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Github Universe '17 ☀ Pier 70

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Summary

Social networking

I think it is every company's interest to include social networking into your service. Social features of applications bring vast benefits to the product: better retention rate, more time spending on the site, and more user-generated contents. GitHub is not an exception, it was built to be a social networking site, even though it wasn't doing a good job exploiting those features. With AI and machine learning, it provides GitHub better tools to recommend more interesting contents to the users and further brief the learning curves of certain technologies. The core feature of GitHub is learning, with the increasing demand for learning to code, and the wish to contribute to open source projects, GitHub can attain more user traffic . And one of the hardest thing about any learning platform is to provide relevant contents, either the right materials to learn or the appropriate level of difficulty.

Platform

Another business model of technology companies is the devotion to be platform. Company cannot possibly solve every problem by themselves nor provide every service the community needs by themselves. Building a robust community not only offers customers more options and diversity for them to use your product, but also generates continuous feedbacks from the users and enthusiasts within the community. By building a larger ecosystem and making the cake bigger, everyone can benefit from the given market.

Accessibility

I've seen several accessibility practices were utilized by GitHub during this conference. ASL translators, live streams and subtitles were added to the event broadcast. Live streams made this event a global festival, ASL

translators were provided by the conference organizer to assist hear-impaired audience in the first row, and subtitles are generated based on voice input of the presenters. All of these are really good conference/event practices that we can learn from. It demonstrate that the company really cares about the community and how diverse the audiences are.

Day 1 Oct 11

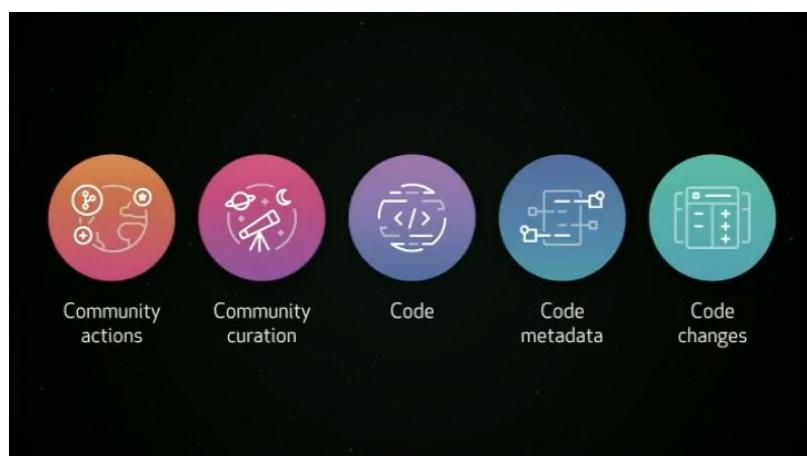
I. Keynote: Jason Warner, SVP Technology @ GitHub Announcement

1. 67 million repos
2. 53 million monthly visitors
3. 1.3 million student developers
4. 2.1 million monthly [Atom](#) users
5. 3.3k first pull request per day => more new users and open source contributors
6. 1.5 billion commits in 2017
7. 1.5 million teams
8. 200 million daily GraphQL queries
9. 400k+ OAuth Apps

Big Data

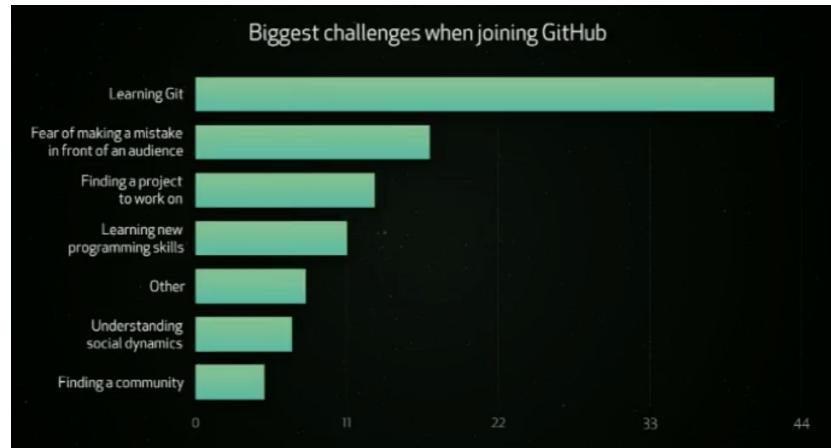
1. Largest software dataset
2. ~0.5 petabyte of code
3. 1.5 billion commits this year
4. 100 million pull requests merged since 2007

Missions



1. Community actions

- a. Promote software development community by make git and open source accessible



- b. Newsfeed feature



2. Community curation

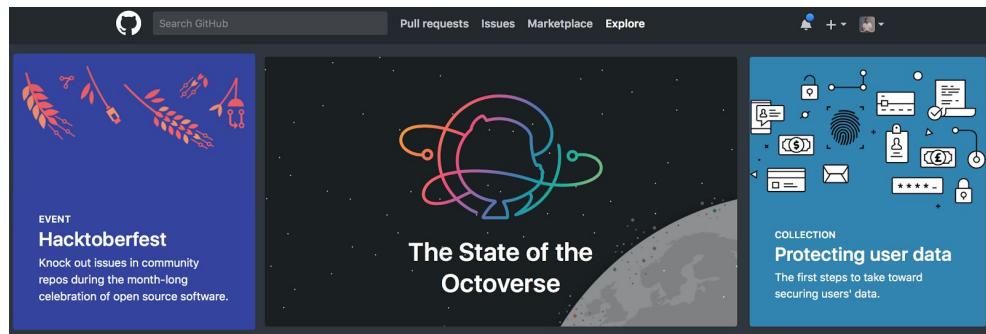
- a. Topics feature

A screenshot of the GitHub Topics feature. It displays a list of curated repositories:

- freeCodeCamp / freeCodeCamp** ★ 291k
The freeCodeCamp.org open source codebase and curriculum. Learn to code and help nonprofits.
Tags: learn-to-code, nonprofits, programming, nodejs, react, d3, careers, education
Last updated: 16 hours ago
- facebook / react** ★ 78.2k
A declarative, efficient, and flexible JavaScript library for building user interfaces.
Tags: javascript, react, frontend, declarative, ui, library
Last updated: 4 hours ago
- facebookincubator / create-react-app** ★ 35.8k
Create React apps with no build configuration.
Tags: react, zero-configuration, build-tools
Last updated: 6 hours ago
- callemail / material-ui** ★ 29.4k

On the right side, there is a detailed view for the **React** repository, which includes its logo (a blue atom-like icon), a brief description, and links to its GitHub page, Wikipedia, and creation details.

b. Explore feature



c. Collections feature

Collections

[See more collections >](#)

The GitHub Collections page displays several cards:

- Getting started with machine learning**: Today, machine learning -- the study of algorithms that make predictions from data -- has found a new audience and a new set of possibilities.
- How to choose your first open source project**: New to open source? Here's how to find projects that need help and start making impactful contributions.
- Government apps**: Sites, apps, and tools built by governments across the world to make government work better, together.
- Open journalism**: See how journalists use open source software and data to power their newsroom and ensure information is reported fairly and accurately.

3. Code

- a. Table of contents for methods and functions inside repo

4. Metadata

- a. Dependency graph feature

Insight > Dependency graph

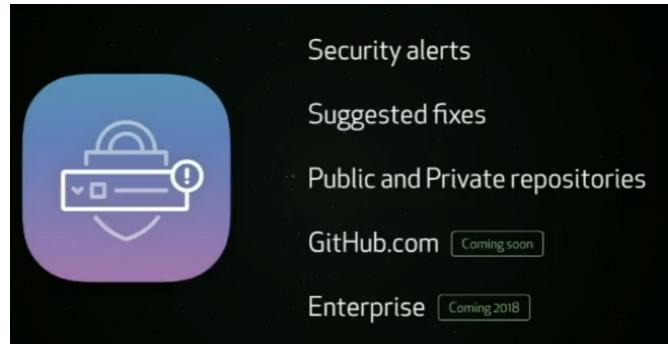
Dependency graph

[Dependencies](#) [Dependents](#)

These dependencies have been defined in react's manifest files, such as [package.json](#) and [packages/react-reconciler/package.json](#)

Dependencies defined in package.json 84		
	sebmarkbage / art	[^] 0.10.1
>	caolan / async	[^] 1.5.0
>	babel / babel-cli	[^] 6.6.5

5. Code changes



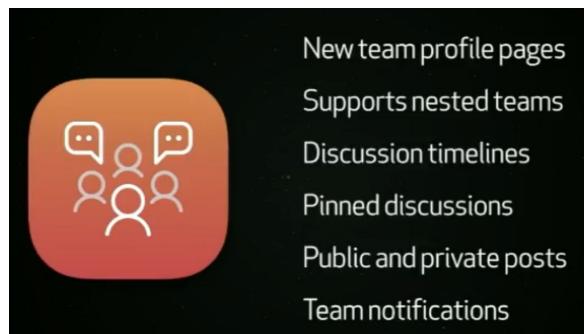
More from GitHub

1. [Octoverse](#): Github's annual report
2. **Community features**
 - a. "First-time contributor" badge
 - b. Code of conduct
 - c. 24-hr cooldown activity lockdown
 - d. GitHub Community Forum (coming soon)
3. **Marketplace**



4. GitHub Team updates

- a. Team Profile

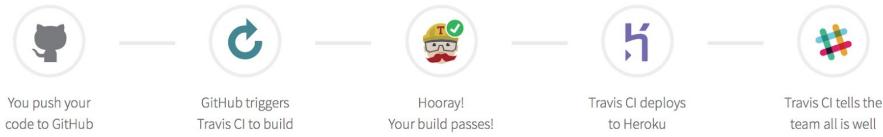


b. Team Timeline

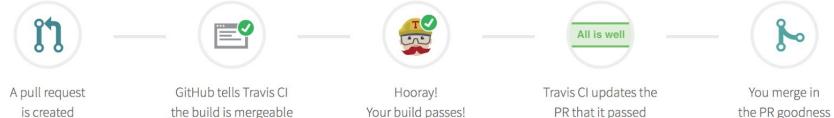
5. Continuous Integration (CI)

a. Workflow

Branch build flow



Pull request build flow



b. [Travis CI](#)

c. [CircleCI](#)

d. [CI/CD explained, YouTube](#)

II. Launching GitHub's public GraphQL API

Github APIs

1. [Doc](#)
2. [API v3 REST](#)
3. [API v4 GraphQL](#)

RESTful API

1. Restful APIs are easy for the server, not clients
2. Returns data fields you don't want and have to make multiple requests for endpoints

3. [Hypermedia](#)

[GraphQL](#)

1. A query language for APIs and a runtime for fulfilling those queries with your existing data
2. [Wiki](#)
3. *Why: "GitHub chose GraphQL for our API v4 because it offers significantly more flexibility for our integrators. The ability to define precisely the data you want—and only the data you want—is a powerful advantage over the REST API v3 endpoints. GraphQL lets you replace multiple REST requests with a single call to fetch the data you specify."*
4. Features
 - **A specification.** The spec determines the validity of the [schema](#) on the API server. The schema determines the validity of client calls.
 - **Strongly typed.** The schema defines an API's type system and all object relationships.
 - **Introspective.** A client can query the schema for details about the schema.
 - **Hierarchical.** The shape of a GraphQL call mirrors the shape of the JSON data it returns. [Nested fields](#) let you query for and receive only the data you specify in a single round trip.
 - **An application layer.** GraphQL is not a storage model or a database query language. The [graph](#) refers to graph structures defined in the schema, where [nodes](#) define objects and [edges](#) define relationships between objects. The API traverses and returns application data based on the schema definitions, independent of how the data is stored.

5. [Learn GraphQL](#)



The image shows a code editor window with two parts. The top part contains a GraphQL query:{
 hero {
 name
 height
 }
}The bottom part shows the resulting JSON response:{
 "hero": {
 "name": "Luke Skywalker",
 "height": 1.72
 }
}

III. Microsoft <3's open source: becoming the biggest contributor

Version control softwares

1. [Git](#)
2. [Libgit2](#)

[**.NET Foundation**](#)

IV. Building Inclusion from Inside Out

Github diversity practice

1. [Github Diversity Report](#)
2. [BlacktoCats](#)
3. [Operation code](#)

V. Transformative Changes in Challenging Times

LGBT+

1. Maven: LGBT+ in tech

VI. How tech policy is shaping the future of software

Net Neutrality

1. Policies trying to eliminate [FCC Open Internet Order 2010](#)

Policy as service

1. Impacting laws and regulations
2. Listening, researching, analyzing explaining
3. Driving new standards, modeling best practice

Balanced-employee-IP-agreement, BEIPA

1. [BEIPA](#)
2. Open source IP agreements on GitHub
3. Recognize employee's IP rights in work unrelated to business
4. Impacts mobility

Day 2 ➔ Oct 12

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Speakers

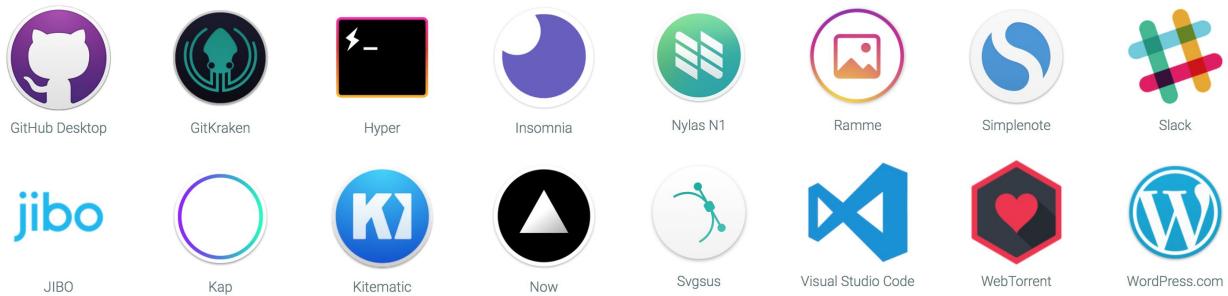
1. [DXC Technology: IT service](#)
2. [Codacy: automated code analysis/quality tool](#)

II. Electron: keeping an ion it

Build cross platform desktop apps with JavaScript, HTML, and CSS

Electron

1. Electron = [Chromium](#)(Google's open-source browser) + Node.js
2. Benefits of npm and all the packages that came with it
3. Can publish/deliver in Windows/Mac/Linux platforms
4. Apps build with Electron



5. [Awesome-electron](#): a repo for Electron apps & plugins
6. [TypeScript](#): a language for application-scale JavaScript. TypeScript adds optional types, classes, and modules to JavaScript
7. [Caret](#): beautiful markdown editor

Tradeoffs

1. Native apps: smaller file size, smaller footprint
2. Electron: be able to use open source libraries, cross-platform

III. Interop's labyrinth: sharing code between web & Electron apps

Node.js

1. [File system](#)
2. [fs module](#)

Electron Architecture

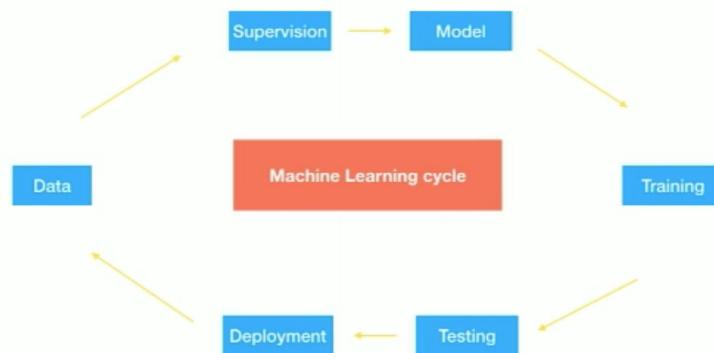
PATH	DESCRIPTION	SHOULD YOU DO IT?
Path 1: The Shortcut	Just load your remote web app into Electron, like a browser	🚫 Nope, it's a trap
Path 2: Remote Isolation	Gate access to Node by loading your remote web app in an isolated context	🤔 Only if you're currently following Path 1
Path 3: Local Resources	Build your desktop app as a separate client composed of shared local resources	😊 Yup, give it a shot!
Path 4: Hybrid	Ship a local snapshot of shared resources and update them remotely with background delta updates in an isolated context*	🤔 Probably!

Slack

1. Slack engineering blog, [slack.engineering](#)

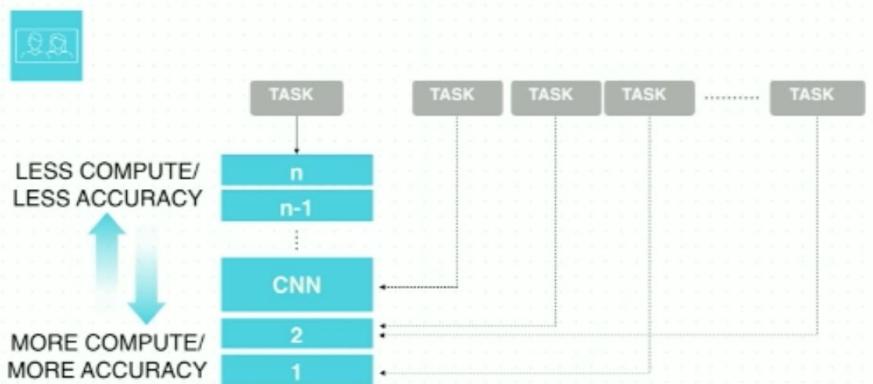
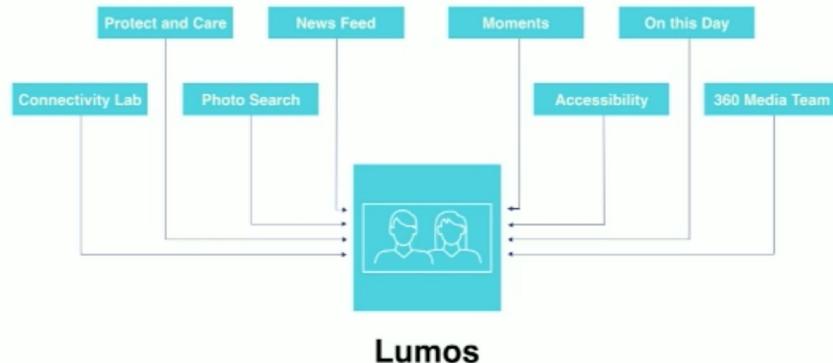
IV. Pushing the boundaries on video understanding @Facebook

Machine Learning Cycle



Video Recognition

1. [AI in Facebook, Harvard Business Review](#)
2. Lumos: Facebook's computer vision platform



3. Mask R-CNN: image segmentation technique by [Kaiming He](#)
 - a. [Publication](#)