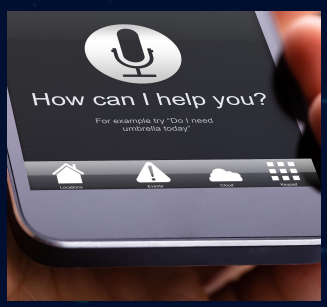
OPNTEC

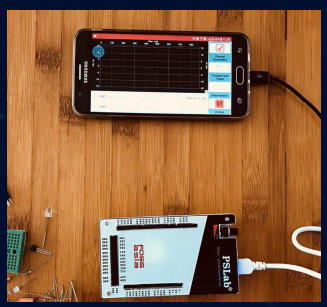
The Future of Technology is Open

Artificial Intelligence
Internet of Things

AI: Voice Assistants



IoT: Pocket Science Lab



BIZ: Ubiquitous Open Source Places Companies at an Advantage

EVENT SOLUTION: Saving Costs with Running Virtual Events with eventyay

MACHINE LEARNING: Using AI library scikit-learn with Python

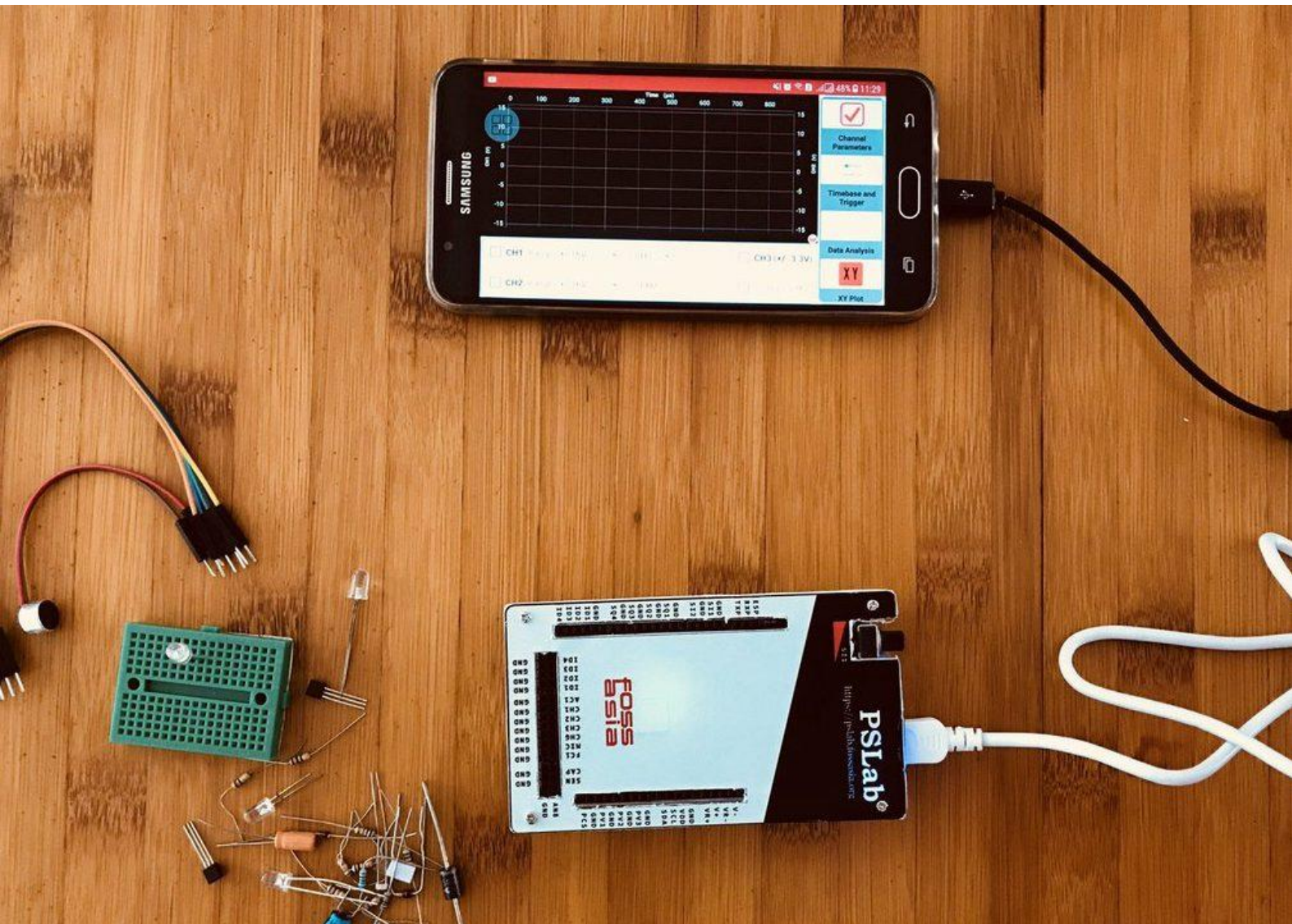
Open Source Software and Open Hardware for a Sustainable World

The Approach of OPNTEC

We develop our products as open source. This development approach brings many advantages. Open access to source code and documentation allow everyone to collaborate to improve products and to add features. Experts can review applications and help to discover bugs. The open source model enables everyone to learn about the technologies of our products and adapt it for their own use cases. Even after official support of products has ended developers can fix software and hardware and ensure a long life of products saving the environment, avoiding waste and creating a sustainable world.

Collect environmental data, control robots and make music with the Pocket Science Lab or set it up for automation processes

Use the Pocket Science Lab at home or for industry applications. With the Pocket Science Lab hardware we enable everyone from consumers to industry to collect measurements and data to solve global problems with science.



Internet of Things

Keysight Technologies uses the PSLab in conjunction with its OpenTap product to train customers and staff in the industry on three continents. The PSLab enables Keysight to onboard clients around the world.

The PSLab comes with a built-in **Oscilloscope, Multimeter, Wave Generator, Logic Analyzer, Power Source, Robot control** and **I²C support**. We are constantly adding more digital instruments and hardware extensions like a Spectrometer module.

With PSLab applications a phone or PC becomes like many devices in one. Deploying PSLabs in IoT platforms and networks in the industry reduces costs due to its standard compliant APIs and many available open source applications.

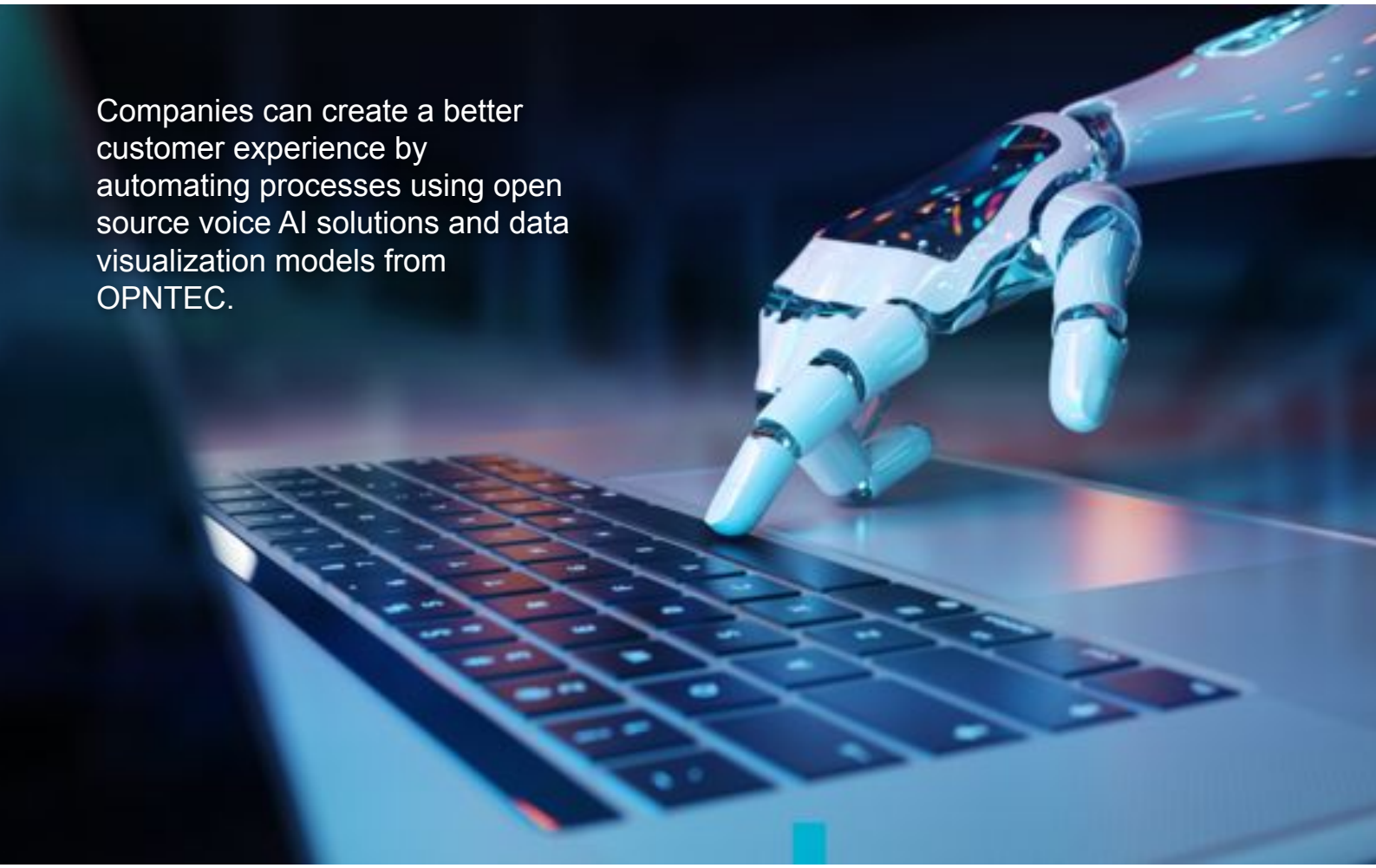
Order now at PSLab.io

The Pocket Science Lab is developed at OPNTEC in cooperation with the FOSSASIA community.

European Commission

Horizon 2020
European Union funding
for Research & Innovation

Innovate within your existing workflow, use Open Source AI and Virtual Assistants to keep data in-house



Companies can create a better customer experience by automating processes using open source voice AI solutions and data visualization models from OPNTEC.

OPNTEC custom solutions can help you to solve your most important business problems without sharing your data to external cloud providers. From **Search, to Big Data and interactive Voice Assistants** we have developed AI solutions for many use cases for years. Realize the value of collecting data with our open source IoT devices, analyze it and automate processes in-house using AI.

AI Voice Assistants

Problems with Proprietary Cloud Assistants

- Solutions cannot be transferred from one platform to another
- Platform and technology lock-in
- Provider restricted access to customers in Europe
- Incompatible solutions and technologies
- Dependent on provider terms, policy etc. (Google, Amazon, Apple)
- Vendor lock-in
- Privacy issues, no control from users
- Data is usually stored abroad
- Limited commercialisation of solution providers
- No development opportunity as data for AI training is controlled by platforms with unlimited funding

Advantages of Provider Independent Open Source Solutions

- Open Industry Standards
- Technology/API compatibility across providers
- Ability to run locally without cloud
- User control of data sharing
- Common implementation definitions for security of banking, payment, health data etc.
- Use of open source libraries
- Federated data infrastructure framework
- The next area for assistants for industrial IoT and AI must be open for SMEs

OPNTEC

IoT Products and Services

IoT Software Development

Our software development team creates IoT solutions with a new customer experience and a secure & highly functional end-to-end services. We develop all software components from the firmware to web and Android apps. Popular components include our Python libraries that can easily be integrated in existing in-house solutions.

IoT Hardware Development

To provide flexible and secure IoT solutions our hardware engineering team collaborates with partners and the open source community around the world.

IoT Home Automation

IoT home automation is the ability to control domestic appliances by electronically controlled, internet-connected systems. Users are able to control heating and lighting systems, set alarms and home security controls. We develop and deploy secure open source solutions for control hubs.

IoT Machine Monitoring

OPNTEC provides solutions for IoT machine monitoring based on open source. Effectively meet your product deliveries. Understand the real-time status of your factories and machines, and diagnose performance issues. Apply predictive analytics to the health of your factory, products, and machines, to get recommendations and take action.

Industrial IoT

The Industrial Internet of Things (IIoT) takes networked sensors and intelligent devices and puts those technologies to use directly on the manufacturing floor, collecting data to drive artificial intelligence and predictive analytics.

Digital Twin of the Product and the Process

We provide business consultancy and solutions around two main megatrends: Digital Twin of the Product and Digital Twin of the Process.

Digital Factories

Digital factories with open source IoT solutions have large potential to create your success in the next level of technological development. Process integration from R&D, to product management, sales, production, and service can be automated on a new degree.

Prototype and Production Runs

A prototype is the first, crucial step to building an Internet of Things product. The purpose of building a prototype of your IoT product is manifold: to test the concept with your target audience, to check that the technical requirements match your expectations, and ultimately to validate your business case. OPNTEC supports you from development to large production runs.

OPNTEC

AI Services and Solutions

AI Image Recognition

Turn our AI research into your organization's value with image recognition technology and data visualizations using tools developed in cooperation with OPNTEC like Visdom. More than 3000 projects on Github integrate this project. Talk to us to learn more.

AI Speech Recognition

Our industry-specific AI solutions meet scalable vertical needs. We provide customized solutions for voice recognition using Open Source tools developed with our team.

Machine Learning

Years of experience in machine learning provide us with the foundation for supporting a wide variety of customers. We implement ML algorithms that can learn from your data, identify patterns and make decisions.

AI Robotic Process Automation

Collect data with our IoT technologies across your organisation and use AI to automate processes in you production facilities and logistics operations. Robotic Process Automation (RPA), cognitive and artificial intelligence are making business processes smarter and more efficient.

AI Virtual Assistants

An intelligent virtual voice assistant (IVA) is a software agent that can perform tasks or services based on commands or questions. Virtual assistants are able to interpret human speech and respond via synthesized voices. Users can ask their assistants questions, control home automation devices and media playback via voice, and manage other basic tasks such as email, to-do lists, and calendars with verbal commands. OPNTEC implements voice assistants using its in-house open source components.

Big Data Automation

Big data automation is growing as a need for almost every organization, with the IoT driving the stream velocity of data. While users require fast availability of data for analysis, the true value of data can only be extracted and managed via intelligent and advanced data automation.

Industrial Artificial Intelligence

Industrial AI refers to the application of artificial intelligence to industry. It is concerned with the application of technologies to address industrial pain-points for customer value creation, productivity improvement, cost reduction, site optimization, predictive analysis and insight discovery.

Operational Artificial Intelligence

Operational AI, is a type of intelligent system designed for real-world applications at commercial scale.

Edge Computing

Edge computing is a distributed computing paradigm that brings computation and data storage closer to the location where it is needed to improve response times and save bandwidth. Edge application services reduce the volumes of data that must be moved, the consequent traffic, and the distance that data must travel. That provides lower latency and reduces transmission costs. Computation offloading for real-time applications, such as facial recognition algorithms, show considerable improvements in response times. Other notable areas for applications are cloud gaming, connected cars, autonomous cars, smart cities, Industry 4.0, and home automation systems.

Natural Language Processing

Natural language processing (NLP) is a field of linguistics, computer science, and artificial intelligence concerned with the interactions between computers and human language, in particular how to program computers to process and analyze large amounts of natural language data. The result is a computer capable of "understanding" the contents of documents, including the contextual nuances of the language within them. The technology can then accurately extract information and insights contained in the documents as well as categorize and organize the documents themselves.

We believe in global collaboration and a future with open technologies. Let's realize it!

You know that you found your dream when you have a desire to achieve a goal, have the gut to pursue it, have the courage to overcome any obstacles on your path and feel blessed when finally realizing it. Dream on, keep up and make it pay off.

2007

The Foundation of OPNTEC

Before starting his first company Mario Behling as the founder of OPNTEC worked with his friends on setting up wireless mesh networks in Berlin and other European cities. His passion to connect people with each other led him to far away places and even to Afghanistan. In Kabul and Jallalabad he helped to setup networks and distribute the XO laptop of the One Laptop per Child project.

2009

OPNTEC's Predecessor

After successful projects with the EU FOSS-Bridge project Mario founds MBM as the predecessor company of OPNTEC in Vietnam. Together with a team of 25 engineers he delivers open source IoT solutions and customized Linux systems for data centers and offices of telecom providers in Vietnam and Europe. At the same time he co-starts the FOSSASIA community and annual summit.

2015

Office Opening in Singapore

The company has a turning point in 2015 when the political situation in Vietnam tightens and Internet based businesses become increasingly difficult. After opening an initial office Mario moves his operations entirely to Singapore and focuses on developing big data services that culminate into early prototypes of AI voice assistants. The FOSSASIA Summit is also organized from here-on in Singapore.

2018

Berlin Opening

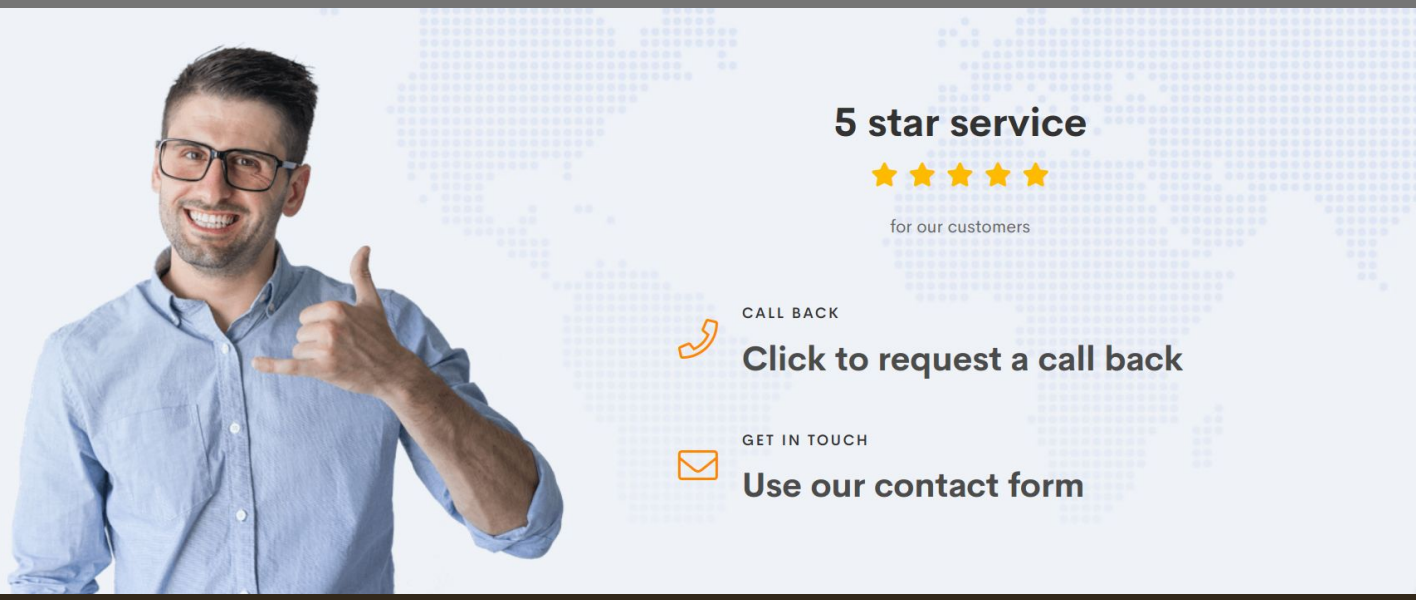
With an increasing number of clients in Europe, operations are merged under the newly incorporated German OPNTEC GmbH. The goal of OPNTEC is to combine IoT product services and AI solutions development in one company in order to expand the activities. Customers include Daimler, KI Group, and UNESCO.

2020

OPNTEC Joins Industry Consortium to Develop Open Hardware

In 2019 OPNTEC is invited to participate in the Horizon 2020 program by the Technische Universität Berlin to develop Open Hardware consumer devices. A focus in the program is to develop the Pocket Science Lab into a consumer product with a large market potential.

Contact Us



OPNTEC

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