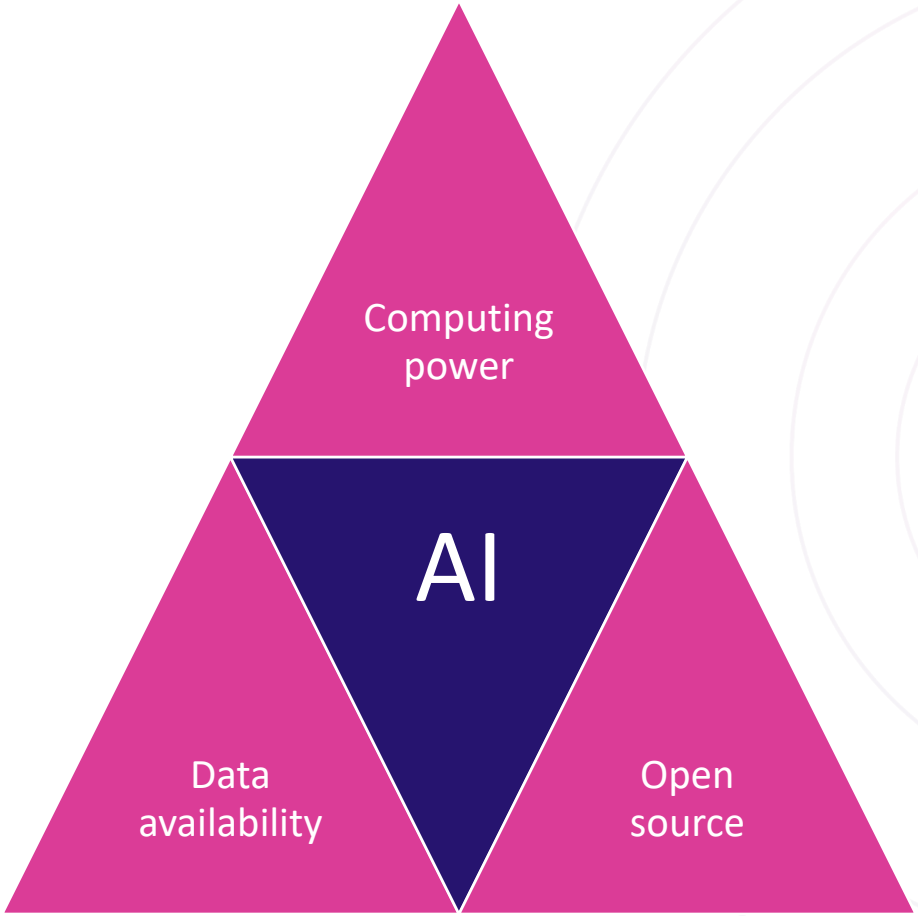
3 AI drivers & challenges

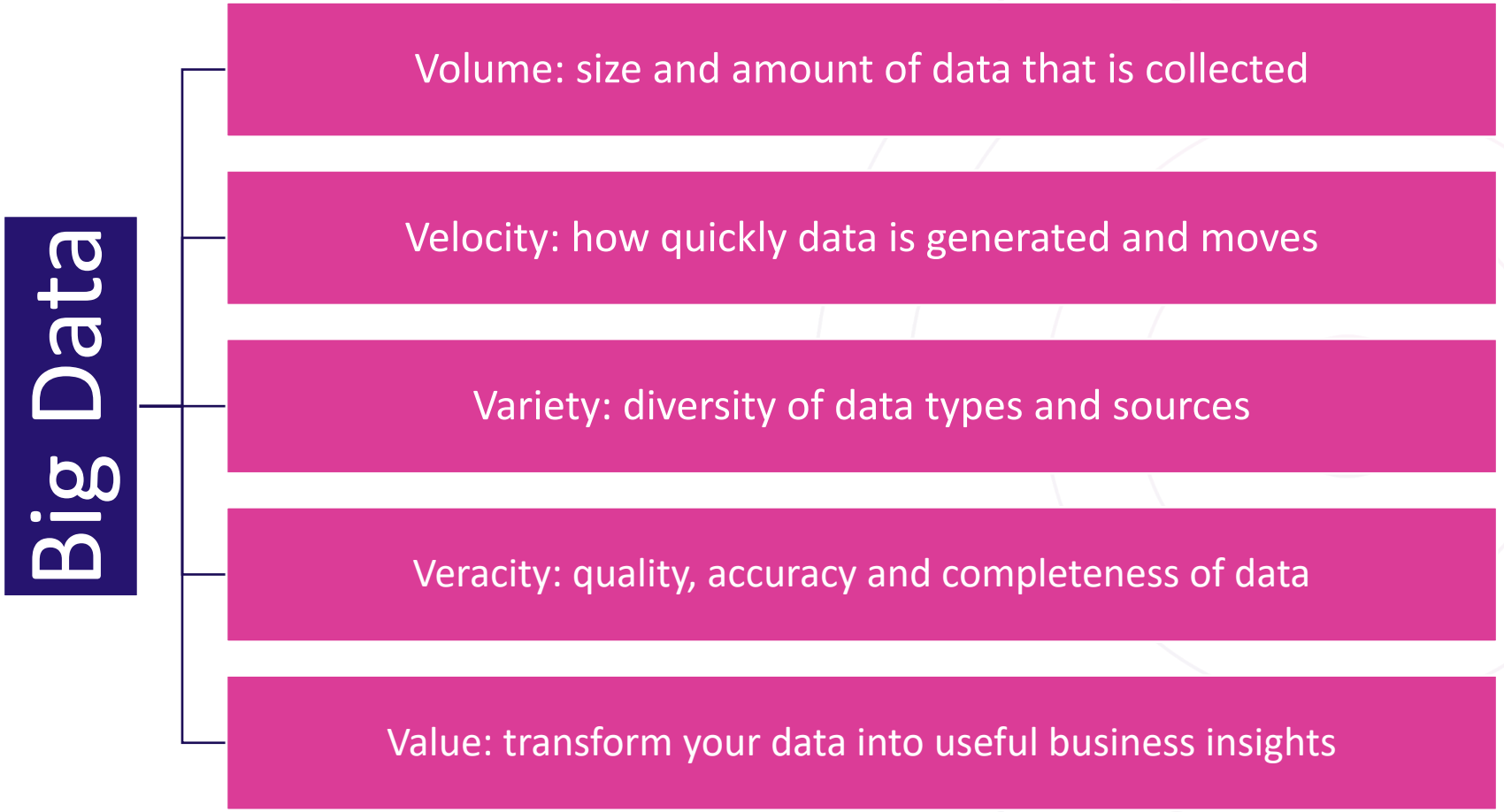
Drivers behind AI progress



Computing power

- Moore's law: number of transistors on chips doubles every two years
  - Exponential increase in performance since 1965
- Advances over the single-core central processing units (CPUs)
  - Multi-core CPUs that allow for parallel processing
  - Specialized types such as GPUs (graphics) and TPUs (tensor)
- Cloud computing
  - Sharing or resources allows for economies of scale
  - AI as a Service (AIaaS)

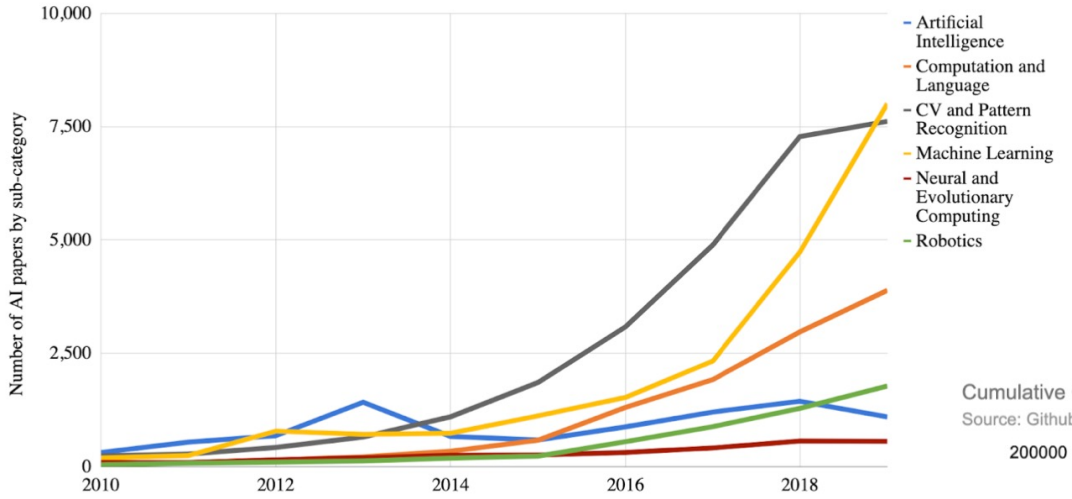
Data availability



Open source

Number of AI papers on arXiv, 2010-2019

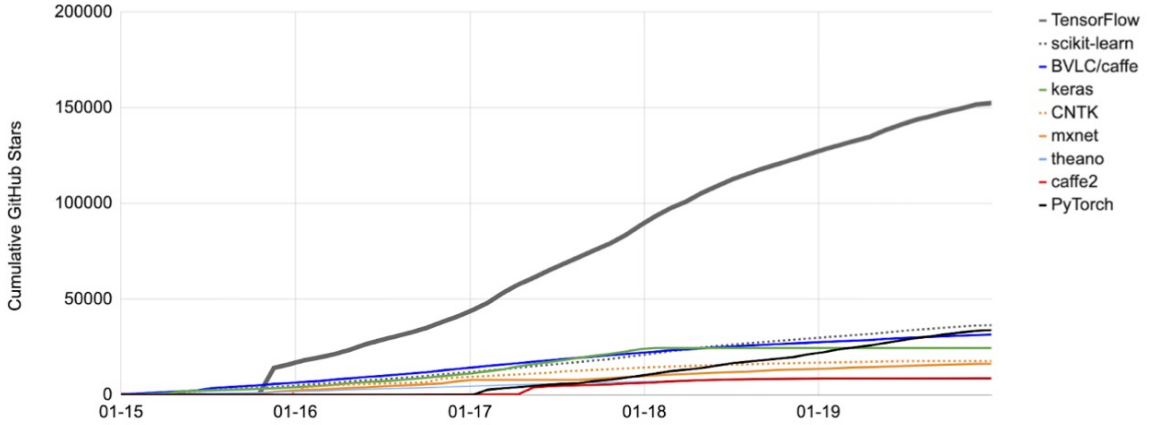
Source: arXiv, 2019.



[Stanford – artificial intelligence index]

Cumulative GitHub stars by AI library (2015—2019)

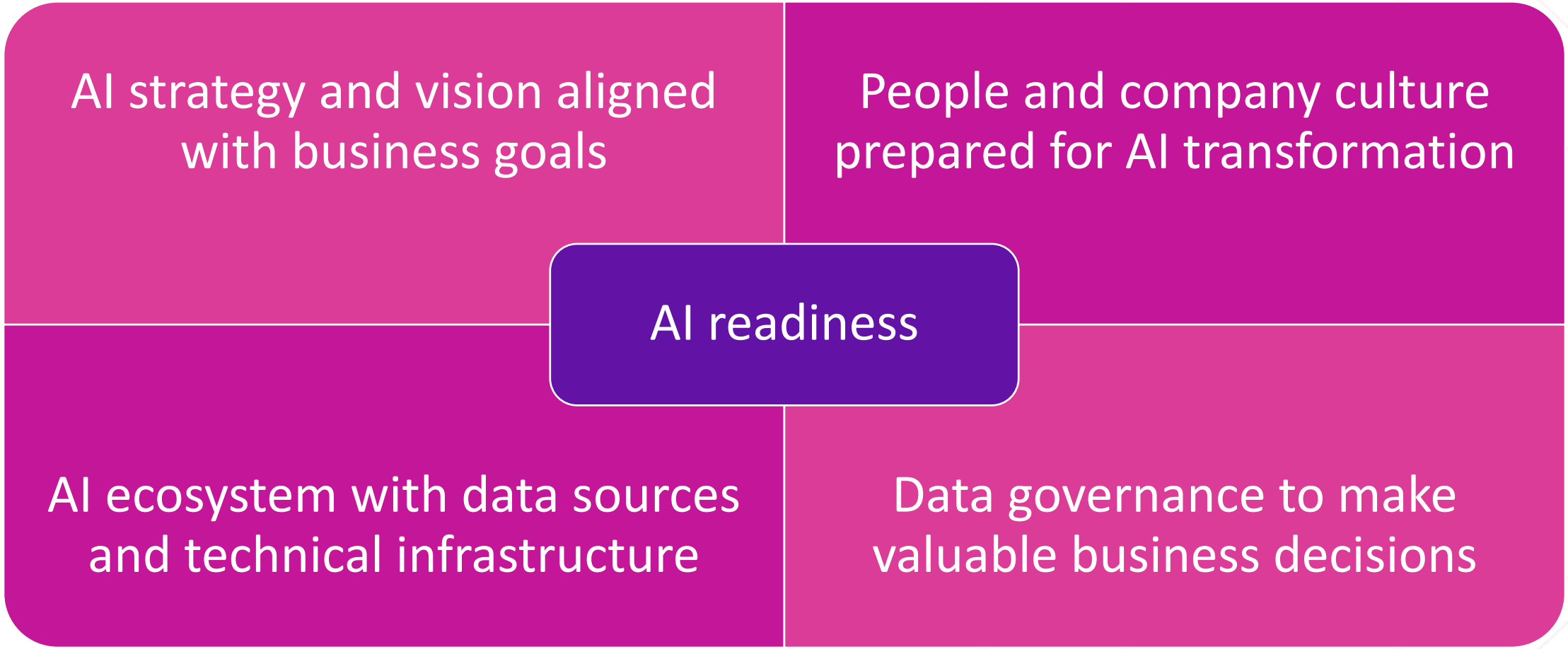
Source: Github, 2019.



Practical AI challenges

- "Status quo is working fine"
  - Company culture does not see the need for AI
- Leadership
  - Incomplete understanding of what is possible with AI and it's resulting impact
- Data issues
  - Quantity and quality not high enough to create business value
- Capabilities
  - Lacking the necessary skills and talent in the organization to develop AI
- Trust
  - Issues with ethics, privacy (GDPR), cyber-security, etc.

Are you ready for AI?



AI strategy

Product-centric

- Augment existing products
- Create new AI-driven products

Process-centric

- Support existing processes
- Disruptively transform processes

Enabling factors

People

- Get employees ready for AI
- Recruit the necessary talent
- Reskill current employees

Ecosystem

- Data sources and pipelines
- Computing servers (on cloud)
- Storage and network systems