Como Tornar os **Edifícios Inteligentes** de Forma Sustentável, Comportável e Escalável

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PTPC: Edifícios Energeticamente Eficientes
18/01/2023
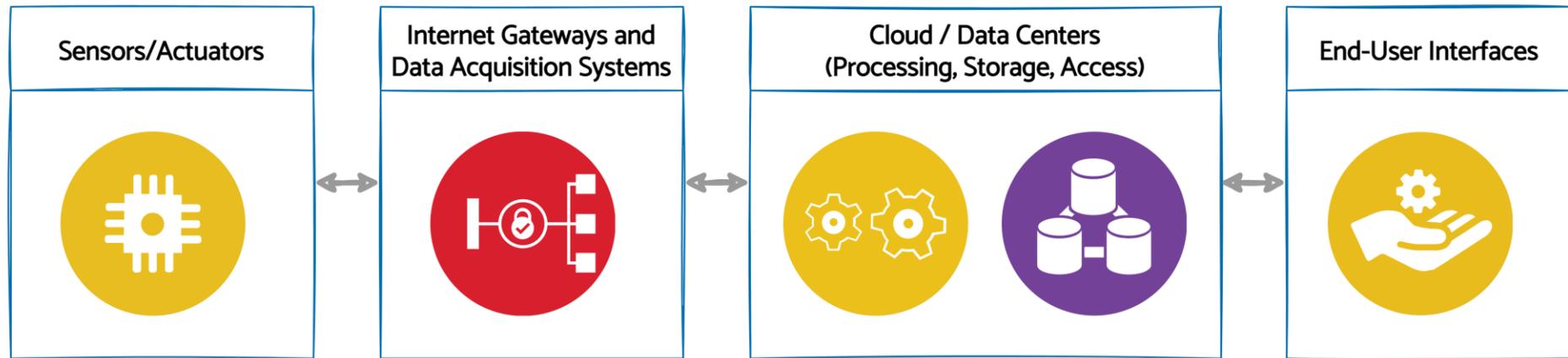
João Pedro Dias

Software Engineering Specialist @ BUILT CoLAB
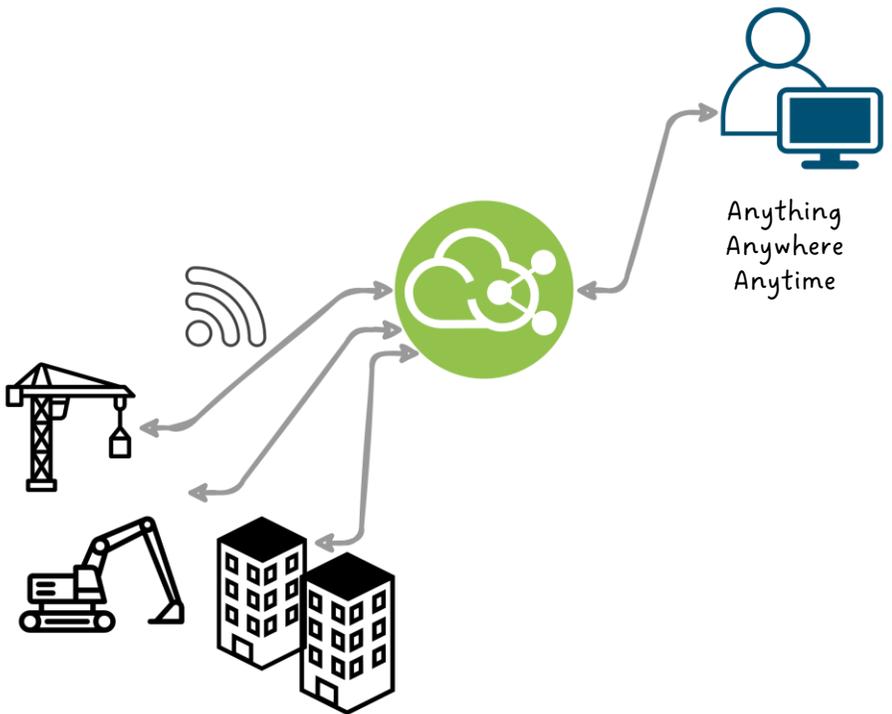Invited Assistant Professor @ FEUP

BUILTCOLAB
DIGITAL BUILT ENVIRONMENT

Desmistificando *Buzzwords*: Internet-of-Things, Cyber-physical Systems, Smart Home, …

| Sensors/Actuators | Internet Gateways and Data Acquisition Systems | Cloud / Data Centers (Processing, Storage, Access) | End-User Interfaces |

Data Flow →

← Control Flow

Monitorização

Recipe

if this then that

Trigger

Action

Real-world events
(sensors and human
inputs)

Rules Engine

Real-world Devices
(environment)
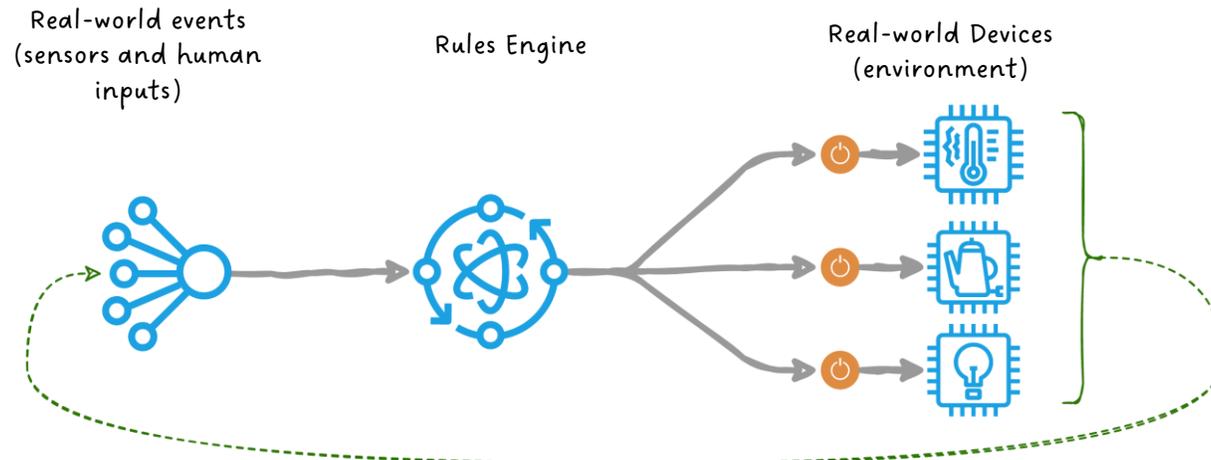
Retrofit vs. *New* (Sustentável) —

Legacy SCADA
System

(remote add-on
com custos
elevados)

Custom-made
Python Script
(data exporter)

Integração direta com
serviços existentes
(apenas monitorização)

Unidade HVAC existente
apenas com controlo via
comando IR

Replicação dos comandos
IR de controlo do HVAC
com um dispositivo feito
in-house (~10€ hardware)

Integração direta com
serviços existentes mas
apenas em modo controlo
(sem monitorização)

Porta com controlo
apenas via chave
(difícil gestão de acessos)

Aquisição de dispositivo
pronto a usar de
controlo de acessos

Utilidade vs. Incômodo (Comportável)

- Controlo Remoto e Ajuste em Tempo-Real
- Monitorização e Gestão Remota
- Segurança Operacional (Alertas)
- Manutenção Preditiva
- Automatização de Tarefas
- Suporte à Decisão (data-driven)

vs.

WIRED — SIGN IN

Controlling My Family's Smart Home Is Driving Us Mad

The smart home was supposed to make our lives easier, but errant light switches and too many apps are frustrating. There must be a better way.

REUTERS — World Business Legal Markets Breakingviews Technology Investigations

1 minute read · February 8, 2022 9:49 AM GMT · Last Updated a year ago

Vodafone Portugal hit by hackers, says no client data breach

BBC — Sign in — Home News Sport Reel Worklife

NEWS

AWS: Amazon web outage breaks vacuums and doorbells

26 November 2020

PEN TEST PARTNERS — Security consulting and testing services — About Services Events

BLOG: INTERNET OF THINGS

Thermostat Ransomware: a lesson in IoT security

Hacker News — new | threads | past | comments | ask | show | jobs | submit

▲ Google IoT Core will be discontinued on Aug. 16, 2023
215 points by borner791 5 months ago | hide | past | favorite | 161 comments

Your current IoT Core Services will remain available through August 15, 2023.

MotorBiscuit — MENU

HOME / TRUCKS & SUVS

People Are Hacking John Deere Tractors: Right-to-Repair War Continues

by Amanda Cline | More Articles: Trucks & SUVs
Published on August 17, 2022 | Comments (0)

Uma Questão de Escala: casas, fábricas, obras,…

Semantics

Services

Computation

Communication

Sensing

Identification

Reasons for Proof-of-Concept Failure
Microsoft IoT Signals Report, Edition 3, October 2021

Scaling	High cost of scaling	32%
Technology	Lack of necessary technology	26%
Business	Pilots demonstrate unclear business value/ROI	25%
Complexity	Too many platforms to test	24%
Complexity	Pilot takes too long to deploy	23%
Scaling	Lack of resources/knowledge to scale	23%
Business	Hard to justify business case w/o short-term impact	23%
Complexity	Too many use cases to prove out	23%
Business	Lack of leadership support and attention	21%
Business	No clear strategy	21%
Scaling	Lack of trust in scalability platforms	20%
Business	Didn't anticipate necessary business changes	19%
Vendors	Vendors not willing to subsidize pilots	16%

Cvar N, Trilar J, Kos A, Volk M, Stojmenova Duh E. The Use of IoT Technology in Smart Cities and Smart Villages: Similarities, Differences, and Future Prospects. *Sensors*. 2020; 20(14):3897

Interoperabilidade e Standards
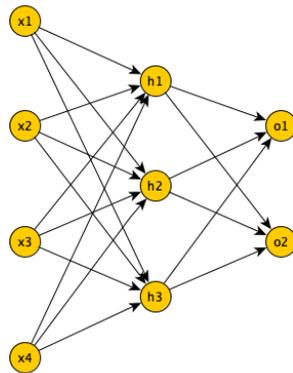
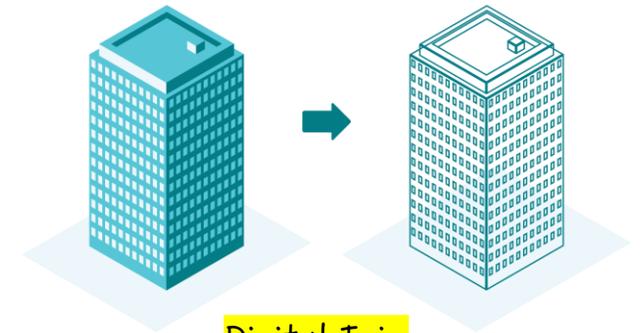Smart Grid e Green Electricity Markets

Inteligência Artificial e Machine Learning

Gestão de Ciclo de Vida e e-Waste

Digital Twin

BUILT CoLAB

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— **CONTACTOS**