

# Machine Learning System Architecture

and why it matters



**What do we mean by “System”  
and “Architecture”?**

# “System”

Machine learning in production requires multiple different components in order to work:

- Infrastructure
- Applications
- Data
- Documentation
- Configuration and more.



Together, these parts form the overall **system**.

These vary from simple web applications, to incredibly complex pipelines built by hundreds of people. We describe systems, by talking about **Architecture**.

# “Architecture”

ISO/IEC 42010 defines **Architecture** as:

“fundamental concepts or properties of a system in its environment embodied in its elements, relationships, and in the principles of its design and evolution”

Or, in plain English:

“The way software components are arranged and the interactions between them.”

# Why start with Architecture?

- Maintaining ML Systems is challenging
- Clarity in planning and architecture design helps to mitigate potential issues and errors
- A shared understanding of the system architecture and responsibilities is essential for effective cooperation