

Why Machine Learning (ML)

- How computers know how to do things?
- Two ways:
 1. programming: steps detailed by human programmer
 2. learning: without being specifically told
- Example 1: machine translation
 1. programming: writing many rules to replace and reposition words, e.g., *Do you speak Julia?*
Sprechen Sie Julia?
 2. learning: feeding the computer many bilingual documents
- Example 2: sorting
 1. programming: Quicksort, etc.

Warm Up.

- Objects in motion (or at rest) remain in motion (or at rest) unless an external force imposes change.
- $E=mc^2$
- $O(\log(n))$

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- Supervised
 - Unsupervised
 - Reinforcement
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- $6 \times y$