allow people to communicate with simple head movements. Might not be much but it's amazing that you can do stuff like that in JS charliegerard.github.io/teachable-keyb... #tensorflowjs #javascript #ML #accessibility

TEACHABLE KEYBOARD



Q	w	E	R	т	Y	U	1	0	Ρ
A	s	D	F	G	н	J	к	L	z
		x	с	v	в	N	м		
			Space		Delete				



https://charliegerard.github.io/teachable-keyboard/

Following

TEACHABLE KEYBOARD

Write using motion control

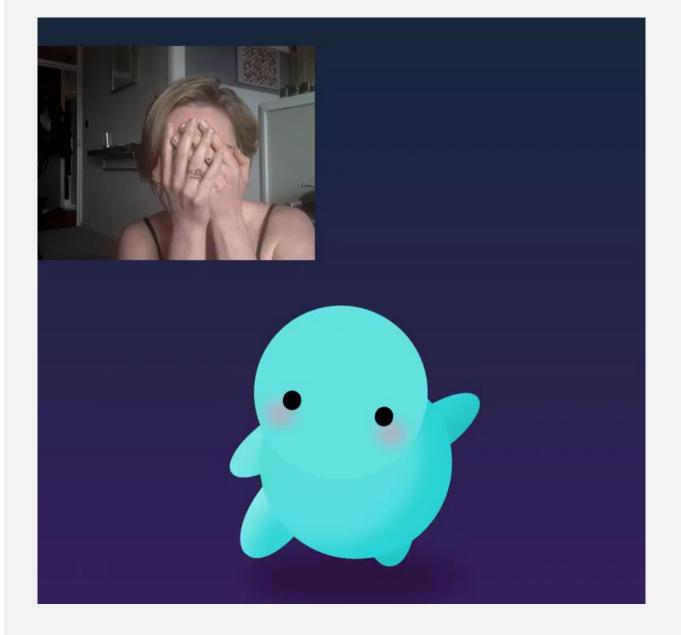


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https://charliegerard.github.io/teachable-keyboard/

@codepo8





Cassie Evans https://codepen.io/cassie-codes/pen/jKaVqo/

@codepo8

Thanks! Chris Heilmann @codepo8

Terminal photo by <u>Terminal 5 Insider</u> Editor photo by <u>John Oxley Library</u> Browser photo by <u>Joseph Brent</u>

