Crafting Intelligent Cloud Native Applications with Quarkus

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Kubernetes Community Days
Zürich

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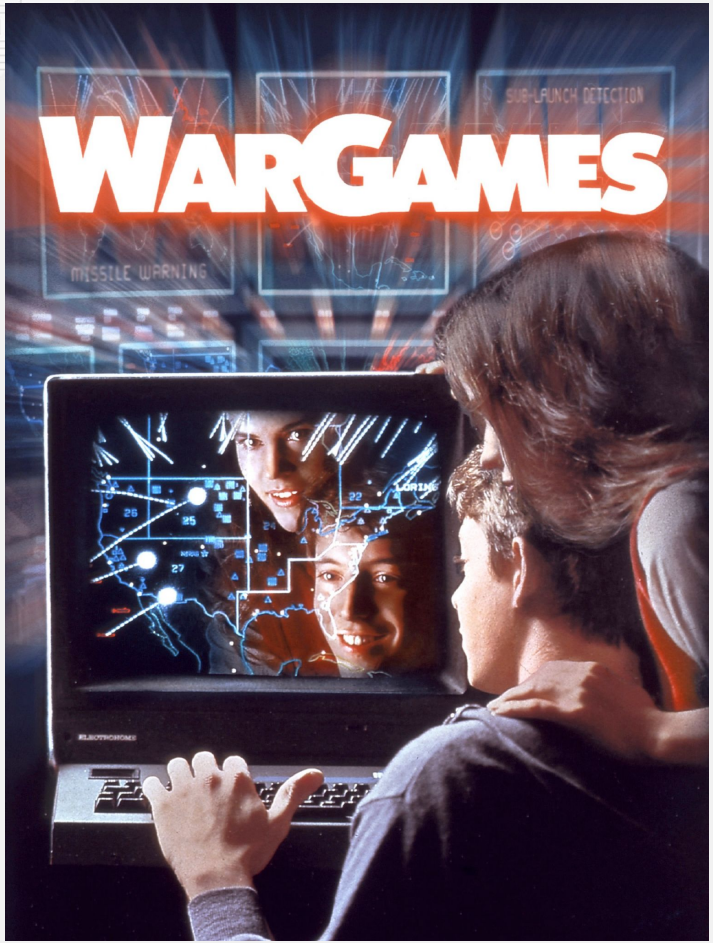
QUARKUS

A kube native stack for Java apps

Cloud Native, Microservices, Serverless



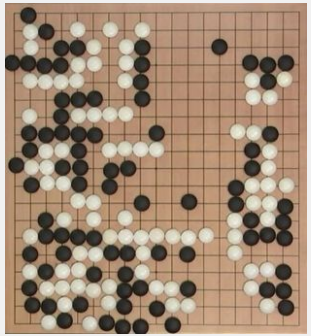
War Games (1983)

https://www.imdb.com/title/tt0086567/

30 Years Later ...

AI was more like

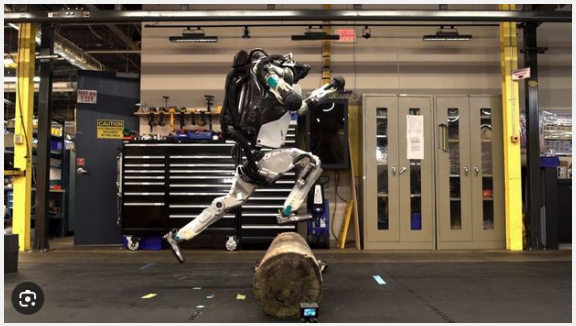
But then things started getting interesting...



AlphaGo (2016) /
AlphaZero (2017)

IBM Watson wins Jeopardy! (2011)

Waymo robotaxi (2018)



https://www.youtube.com/watch?v=LikxFZZO2sk

Boston Dynamics
Parkour Atlas (2018)

By Dllu - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=64517567

...and then it got crazy with Generative AI

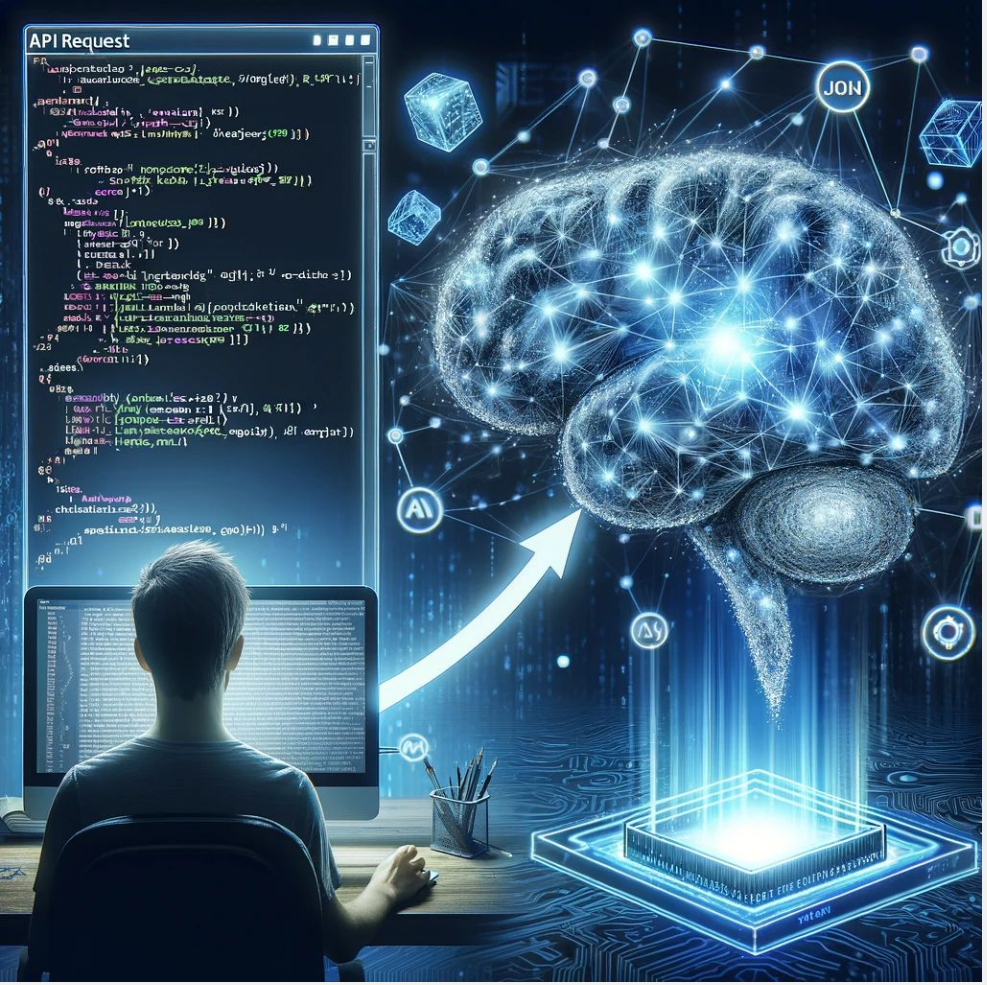
Théâtre D'opéra Spatial - Jason M. Allen / Midjourney (2022)

By Left intentionally blank - Colorado State Fair, Public Domain, https://commons.wikimedia.org/w/index.php?curid=137219696

But this is Data Science stuff!

What about the Developers?

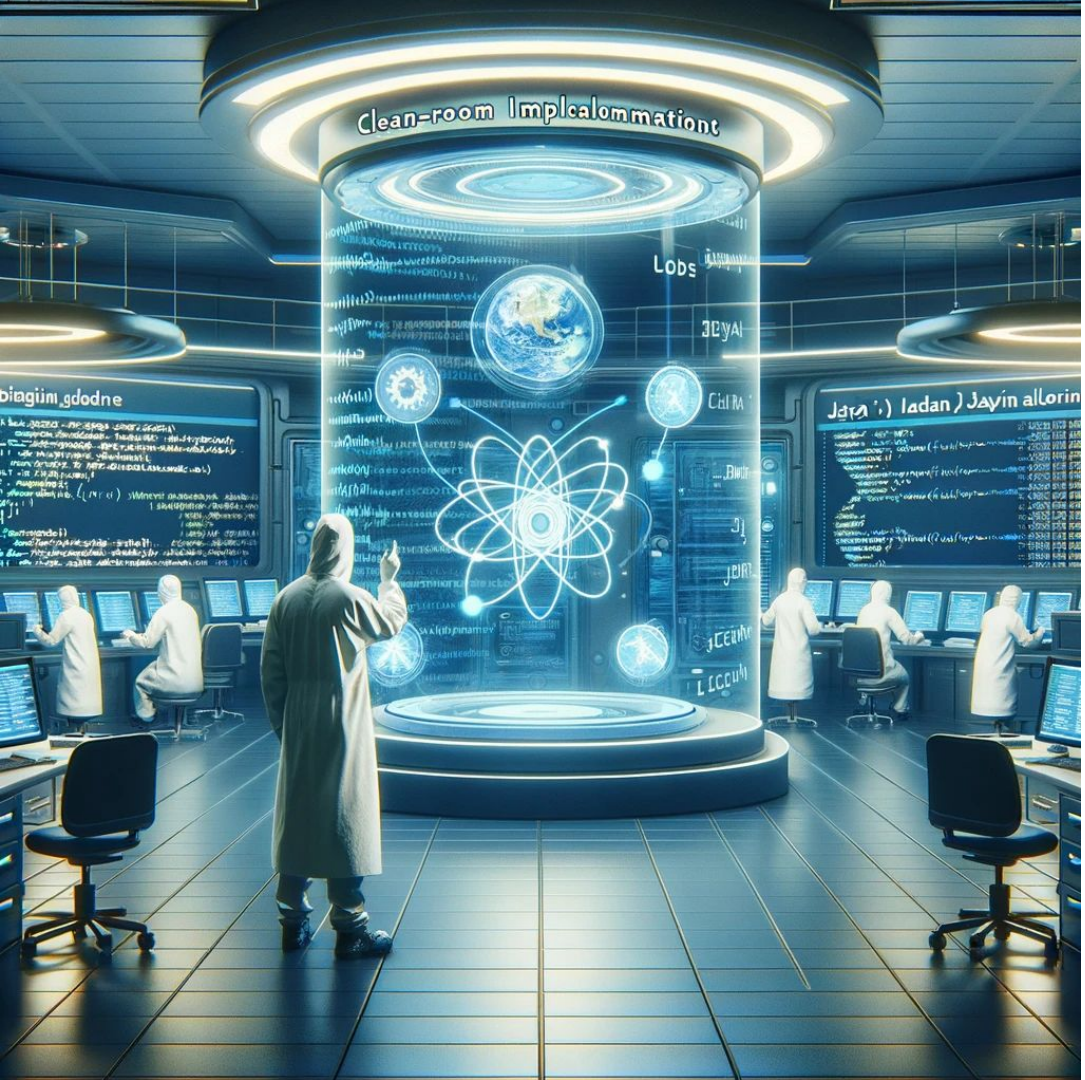
redhat.



The "Model" is only part of your Architecture

It's just another API

redhat.



LangChain

python

Java™

LangChain4j

Show me the Code!

redhat.

Why LangChain4j with Quarkus?

- Programming Model
  - Seamless integration with CDI
  - Declarative AI Services (@RegisterAiService)
- Developer Joy
  - 'quarkus dev' enables iterative testing and Prompt tuning.
  - Dev UI allows to view AI services, tools, config, add/search embeddings, test prompts, generate images
- Performance Enhancements
  - Optimized Quarkus REST/JSON libs
  - Reduced library footprint
- Build time
  - Build time warnings
  - Compile to native with GraalVM
- Production Enhancements
  - Unified Configuration
  - Metrics, Tracing, Auditing

Now your turn!

- Customer service & support automation
  - Chatbots, Booking assistants
  - Educational assistants
  - Learning and training
- Marketing / Content creation
  - Articles, blogs, social media updates
  - Product recommendations
  - Personalized content
- Human Resources / Recruitment
  - Job descriptions, CV screening, etc.
- ...

- Sentiment analysis on reviews, posts, etc.
- Structured info from unstructured data
- Transformation, summaries, explansions
- Code suggestions, explanations
- Language Translation / Localization
- Data Analysis and Reporting
- ...

Use your Super Powers to do Good!

QUARKUS

https://quarkus.io

quarkusio.zulipchat.com

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If you like Quarkus, star it on GitHub!
https://github.com/quarkusio/quarkus