

THE DEVELOPER'S  
CONFERENCE

**Tendências em arquitetura de software  
para os anos 2020's**

**Jefferson Bicca Charczuk**  
Software developer

# Muito prazer em conhecê-l@s!



## Jefferson Bicca Charczuk

Desenvolvedor desde 2004

Ciência da Computação PUCRS, 2007

Trabalhando no Serpro desde 2010

#java #javascript #typescript #microservices #tdd #ddd #blockchain

THE EVOLUTION OF

# SOFTWARE ARCHITECTURE

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## 1990's

SPAGHETTI-ORIENTED  
ARCHITECTURE  
(aka Copy & Paste)



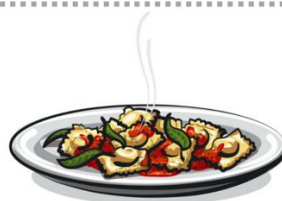
## 2000's

LASAGNA-ORIENTED  
ARCHITECTURE  
(aka Layered Monolith)



## 2010's

RAVIOLI-ORIENTED  
ARCHITECTURE  
(aka Microservices)



## WHAT'S NEXT?

PROBABLY PIZZA-ORIENTED ARCHITECTURE



90s

Data integration

DBMS Batch RPC



The background features several overlapping CD or DVD discs. The discs are rendered with a vibrant, iridescent color palette of purples, blues, and pinks, reflecting light in a way that creates a sense of depth and movement. Overlaid on the discs are various digital and geometric patterns, including thin, parallel lines and clusters of small squares, some of which are red and others blue, suggesting a data or network theme.

**SOA**  
**WS ESB BPM**

**2000s**

A collection of various USB drives and a digital scale are scattered on a light-colored wooden surface. The items include a black digital scale with a small LCD screen, several USB drives of different shapes and sizes (some with leather-like straps, some with metal casings), and a black USB drive with 'Kingston' branding. The background is a blurred wooden texture.

2010s

**Microservices**  
REST Cloud Web scale



**2020s?**

# Top 3 requisitos

O que as apps dos anos 2020's  
vão demandar?

Fonte: Feeling próprio

**Confiabilidade**  
**Integridade**  
**Segurança**



A futuristic digital background featuring a glowing blue globe with a network of nodes and connections. In the foreground, there are several blue and red pill-shaped nodes labeled 'NODE 01', 'NODE 02', 'NODE 04', 'NODE 05', 'NODE 06', 'NODE 03', and 'NODE 02'. A yellow and blue pill-shaped node is labeled 'BLOCK 01'. The overall aesthetic is high-tech and digital.

# Blockchain?

BLOCKCHAIN

# Decentralized

DApps

Shared

Cryptography

Distributed

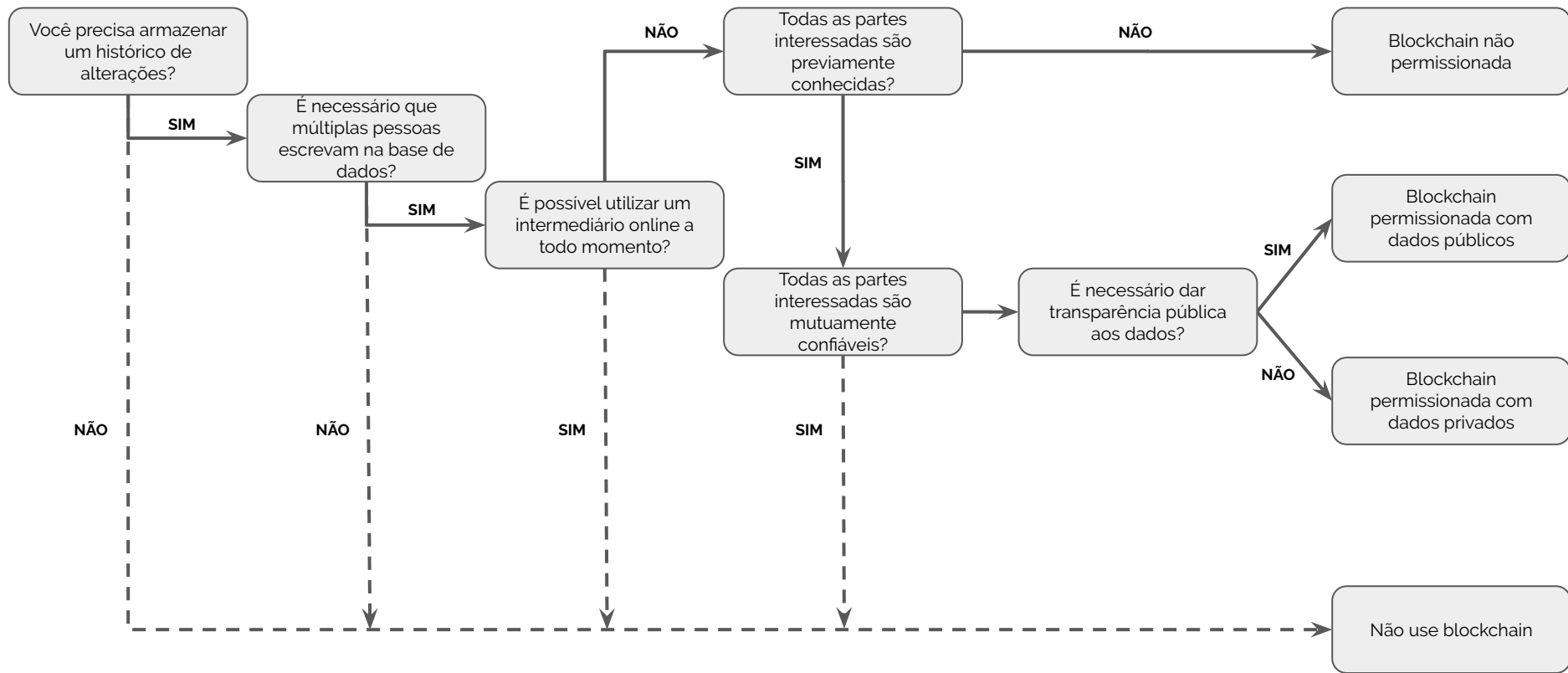
**Mas é para todas as  
situações?**

**NÃO!!!**



# Só use blockchain quando:

1. Precisa armazenar histórico
2. Múltiplas entidades escrevem dados
3. Não for possível utilizar intermediários
4. Nem todas as partes forem mutuamente confiáveis



**Aleixo, Gabriel.** Mapeamento da tecnologia Blockchain no mundo: proposta de uso para o interesse público. Fórum BlockchainGov BNDES, 2018.



# HYPERLEDGER

## Distributed Ledgers



**HYPERLEDGER**  
**BESU**

Java-based  
Ethereum client



**HYPERLEDGER**  
**BURROW**

Permissionable smart  
contract machine (EVM)



**HYPERLEDGER**  
**FABRIC**

Enterprise-grade DLT  
with privacy support



**HYPERLEDGER**  
**INDY**

Decentralized identity



**HYPERLEDGER**  
**IROHA**

Mobile application focus



**HYPERLEDGER**  
**SAWTOOTH**

Permissioned & permissionless  
support; EVM transaction family

## Libraries



**HYPERLEDGER**  
**ARIES**



**HYPERLEDGER**  
**QUILT**



**HYPERLEDGER**  
**TRANSACTION**



**HYPERLEDGER**  
**URSA**

## Tools



**HYPERLEDGER**  
**CALIPER**



**HYPERLEDGER**  
**CELLO**



**HYPERLEDGER**  
**EXPLORER**

## Domain-Specific



**HYPERLEDGER**  
**GRID**



**HYPERLEDGER**  
**LABS**



ethereum



Quorum



TRUFFLE

**c.rda**

waves 



Hedera  
Hashgraph





**E quando  
blockchain não  
for aplicável?**



# Service mesh?

# “Serverless”?



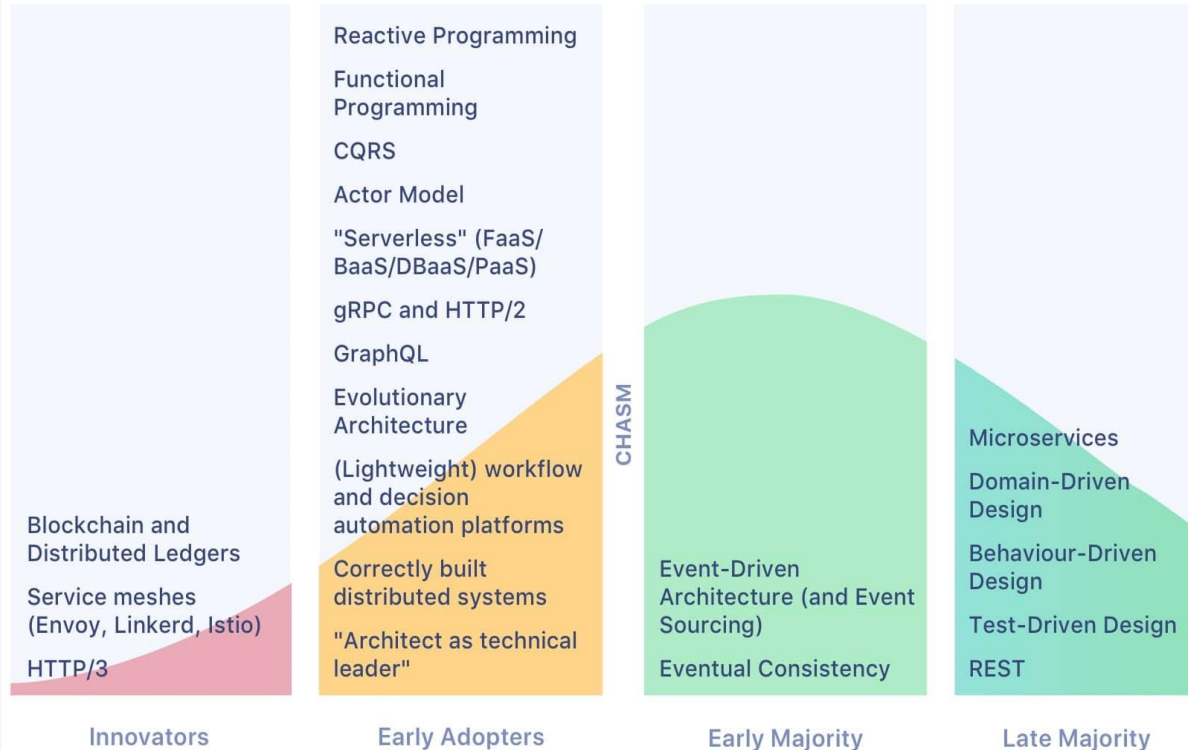
#thuglife?





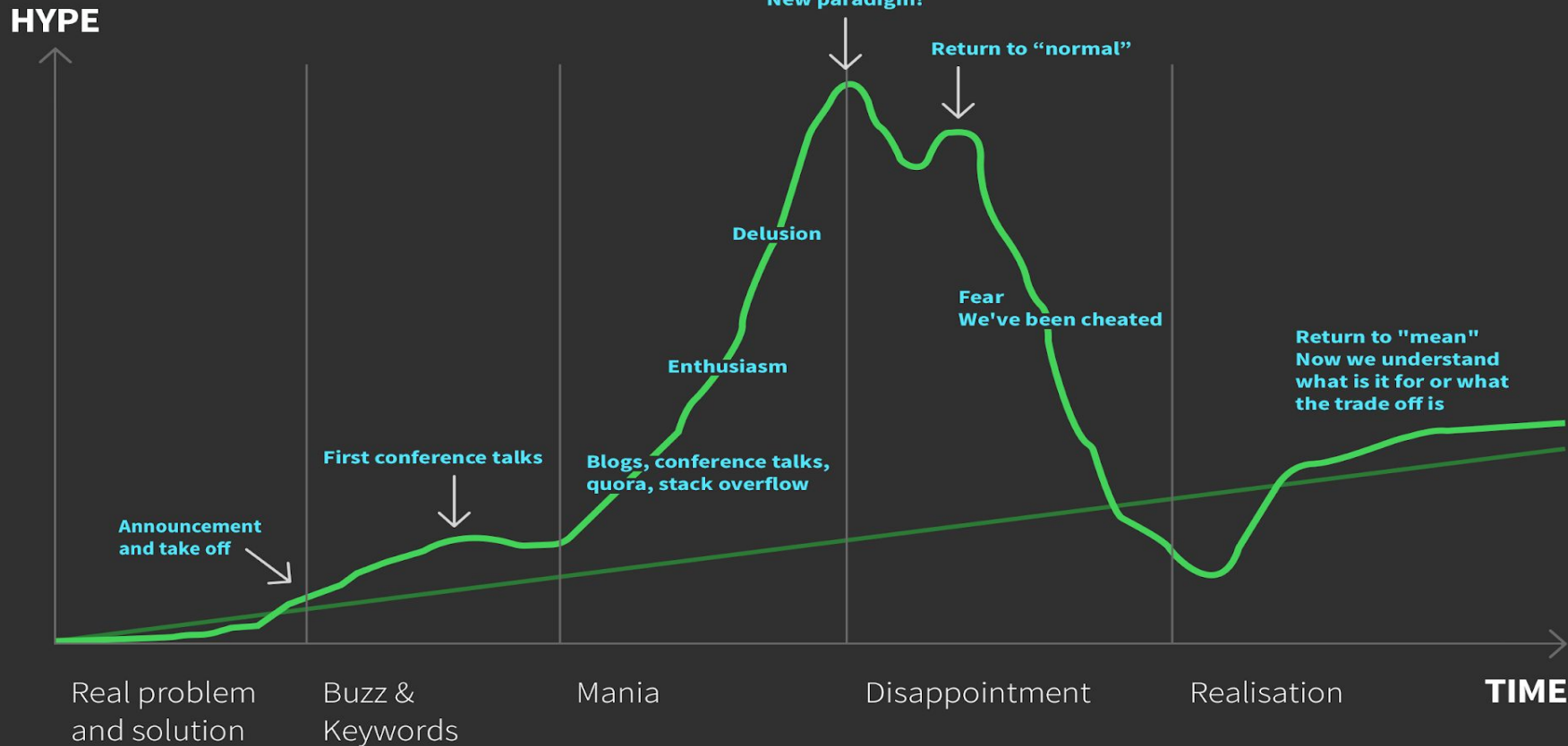
## Software Development Architecture and Design 2019 Q1 Graph

<http://infoq.link/architecture-trends-2019>



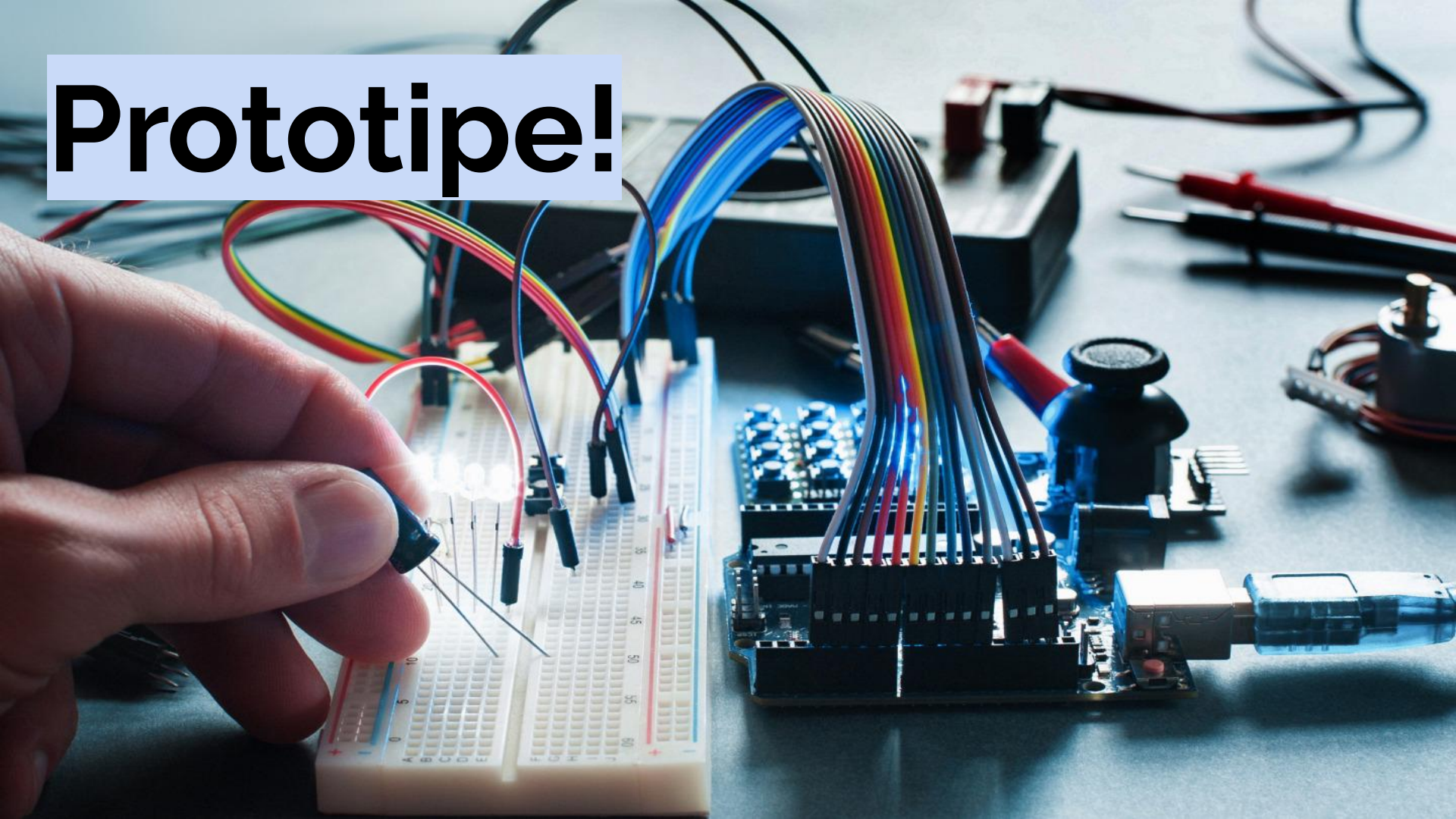
**CUIDADO!!!**

# Hype Driven Development





# Prototype!





**E você?**

# Obrigado!

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