IoT für KMU

thomas.amberg@yaler.net, 04.2017

Internet of Things (IoT)



Internet-verbundene Computer mit Sensoren und Aktuatoren

"Physische Objekte mit Web API"



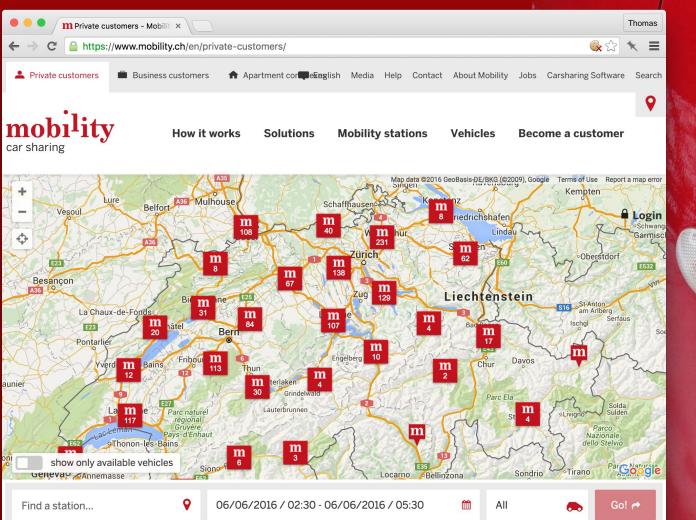


TEN MILLIONTH RASPBE

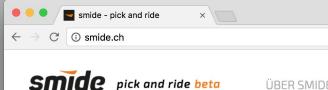
When we started Raspberry Pi, we had a sin people applying to study Computer Science programmable computers in the hands of the we might revive some of the sense of excite back in the 1980s with our Sinclair Spectrur

At the time, we thought our lifetime volumes if we were lucky. There was was no expecta no expectation of commercial success, and later we would be manufacturing tens of the exporting Raspberry Pi all over the world.





mobility car sharing



ÜBER SMIDE DAS SHARING

DIE APP DIE MODELLE



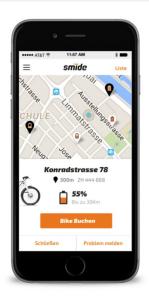
Thomas

€ ☆ * :

Jetzt starten: Lade Dir einfach gratis die smide-App herunter und finde heraus wo das nächste smide-bike steht! Dann schwing Dich aufs Rad und fahr ganz entspannt los!

Für deine ersten 20 Minuten schenken wir dir ein Startguthaben.





E-Bike orten

Über eine Kartenansicht findest Du schnell ein E-Bike in Deiner Nähe.

Reservieren und buchen

In der App sind bereits alle Infos zu Rahmengrösse, Reichweite abrufbar. Hier kannst Du Dein E-Bike buchen.

Prepaid Minuten aufladen

Über eine angebundene Kreditkarte kannst du jederzeit Dein Minutenguthaben aufladen.







■ Secure https://www.oticon.com/support/how-to/ifttt/guides





Get a notification in your hearing aids when the doorbell rings.

Click for full guide



Receive a notification when your home alarm system goes off.

Click for full guide





Send a text message or email to a caregiver when the hearing aid battery is low.

Click for full guide



Have your hearing aids switch to a preferred listening program based on your GPS location.

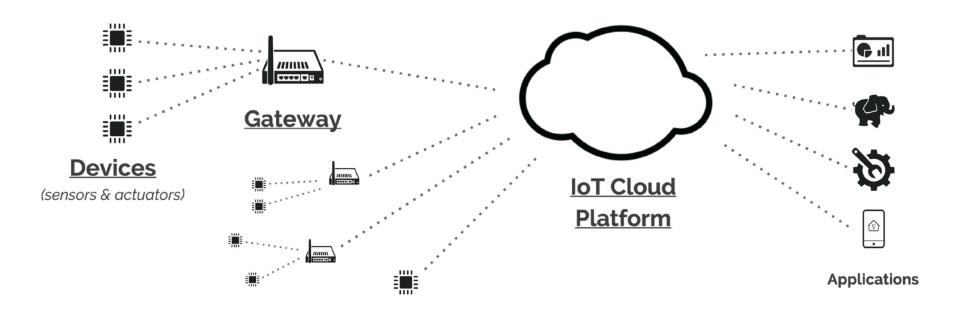
Click for full guide

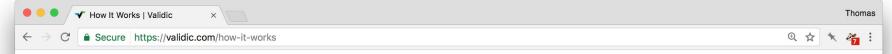
Have your hearing aids go into a special listening program when you make a



Wie verknüpft man Produkte mit Diensten?

IoT Plattformen







SOLUTIONS INDUSTRIES CLIENTS ECOSYSTEM RESOURCES CONTACT



INTEGRATE

Build one, simple connection to the Validic API to integrate data from hundreds of apps and devices.

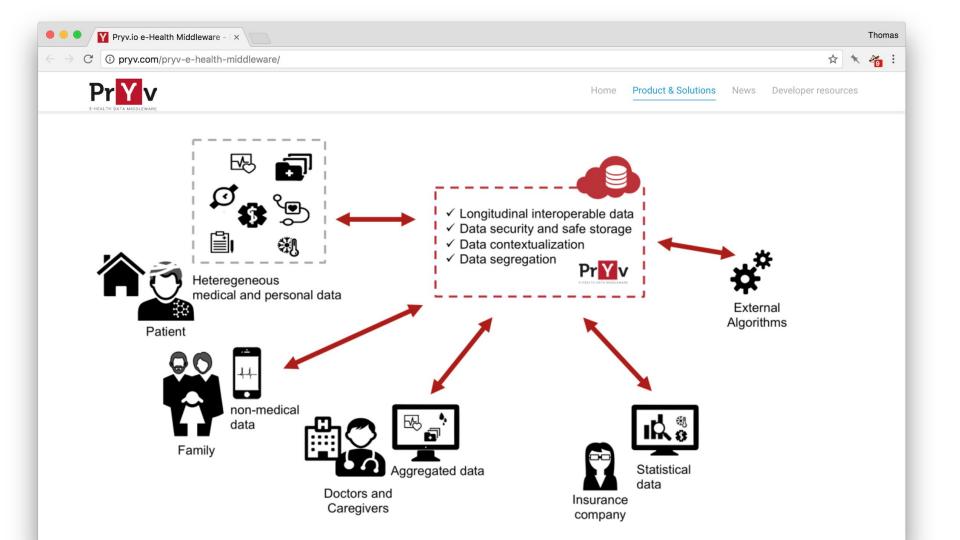


ENGAGE & CONNECT

Within your platform or portal, users can connect their apps and devices, granting permission for the transfer and use of data.

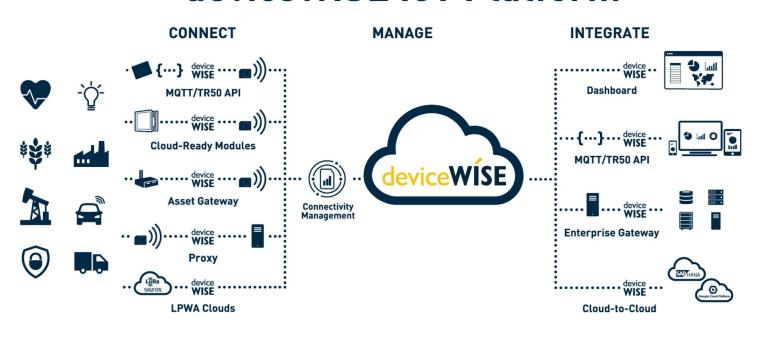
RECEIVE

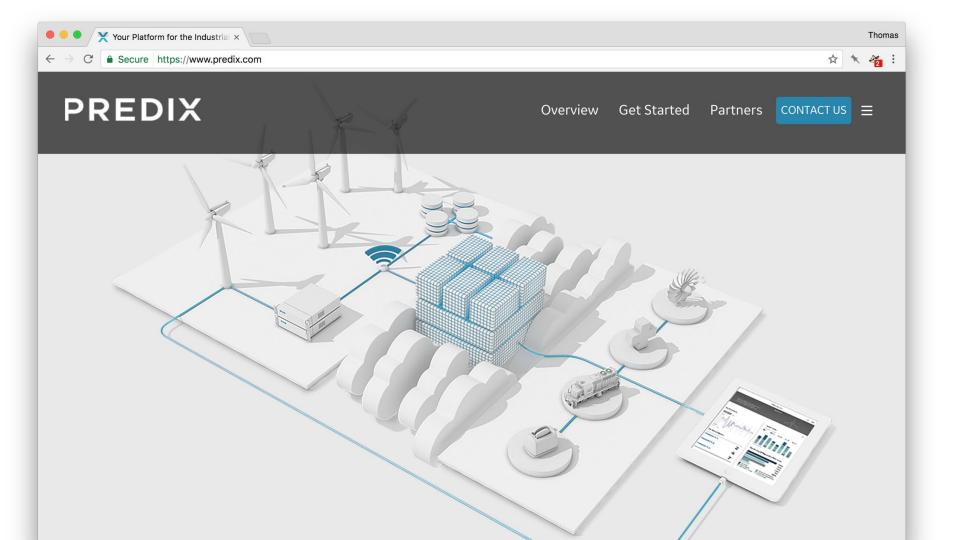
Receive timestamped, validated and standardized data through Validic's secure API for your use, display and analysis.

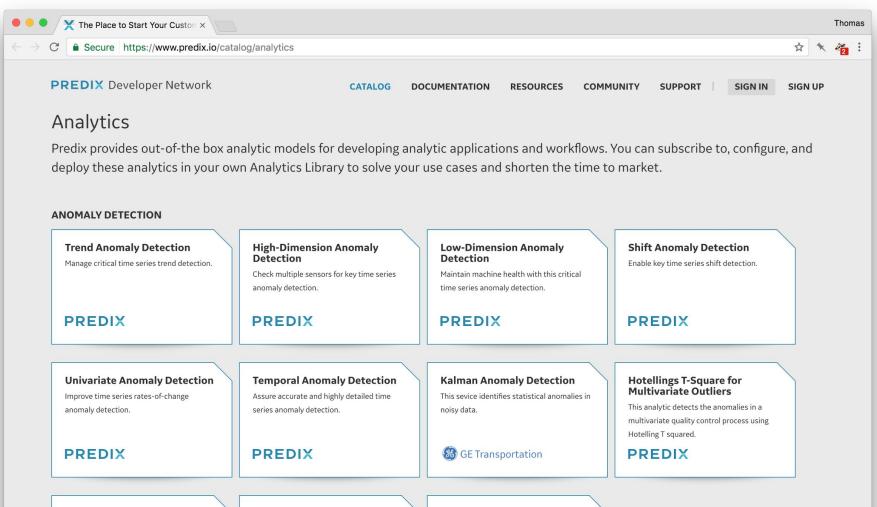




deviceWISE IoT Platform

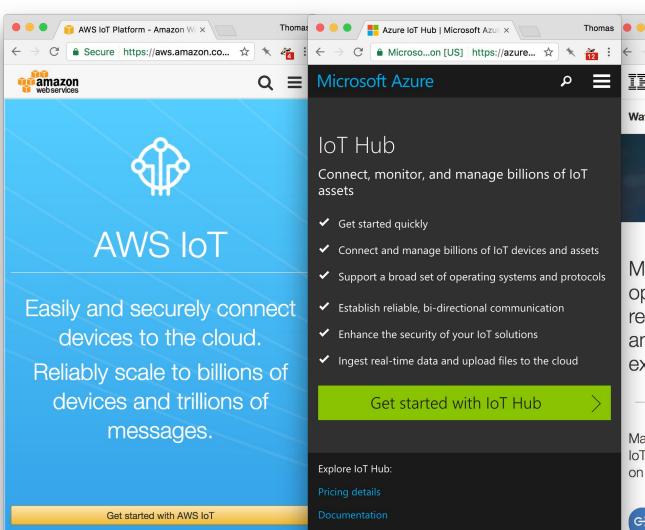


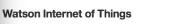




Isolation Forest Outlier Detection Granger Causality Anomaly

Image-Based Diagnosis





o≅ IBM Watson IoT - IoT Platform ×

Secure https://www.ibm.com/i...

Thomas

Make sense of data to optimize operations, manage assets, rethink products and services, and transform the customer experience.

Make the Watson IoT Platform the hub of your IoT projects. Deploy a cloud-hosted framework on IBM Bluemix.



Was ist der gemeinsame Nenner?

Informationsmodell



The sensor framework defines high-level representations for sensors, fitness data types, data points, and sessions. These representations make it easy to work with the fitness store on any platform.

Data Sources

Data sources represent sensors and consist of a name, the type of data collected, and other sensor details. A data source may represent a hardware sensor or a software sensor. You can define software sensors in your apps.

Data Types

Data types represent different kinds of fitness data, like step count or heart rate. Data types establish a schema through which different apps can understand each other's data. A data type consists of a name and an ordered list of fields, where each field represents a dimension. For example, a data type for location contains three fields (latitude, longitude, and accuracy), whereas a data type for weight contains only one field.

Data Points

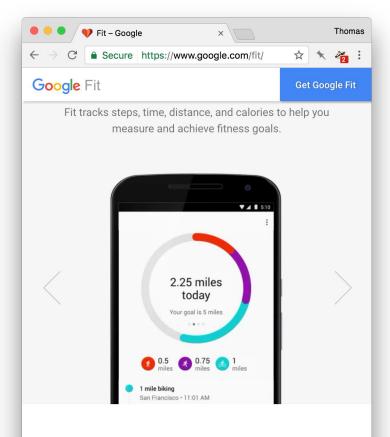
Data points consist of a timestamped array of values for a data type, read from a data source. You use data points to record and insert fitness data in the fitness store, and to read raw data from a data source. Points that contain a start time represent a time range instead of an instantaneous reading.

Datasets

Datasets represent a set of data points of the same type from a particular data source covering some time interval. You use datasets to insert data into the fitness store. Queries to read data from the fitness store also return datasets.

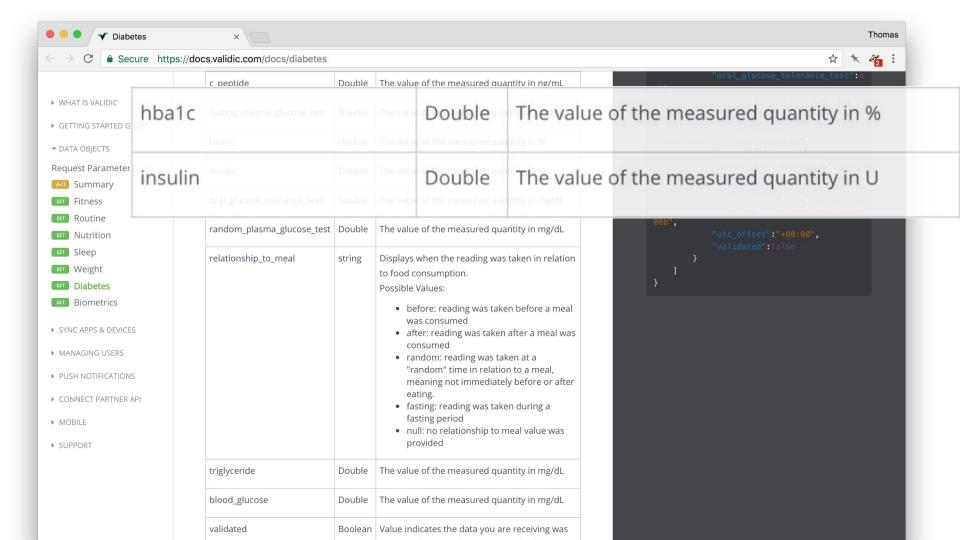
Sessions

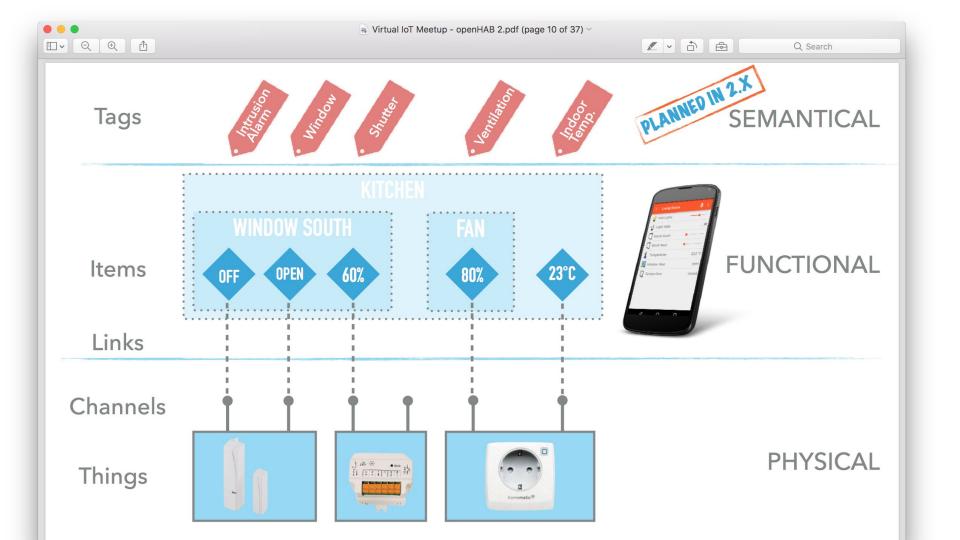
Sessions represent a time interval during which users perform a fitness activity, such as a run, a bike ride, and so on. Sessions help organize data and perform detailed or aggregate queries on the fitness store for a fitness activity.



Make every effort count

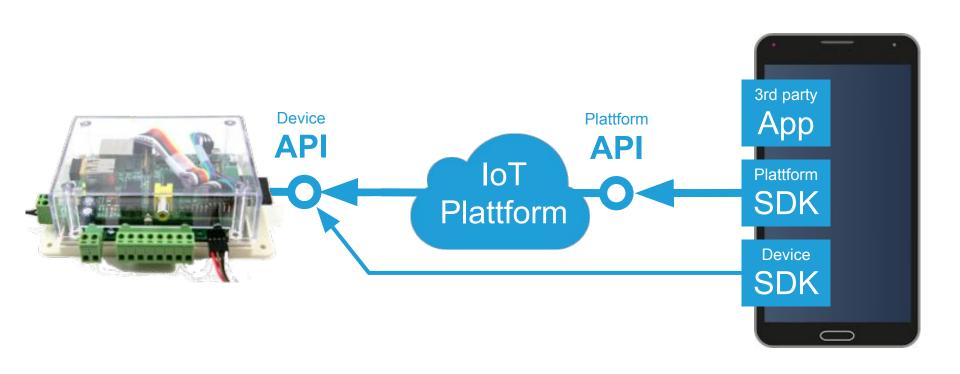
Fit automatically detects walking, running, and biking. Want credit for badminton, rowing, or yoga? You can choose from a list of 120+ fitness activities to track.





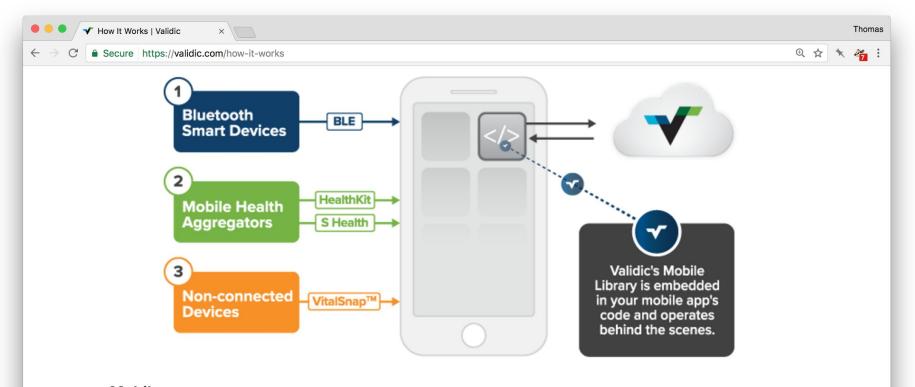
Wie wird ein Produkt integrierbar?

Schnittstellen



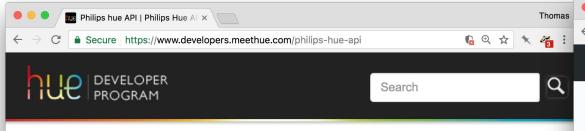
API = "How to talk to me"

SDK = "How to use the API on iOS"



Mobile

Validic Mobile is a set of libraries that enable healthcare organizations to easily integrate Bluetooth Smart devices, Apple's HealthKit, Samsung's S Health, and VitalSnap into their existing iOS and Android mobile applications. Data acquired from Validic Mobile is then made available to clients via the Validic API.



Philips hue API

Full API Documentation

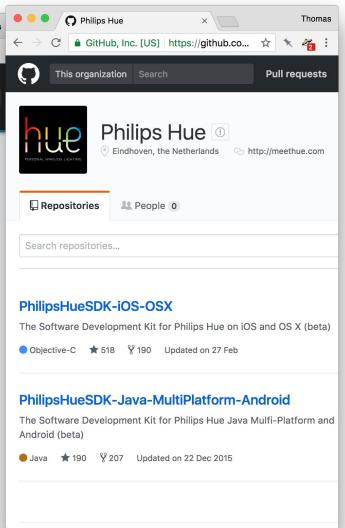
The full API documentation is only available to registered users. Please login or register to view the full API documentation and become a member of our exciting hue community. It only takes a few seconds.

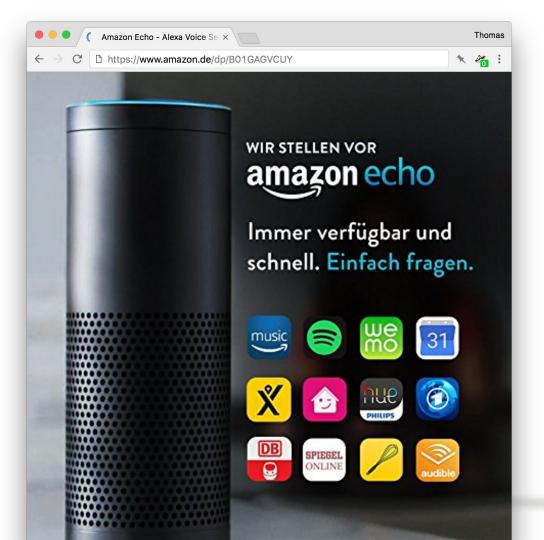
See what you can do

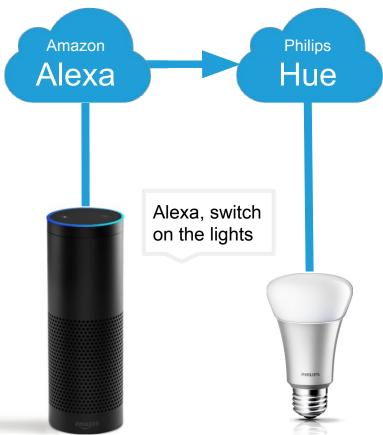
Your feedback following our hue launch was clear. You want to use light as you want it. Here we provide you some material to do so. The hue bridge has a powerful RESTful interface, which behaves like a simple web service. Use it as your tool. We hope this will help you to truly use light as you want it, by making new apps, websites and digital installations; integrating hue into something else or just playing around.

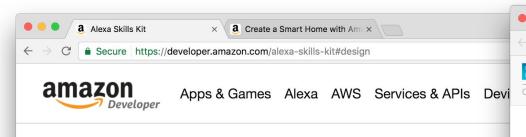
Getting started

We've started off by releasing the core parts of our bridge interface along with some easy to follow examples for how to use them. This should be enough to get you up and running controlling lights from your applications.









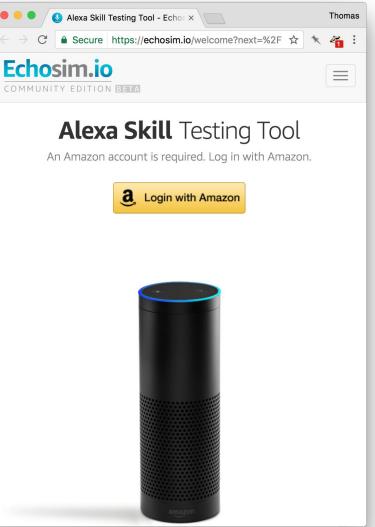
What is an Alexa skill?

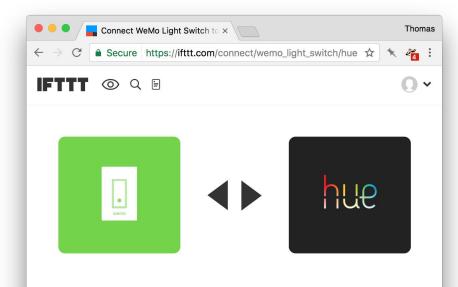
Alexa is Amazon's voice service and the brain behind millions of devices including Amazon Echo. Alexa provides capabilities, or skills, that enable customers to create a more personalized experience. There are now more than 10,000 skills from companies like Starbucks, Uber, and Capital One as well as innovative designers and developers.

What is the Alexa Skills Kit?

With the Alexa Skills Kit (ASK), designers, developers, and brands can build engaging skills and reach millions of customers. ASK is a collection of self-service APIs, tools, documentation, and code samples that makes it fast and easy for you to add skills to Alexa. With ASK, you can leverage Amazon's knowledge and pioneering work in the field of voice design.

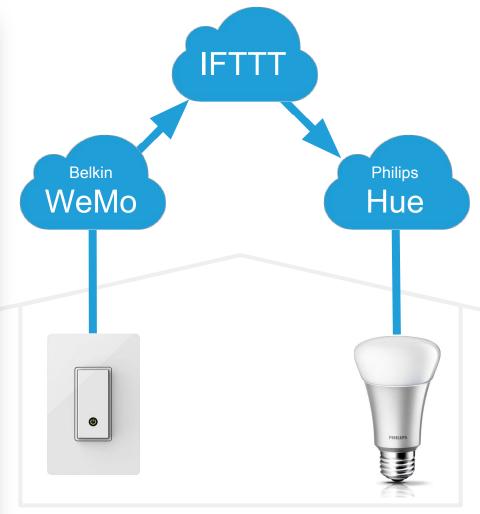
You can build and host most skills for free using Amazon Web Services (AWS). You can also apply to receive AWS promotional credits.





Connect WeMo Light Switch to Philips Hue

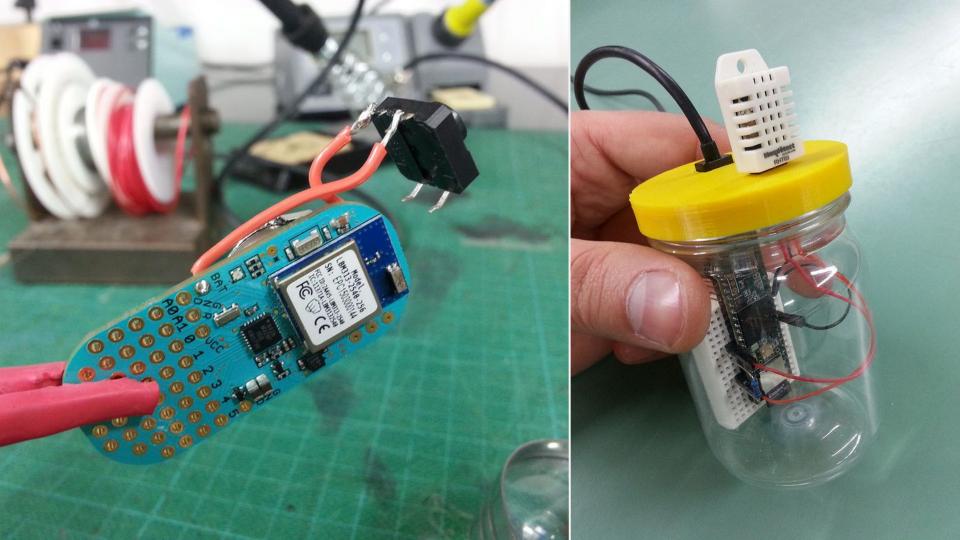


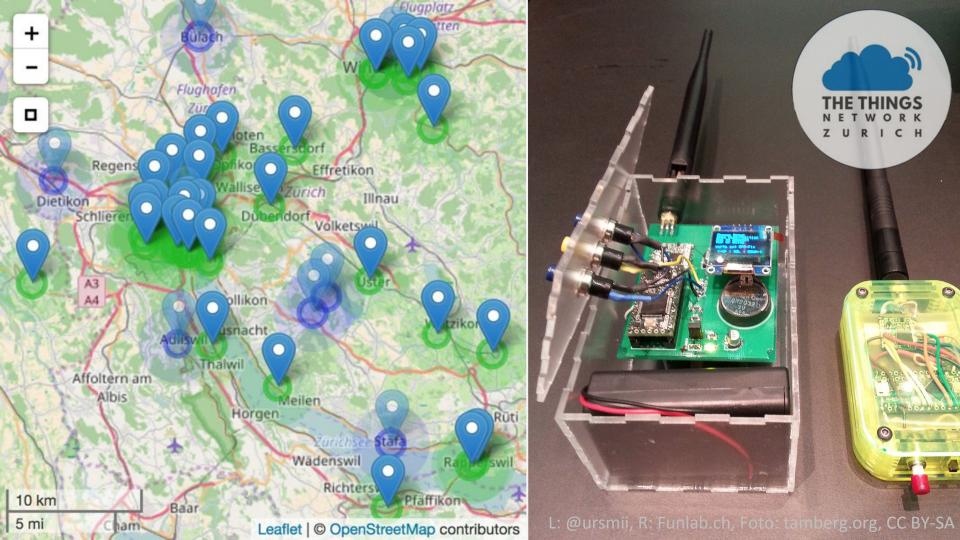


Wie startet man konkret mit IoT?

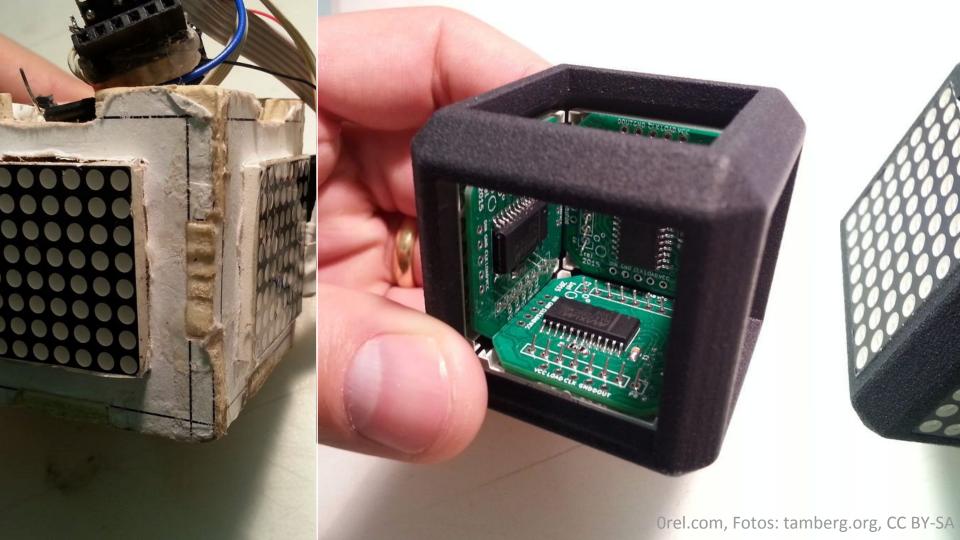
Prototyping

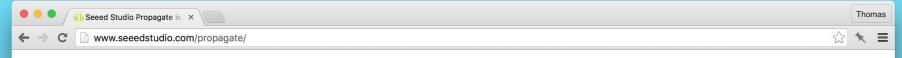














Bazaar

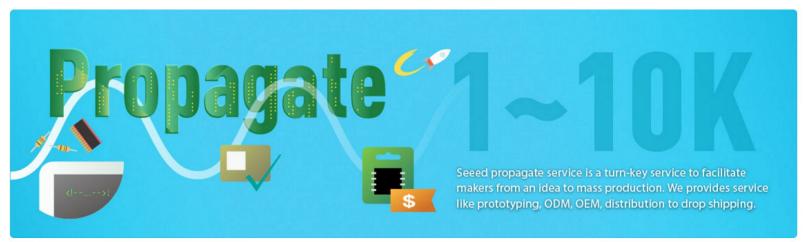
Recipe

Fusion

Propagate

Blog

Wiki





Codesign & Prototype

ODM/ Prototyping /Open Parts Library recommendation



New product integration

Design for manufacture/Engineering introduction/Testing developing and introduction



Agile manufacture

Sourcing/OPL/Project management/Quality control



Maker-Friendly Supply chain

Sales on Bazaar/Banner promotion / Distributor/Drop shipping

Wie entstehen Ökosysteme?

Offenheit



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/ ECLIPSE FOUNDATION ANNOUNCES BOSCH ...

Eclipse Foundation announces Bosch as a strategic member

Ludwigsburg, Germany – November 3, 2015 – The Eclipse Foundation is pleased to announce that Bosch has become a strategic member of the Eclipse Foundation. Bosch has been a long-term solutions member of the Eclipse Foundation and is actively participating in the Eclipse Automotive Working Group and the Eclipse Internet of Things (IoT) Working Group. As a new strategic member, Bosch will now have a representative on the Eclipse Board of Directors and will be leading a number of open source projects at Eclipse. More than 10,000 Bosch engineers use the Eclipse Integrated Development Environment (IDE).

Bosch is a €49 billion global industrial corporation that provides technology and services for industries such as Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. The company is one of the largest suppliers of automotive components and is a leader in the emerging industrial IoT industry.

Bosch's involvement in the Eclipse community includes

- · Participating in the Eclipse IoT and Eclipse Automotive Working Groups.
- Leading the Eclipse Vorto project, an IoT tool that allows for the creation and management of information models that describe IoT devices.



Software Innovations

"Only those companies will succeed in the IoT that are able to collaborate in ecosystems. Only ecosystems provide the strategic basis for open platforms and interoperability."

Dr. Rainer Kallenbach, CEO



Our Vision

Smart Home adoption will only gain momentum if the different devices can be connected into over-arching use cases, but currently the market for Smart Home systems and IoT gadgets is heavily fragmented. While there are a couple of companies big enough to establish their own proprietary ecosystems, we believe that Open Source is the only viable option to provide truly open platforms without vendor lock-ins.



Thomas

Many devices, one Home Base – it's app to you.

Easy operation via radio frequency and the Internet



QIVICON lets you bring together multiple Smart Home devices from different brands on one single platform. Not only can you easily and reliably control, monitor and automate the functions of different brands and devices, you can even combine them. Quick and easy via Smartphone, tablet or PC.



Choose an open source license

Which of the following best describes your situation?



I want it simple and permissive.

The MIT License is a permissive license that is short and to the point. It lets people do anything they want with your code as long as they provide attribution back to you and don't hold vou liable.

jQuery, .NET Core, and



I'm concerned about patents.

The Apache License 2.0 is a permissive license similar to the MIT License, but also provides an express grant of patent rights from contributors to users.

Android, Apache, and Swift use the Apache License 2.0.



I care about sharing improvements.

The GNU GPLv3 is a copyleft license that requires anyone who distributes your code or a derivative work to make the source available under the same terms, and also provides an express grant of patent rights from contributors to users



License Features

Your choices on this panel will update the other panels on this page.

Allow adaptations of your work to be shared?

Yes	No



Yes, as long as others share alike

Allow commercial uses of your work?



Selected License

Attribution-ShareAlike 4.0 International







× \



News

Manifest

Anlässe

Organisation

Vorstand

Mitglied werden

Kontakt

FR / DE

Suche



Daten öffentlich, frei verfügbar und nutzbar zu machen für mehr Transparenz, Innovation und Effizienz - das ist Open Data.

Opendata.ch ist die Schweizer Sektion der Open Knowledge Foundation. Wir entwickeln Positionen und Projekte und tragen sie in die Medien.

Öffnung von Daten als Rohstoff für digitale Gesellschaft & Wirtschaft

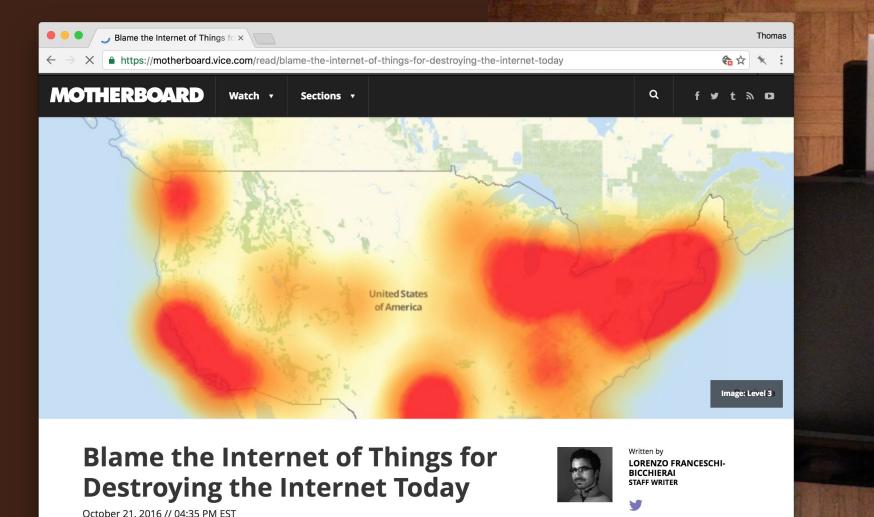
murielstaub | 22. Mrz 2017 | in Allgemein, Bern, Daten, National | 0 Comments

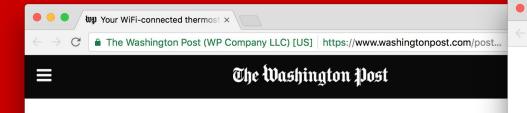
Der Bundesrat hat an seiner heutigen Sitzung übergeordnete Ziele bzgl. seiner Datenpolitik definiert und die Bundesverwaltung beauftragt, erste Eckwerte einer Datenpolitik zu entwerfen.

Im Rahmen einer Aussprache hat der Bundesrat folgende übergeordnete Ziele für eine kohärente und zukunftsorientierte Datenpolitik der Schweiz definiert: Förderung der Standortattraktivität für die Wertschöpfung durch Daten in der Schweiz, Schaffung von modernen Rechtsgrundlagen für den Umgang mit Daten, Öffnung von Datenbeständen als Rohstoff für die digitale Gesellschaft und Wirtschaft. Die Medienmitteilung steht hier zur Verfügung.

Wie bleiben Daten sicher?

Security





PostEverything

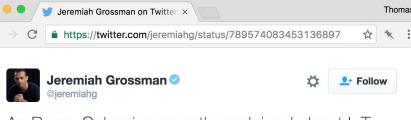
Your WiFi-connected thermostat can take down the whole Internet. We need new regulations.

The government has to get involved in the "Internet of Things."



By Bruce Schneier November 3 Follow @schneierblog

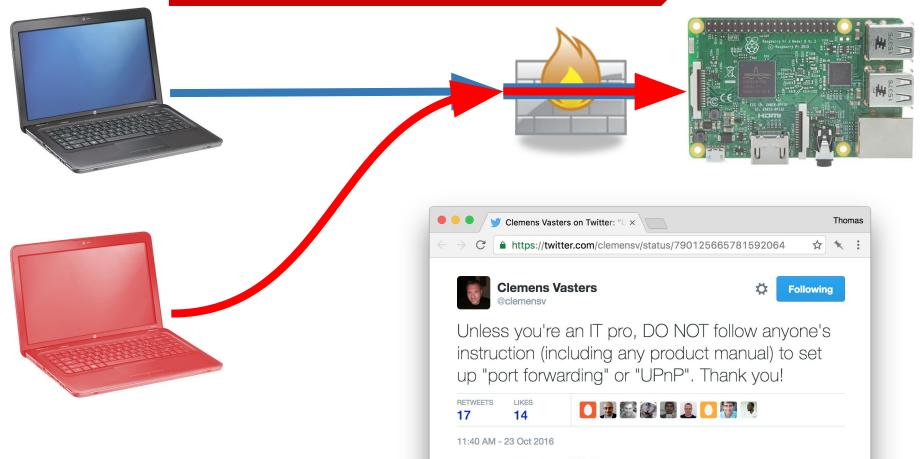
Bruce Schneier is a security technologist and a lecturer at the Kennedy School of Government at Harvard University. His latest book is "Data and Goliath: The Hidden Battles to Collect Your Data and Control Your World."



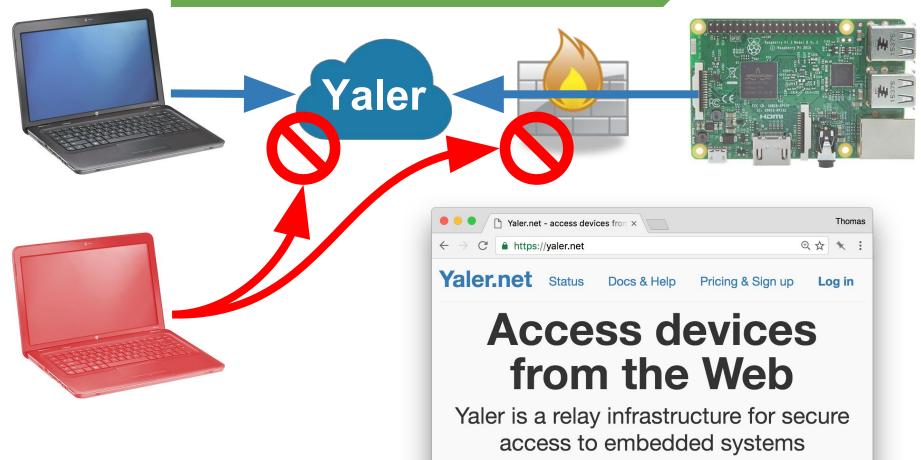
As Bruce Schneier recently explained about IoTdevice security, "The market can't fix this because neither the buyer nor the seller cares."

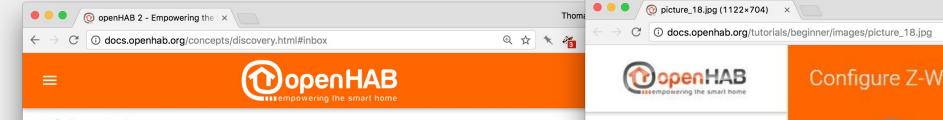


Fernzugriff via Port Forwarding



Sicherer Fernzugriff via Relay





Thing Discovery

a smart home solution.

Many devices, technologies and systems can be automatically discovered on the network or browsed through some API. It therefore makes a lot of sense to use these features for

In Eclipse SmartHome bindings therefore implement *Discovery Services* for things, which provide *Discovery Results*. All *Discovery Results* are regarded as suggestions to the user and are put into the *inbox*.

Inbox 🖘

The inbox holds a list of all discovered things (**DiscoveryResult**) from all active discovery services. A discovery result represents a discovered thing of a specific thing type, that could be instantiated as a thing. The result usually contains properties that identify the discovered things further like IP address or a serial number. Each discovery result also has a timestamp when it was added to or updated in the inbox and it may also contain a time to live, indicating the time after which it is be automatically removed from the inbox.













Z-Wave Serial C

Thing ID 6e308949

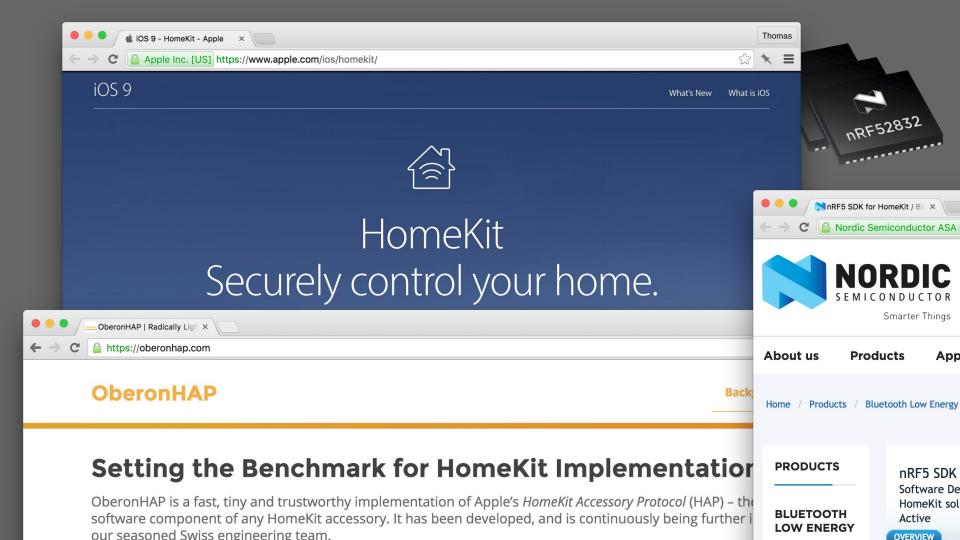
Location



Configure paran

Port Configuration

/dev/ttyACM0



Wer sieht meine Daten?

Privacy

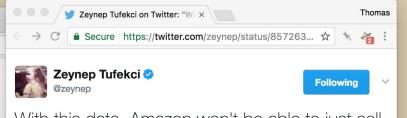


HANDS-FREE CAMERA AND STYLE ASSISTANT

With Echo Look, you can take full-length photos of your daily look using just your voice. The built-in LED lighting and depth-sensing camera let you blur the background to make your outfits pop, giving you clean, shareable photos. Get a live view in the Echo Look app or ask Alexa to take a short video so you can see yourself from every angle. View recommendations based on your daily look and use Style Check for a second opinion on what looks best. And, because Alexa is built in the cloud, she's always getting smarter—and so will Echo Look.

"Alexa, take a picture."

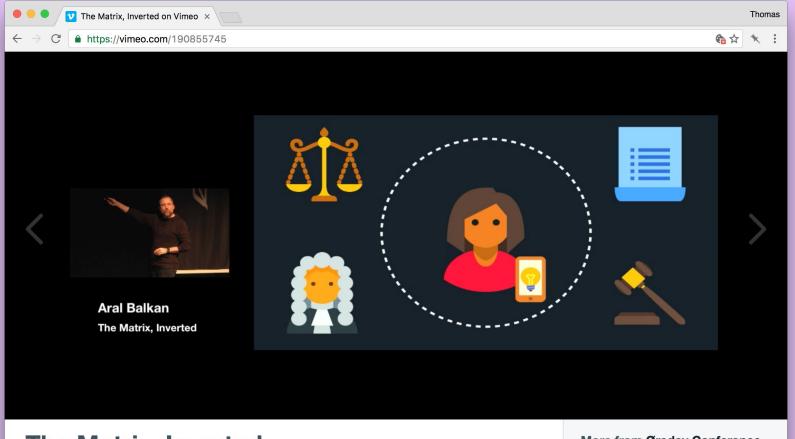
"Alexa, take a video."



With this data, Amazon won't be able to just sell you clothes or judge you. It could analyze if you're depressed or pregnant and much else.







The Matrix, Inverted

from Øredev Conference PRO 5 days ago more





More from Øredev Conference

Autoplay next video



The Matrix, Inverted

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CITIZEN OWNED

Copies of personal data are stored in citizenowned and citizen-controlled MIDATA cooperatives. Members profit from data analysis, visualization and interpretation tools. In this way, members will increasingly be able to take control over their own health.



NOT FOR PROFIT

In the same way that blood banks and citizen science platforms work best when no financial incentives are offered, MIDATA cooperatives are not-for-profit. Revenues will be reinvested into services on the platform and into research projects for the benefit of society.



OPEN SOURCE

MIDATA cooperatives offer an innovation platform (APIs) for third parties by providing a secure sandbox in which to develop data analytics and visualization services on members' data without having to establish their own data storage environment.



TRANSPARENT

Transparency is ensured by the fact that the governance principles of MIDATA cooperatives are public. Members are informed and can participate in decision making processes. They can also withdraw their personal data at anytime.



SECURE

Data are multiply encrypted and only the members possess the key to their data. Every data access is logged. Secure citizen-controlled data access across different national cooperatives will be established to permit global research projects and

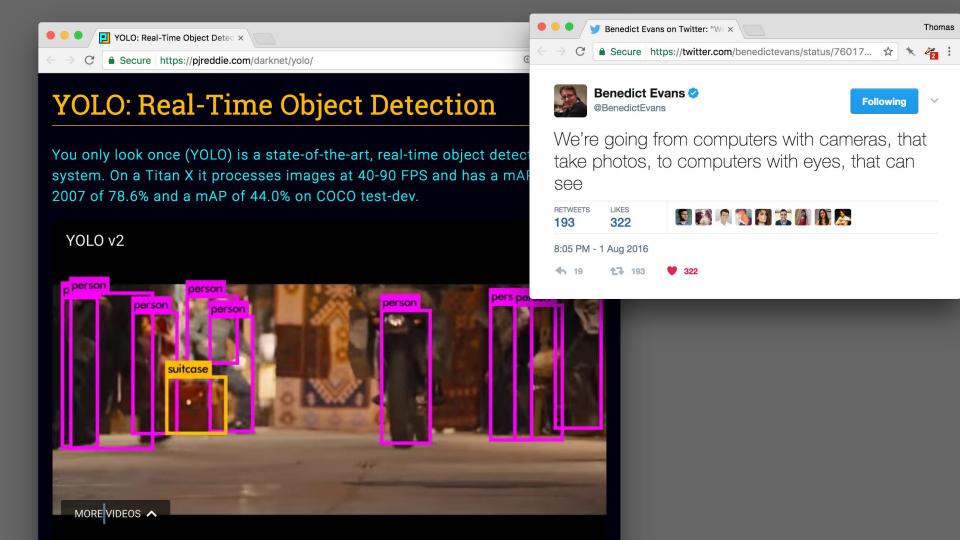


REGIONAL

The MIDATA model enables the construction of regional/national cooperatives which, by a set of common rules, permit global research projects to be set up and carried out in a fair and democratic manner.

Wie geht's weiter?

Zukunft







Thomas

AutoX Has Built a Self-Driving Car That Navigates with a Bunch of \$50 Webcams

Startup wants to make autonomous vehicles cheap enough for everyone to use.

by Rachel Metz March 28, 2017



While companies like Uber and Google build self-driving cars replete with pricey sensors, Jianxiong Xiao is doing the same thing with some \$50 mohaama

(Permit holders are listed by the date the permit was issued)

■ Secure https://www.dmv.ca.gov/portal/dmv/detail/vehindustry/ol/auton...

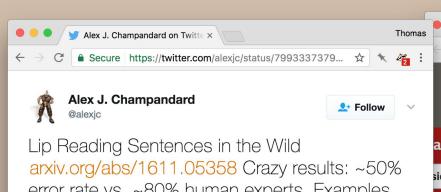
Application Requirements for A X

- · Volkswagen Group of America
- Mercedes Benz
- Google
- Delphi Automotive
- Tesla Motors
- Bosch
- Nissan
- GM Cruise LLC
- **BMW**
- Honda
- Ford
- Zoox Inc.
- Drive ai Inc. Faraday & Future Inc.
- Baidu USA LLC
- Wheego Electric Cars Inc.
- Valeo North America, Inc.
- NextEV USA, Inc.
- Telenay, Inc.
- **NVIDIA Corporation**
- AutoX Technologies Inc
- Subaru
- Udacity, Inc.
- Navya Inc.
- Renovo Motors Inc
- UATC LLC (Uber)
- PlusAi Inc
- Nuro, Inc.
- CarOne LLC
- · Apple Inc.

- Autonomous Vehicle Tester Program
- Autonomous Vehicle Deployment Permit -Coming Soon
- Dealer
- Dismantler
- Distributor
- Driving School Driving School
 - Owner
 - Driving School Operator
 - Instructor

Driving

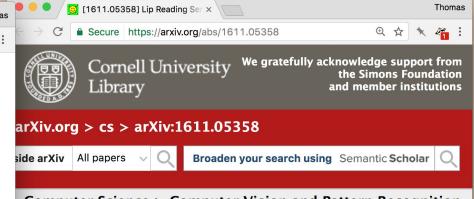
- Independent Driving
- Instructor Employer Testing
- Program
- Ignition Interlock **Device Program**
- Lessor-Retailer
- Manufacturer Mature Driver
- Program
- · Registration Service
- Remanufacturer
- Representative Salesperson
- Traffic Violator
 - School
 - Traffic Violator



error rate vs. ~80% human experts. Examples from BBC News:







Computer Science > Computer Vision and Pattern Recognition

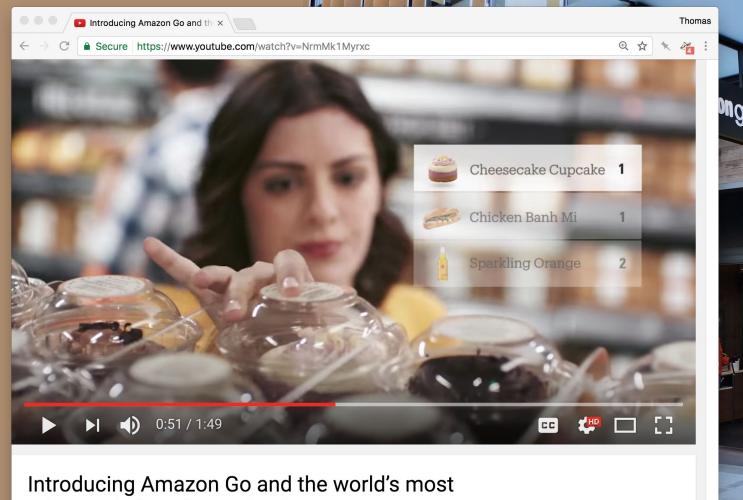
Lip Reading Sentences in the Wild

Joon Son Chung, Andrew Senior, Oriol Vinyals, Andrew Zisserman

(Submitted on 16 Nov 2016 (v1), last revised 30 Jan 2017 (this version, v2))

The goal of this work is to recognise phrases and sentences being spoken by a talking face, with or without the audio. Unlike previous works that have focussed on recognising a limited number of words or phrases, we tackle lip reading as an openworld problem - unconstrained natural language sentences, and in the wild videos.

Our key contributions are: (1) a 'Watch, Listen, Attend and Spell' (WLAS) network that learns to transcribe videos of mouth motion to characters; (2) a curriculum learning strategy to accelerate training and to reduce overfitting; (3) a 'Lip Reading Sentences' (LRS) dataset for visual speech recognition, consisting of over 100,000 natural sentences from British television.



advanced shopping technology





more than 20 people are in it theverge.com/2017/3/27/1507



RETWEETS 283

LIKES 398 



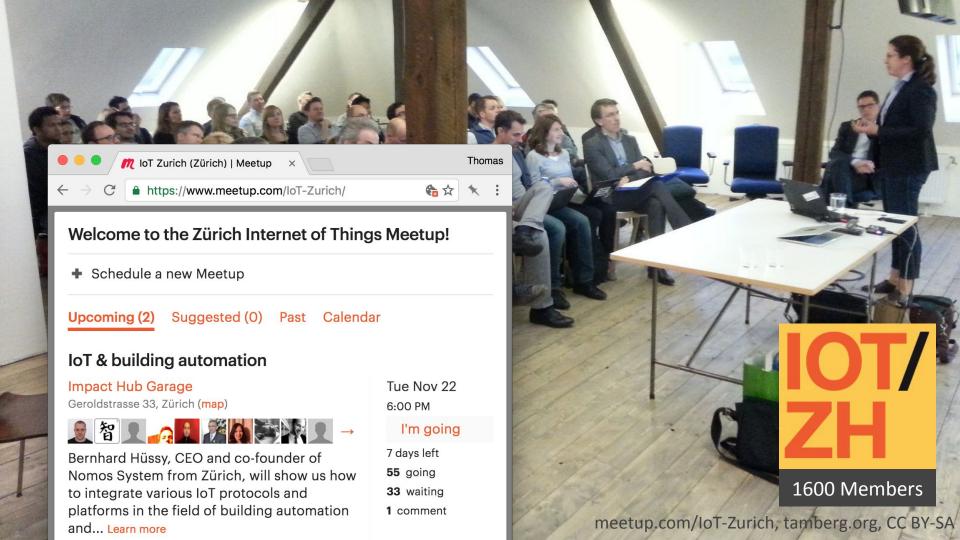




1:38 PM - 2 Apr 2017









IoT für KMU

thomas.amberg@yaler.net twitter.com/tamberg



Slides: www.tamberg.org →