

# Изкуствен интелект в софтуерните системи

Вместо заключение

# Machine learning components in software systems

---

## T-Shaped People

*Broad-range generalist + Deep expertise*

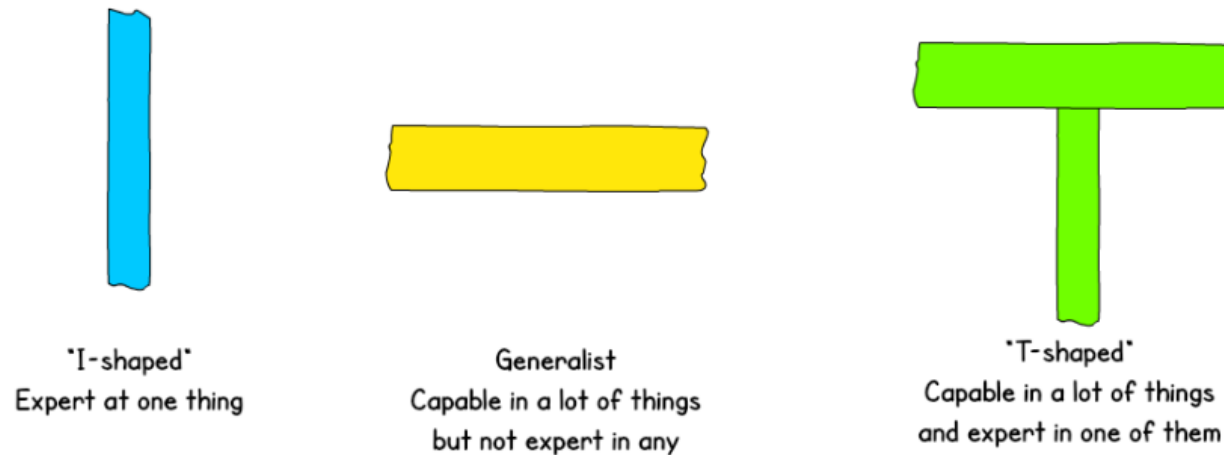


Figure: Jason Yip. [Why T-shaped people?](#). 2018

# Need for different skills

---

- *Business skills* to identify the problem and build a product/start-up
- *Domain expertise* to understand the data and frame the goals for the machine-learning task
- *Statistics and data science skills* to select a suitable machine-learning technique and train a model
- *Software engineering skills* to build a system that integrates the model as one of its many components
- *User-interface design skills* to understand and plan how humans will interact with the system (and the model and its mistakes)
- *System operations skills* to handle deployment, scaling and monitoring of the system

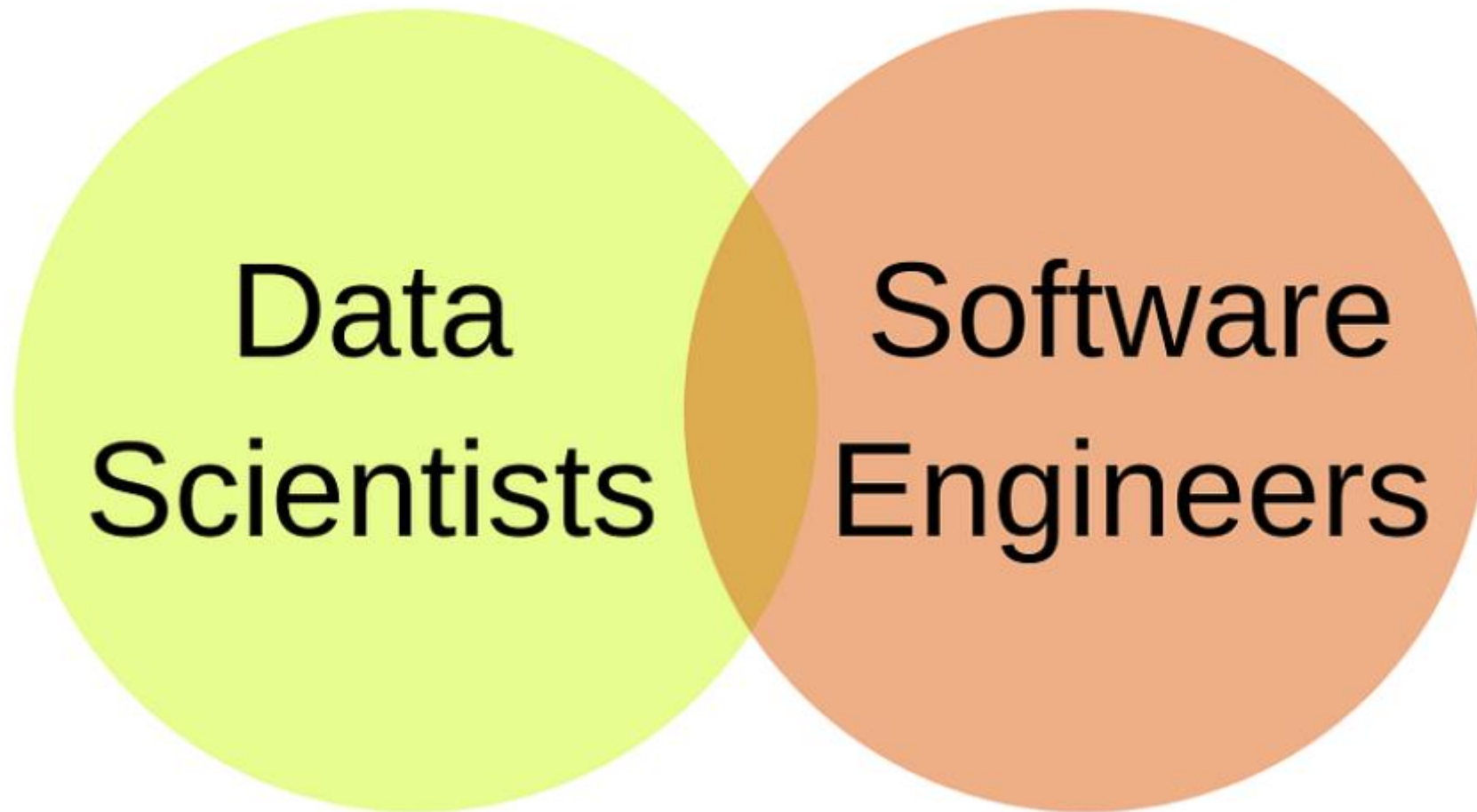
# More needs

---

- Help from *data engineers* to extract, move and prepare data at scale
- *Legal expertise* from lawyers who check for compliance with regulations and develop contracts with customers
- Specialized *safety and security expertise* to ensure the system does not cause harms to the users and environment, and does not disclose sensitive information
- *Social science skills* to study how our system could affect society at large, and
- *Project management skills* to hold the whole team together and keep it focused on delivering a product.

# Data scientists and software engineers

---



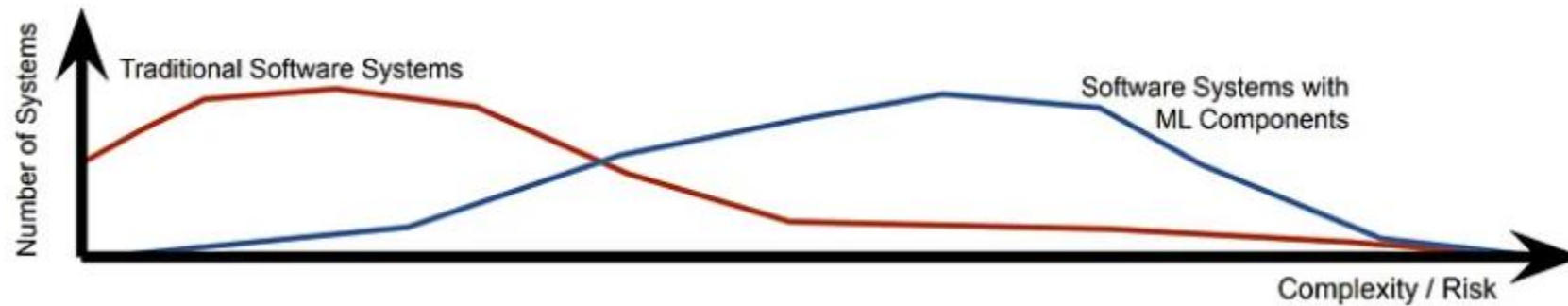
# Machine-Learning Challenges in Software Projects

---

- ▶ Lack of Specifications
- ▶ Interactions with environment (the real world)
- ▶ Focus on data and scalability

# Traditional vs ML software systems

---



## Допълнителни материали

---

- ▶ Kästner, C., (2021). Introduction to Machine Learning in Production, available at: <https://ckaestne.medium.com/introduction-to-machine-learning-in-production-eef7427426f1>