



# 全球云计算开源峰会2017

聚合云计算新势力，拥抱全世界新开源  
GLOBLE CLOUD COMPUTING OPEN SOURCE SUMMIT

## Open Source and Google Cloud 开源与谷歌云

Nan Boden

Head of Global Tech Partners, Google Cloud

谷歌云全球技术合作伙伴**负责人**



# 开源是软件开发的新常态 Open Source is The New Norm For Software Development

Open Source Windows May Not Be that Big a Long Shot After All

Open-source Linux a step closer to automotive use

The Automotive Grade Linux project announced the release of its Standard Code Base 2.0, implementing support for audio stream routing, infotainment and apps.



Tech Firms Grapple With How to Make Open Source Pay

Issue gains currency as private investors pour money into open-source startups

N

By ELIZABETH DWYER

Updated March 3, 2016 2:19 PM

On a sunny November day, startups gathered at San Francisco's headquarters to discuss how to make open-source software pay.

Each of the companies distributing open-source software is looking for

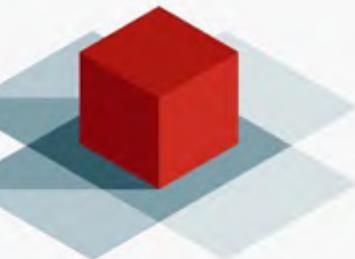
TECH & SCIENCE  
BITCOIN GOES CORPORATE, OR AT LEAST THE BLOCKCHAIN DOES

By G. BURKHARDT ON 5/18/16 AT 8:45 AM

BrainControlled Robots Develop by Mammal cap that measures their brain signals



OPEN SOURCE WON. SO, NOW WHAT?



cial services is finally set again," says Jim Zemlin, of the Linux Foundation.

"back office" and "sexy" in the same sentence, and it is. But the changes coming to how corporations can, as well as manage digital rights, could amount to a tidal wave once and for all of the bibles of things like real estate transactions. All this is technological outgrowth of the digital currency chain.

to change money. That still may be in the offing, but seems less and less likely that we will ever all be me for 1/100,000,000 of a bitcoin. But there's one that has the chance to impact nearly everyone: the

# The New Economic Norm 新常态



“ Organizations that don’t harvest this shared innovation will be unable to compete.

提高组织竞争力的方式就是共同创新。

”

开源项目有上百万个

There are Millions of Open Source Projects



50,000,000

开放源存储库



430,000

开放源项目



50+

孵化中的项目



120

孵化中的新项目



1,525

项目存储库

# Linux是有史以来最成功的软件

## Linux is The Most Successful Software in History

53,000

个Linux内核中的  
源文件

21M+

条源代码

3,900+

个来自全球的开发  
方

10.3B

典型Linux OS的价值

99.4%

全球最佳性能的计  
算系统

64.8%

智能手机、平板、  
手持设备、智能电  
视和可穿戴式电脑

90%

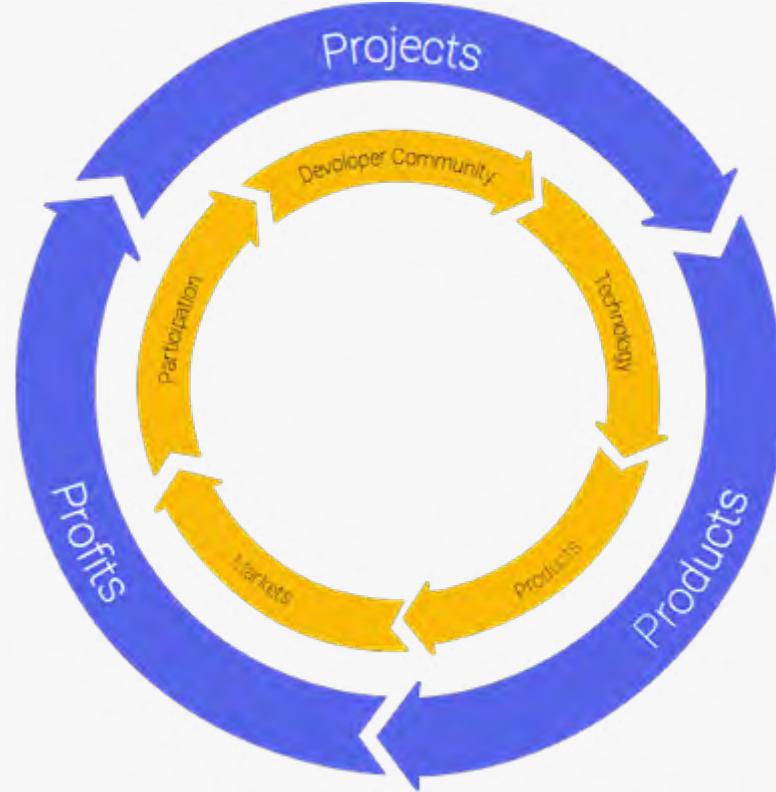
全世界股票交易

# 生态圈 ecosystem

- 1. A rich and diverse developer community whose code is used to create value which benefits industry and society.  
丰富多样化的开发者社群，将代码用于创造价值，惠及行业及社会。

- 2. Part of that value is in turn reinvested back into the project.  
开源代码反哺项目。

通过打造互信  
基金会使生态圈发挥作用  
Foundations  
enable ecosystems by  
creating trust



# 打造可持续的信任需要切实的工作

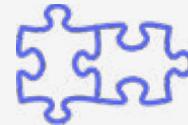
## Creating Sustainable Trust Requires Real Work



管理及成员  
Governance and  
Membership



开发流程  
Development  
Process



基础设施  
Infrastructure



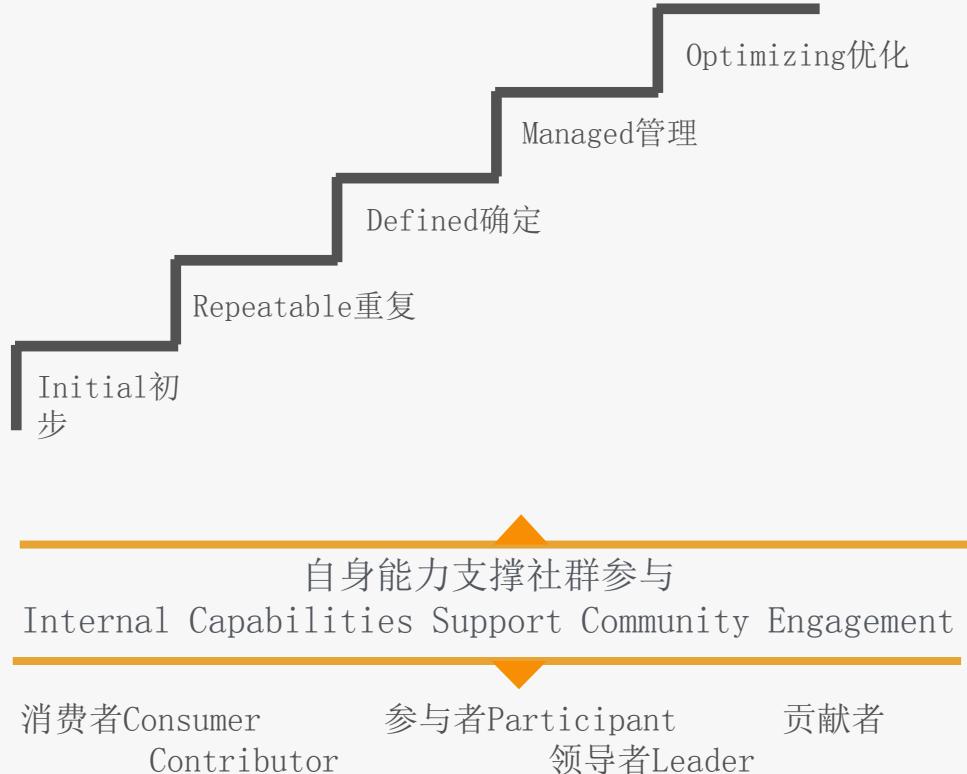
生态系统开发  
Ecosystem  
Development



IP管理  
IP Management

# 谷歌是开源的引领者

Google is a  
Clear Leader in  
Open Source



# Long History 积淀已久



10+

年的项目  
Year Projects



b Bazel



GRPC



 kubernetes

VP9

领导力  
Leadership

# 巨大投入与贡献

## Broad Contribution

287, 024

15, 000+

2, 500

个项目在2016年Github上  
获得谷歌员工支持，开放源代码  
Commits by Googlers  
to Open Source Projects on  
GitHub in 2016

个项目在2016  
年获得贡献  
Projects Contributed  
to in 2016

个项目获得了谷歌人的10多个活动支持  
Projects That Have Had  
10+ Events from Googlers

# 项目及计划 Projects and Programs

每年有  
50—75  
个主要项目计划  
主导社群  
Primarily Community  
Led Events Annually





100+

个安全漏洞在  
Chrome和Linux  
中被识别

Open Source  
Matters More  
for Cloud

开源对云意义更加重大

Collaboration fuels  
Innovation

协作驱动创新





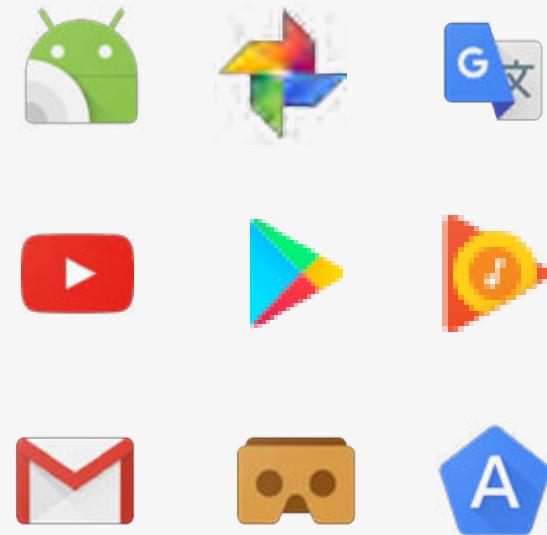
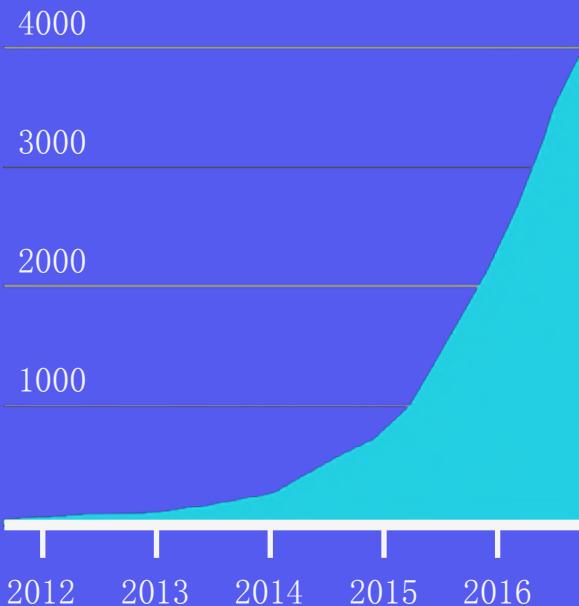
# TensorFlow的目标

Establish a common platform  
建立共同平台

Make this platform the best in the  
world  
打造全世界最优秀的平台

Open source the platform for  
everyone  
开放平台源，惠及所有人

谷歌指引  
包括的模式描述文件  
Google directories  
containing model  
description files

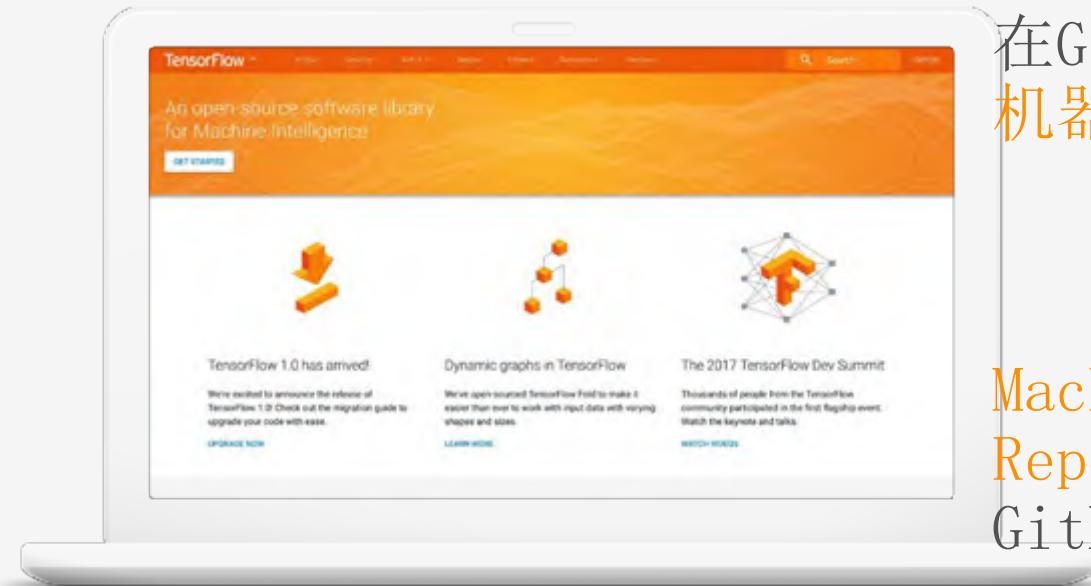


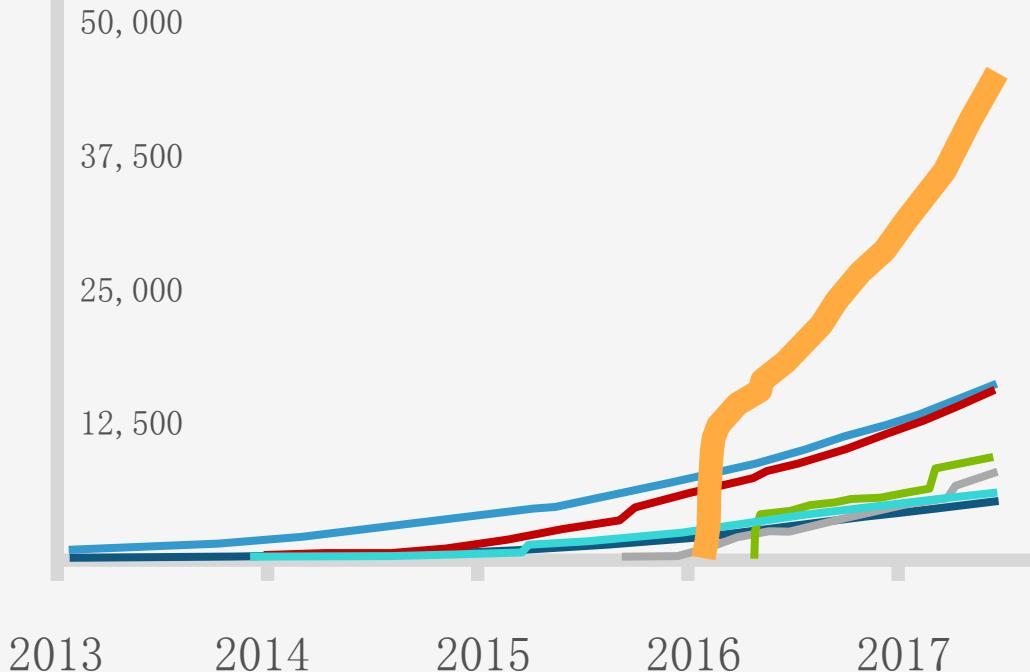
还有更多.....  
and many more . . .

# 在Github上 机器学习存储库排名

# 1

Machine Learning  
Repository on  
GitHub





49K+  
TensorFlow  
GitHub Star数量



ARM



机器学习，惠及众人  
Machine Learning  
Is For Everyone

E



# nature

THE INTERNATIONAL WEEKLY JOURNAL OF SCIENCE

## LETTERS

### LESIONS LEARNT

Artificial intelligence powers detection of skin cancer from images

## LETTER

### Dermatologist-level classification of skin cancer with deep neural networks

Anna K. Elkin<sup>1\*</sup>, Brett Gervais<sup>1†</sup>, Radhika A. Witten<sup>1</sup>, Ruchi Bhargava<sup>1</sup>, Nitin M. Sheth<sup>1,2</sup>, Chaitali M. Patel<sup>1</sup>, & Antonio Peralta<sup>1</sup>

With cancer the most common human malady<sup>1–3</sup>, it is primarily diagnosed visually, beginning with a initial clinical screening and followed potentially by dermatoscopy, a biopsy and histopathology and sometimes, automated classification of skin lesions using a computer. However, there is significant variability in the appearance of skin lesions. Deep convolutional neural networks (CNNs)<sup>4–12</sup> show potential for general and highly variable tasks across many low-grained object categories<sup>13</sup>. Here we demonstrate classification of skin lesions using a single CNN, trained end-to-end from images directly, using only pixels and disease labels as inputs. We train a CNN using a dataset of 129,456 clinical images—thousands of images—larger than previous datasets<sup>13</sup>—consisting of 2,032 different diseases. We test its performance against 21 board-certified dermatologists in two separate diagnostic challenges: one involving discrimination between benign versus malignant skin lesions and one between benign versus malignant melanomas versus benign nevi. The first case represents the identification of the most common cancers; the second represents the identification of the most dangerous. The CNN achieves performance on par with all tested experts across both tasks, demonstrating an artificial intelligence capable of classifying skin cancer with a level of competency comparable to dermatologists. Outfitted with deep neural networks, mobile devices can potentially extend the reach of dermatologists outside of the clinic. In addition, the algorithm will be available for subscriptions by the year 2021 (ref. 13) and can therefore potentially provide universal access to vital diagnostic cancer screening.

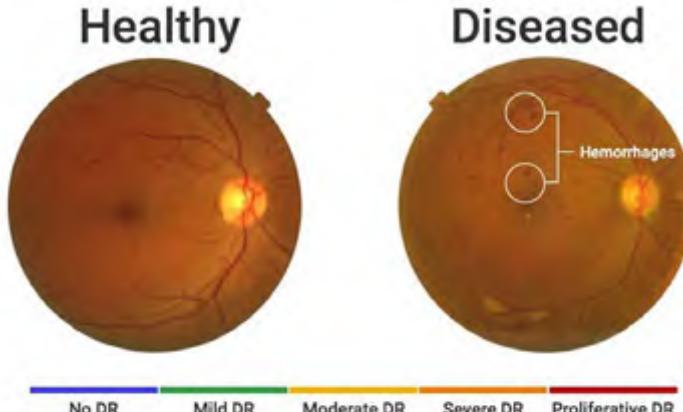
There are 4 million new cases of skin cancer in the United States every year. Our algorithm is currently available in clinical trials in the United States and will be available to consumers in 2021.

# JAMA

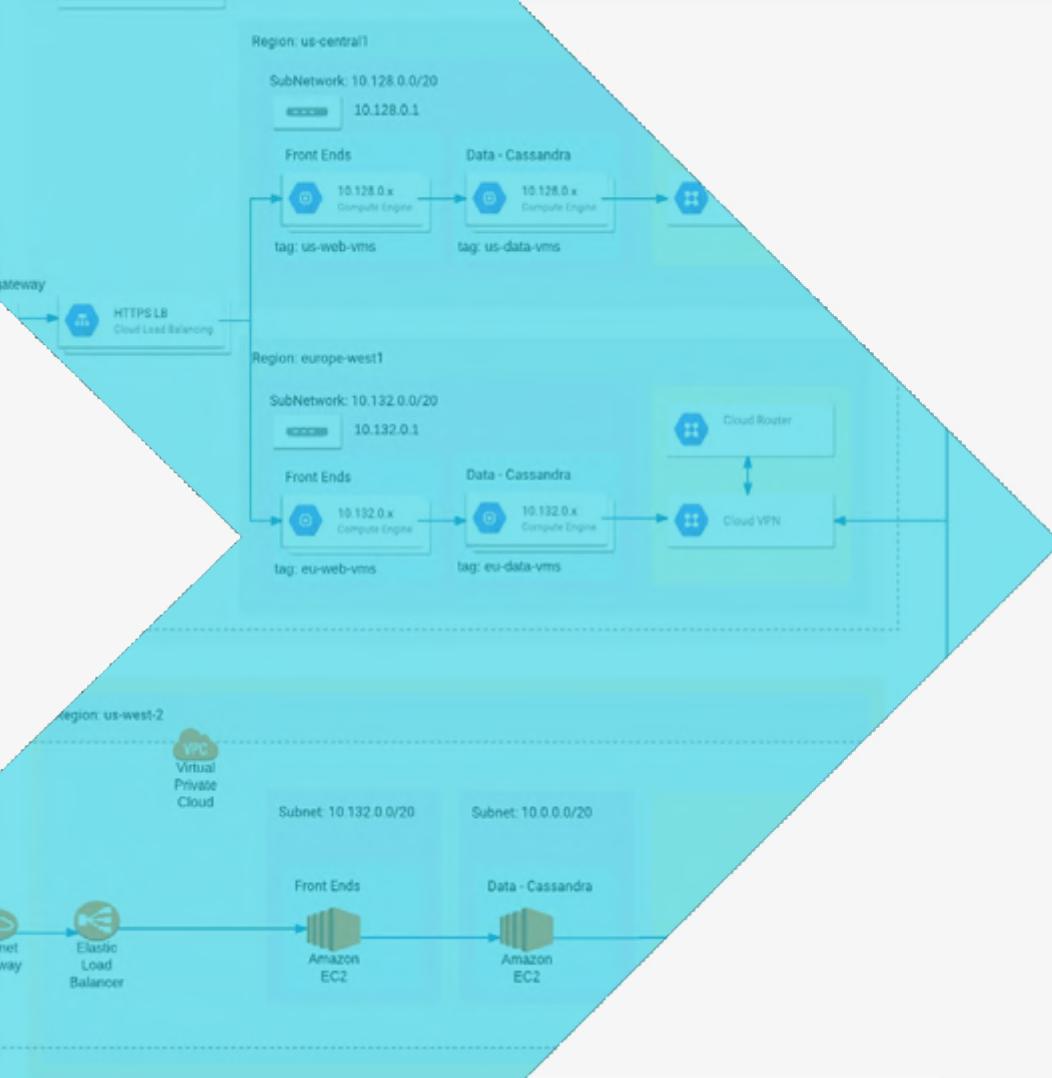
The Journal of the  
American Medical  
Association

## Development and Validation of a Deep Learning Algorithm for detection of Diabetic Retinopathy in Retinal Fundus Photographs

Vasan Ganesh, PhD, Lily Peng, MD, PhD, Marc Correa, PhD; et al. Author Affiliations: Google Inc, Mountain View, California



“开放式开发” 时代  
Age of  
Open Development



混合云和多重云  
时代已经到来  
Hybrid, Multi Cloud  
World Is Now

Open  
APIs  
开放API  
平台 + Open  
Source  
开放源 + Open  
Cloud  
开放云 = Open  
Development  
开放式开发



用户从开放云中  
受益良多  
Users Win  
in an Open Cloud



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聚合云计算新势力，拥抱全世界新开源  
GLOBLE CLOUD COMPUTING OPEN SOURCE SUMMIT

感谢聆听！  
Thank you!

