Machine Intelligence at Draper

Creating New Technologies,
To Better Understand Humans and to Better Humans

Intelligence big-data

Cyber vulnerability prediction

Quantitative finance

Data Rich
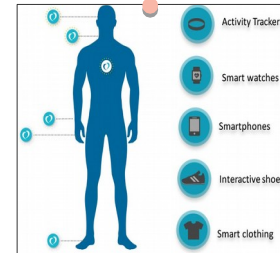
Humans

The Human - Machine

Data limited

Medical and biomedical
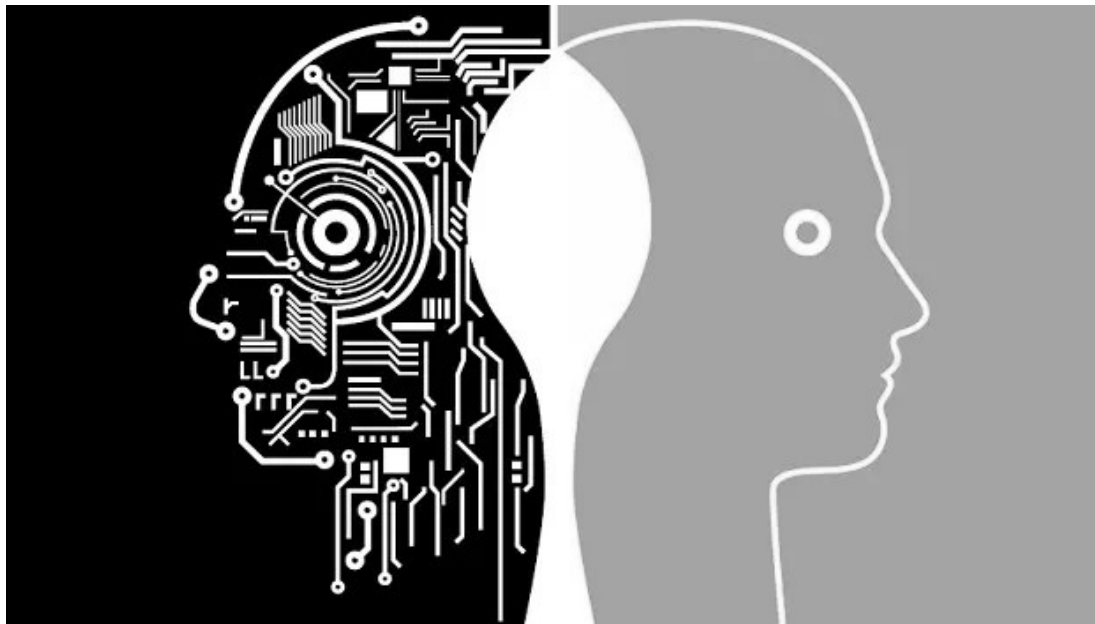
Checkpoint screening
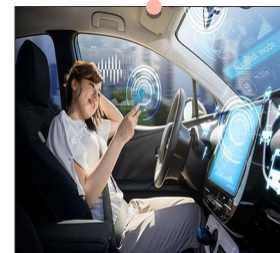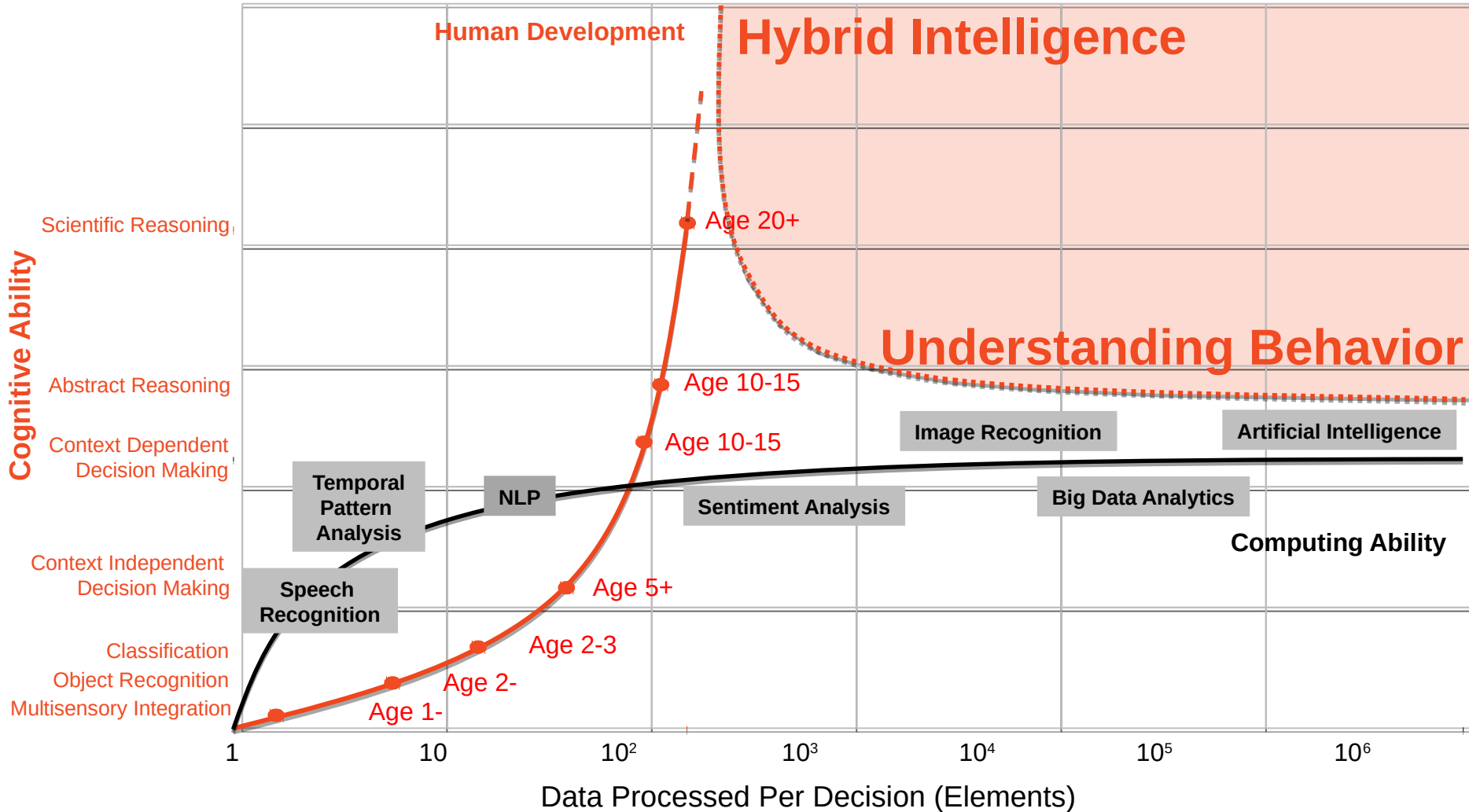
Autonomy

Biometrics

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A Focused Set of Core Technologies

Understanding Behavior

Hybrid Intelligence

Machine Intelligence at Draper

Traversing the Technology Landscape

TRL

9 **Data Access**
      Software

7   **Cloud Architectures**

5   **Full Stack**
         Development

                                    User Experience and
                                    Performance

              Machine
              Intelligence

3

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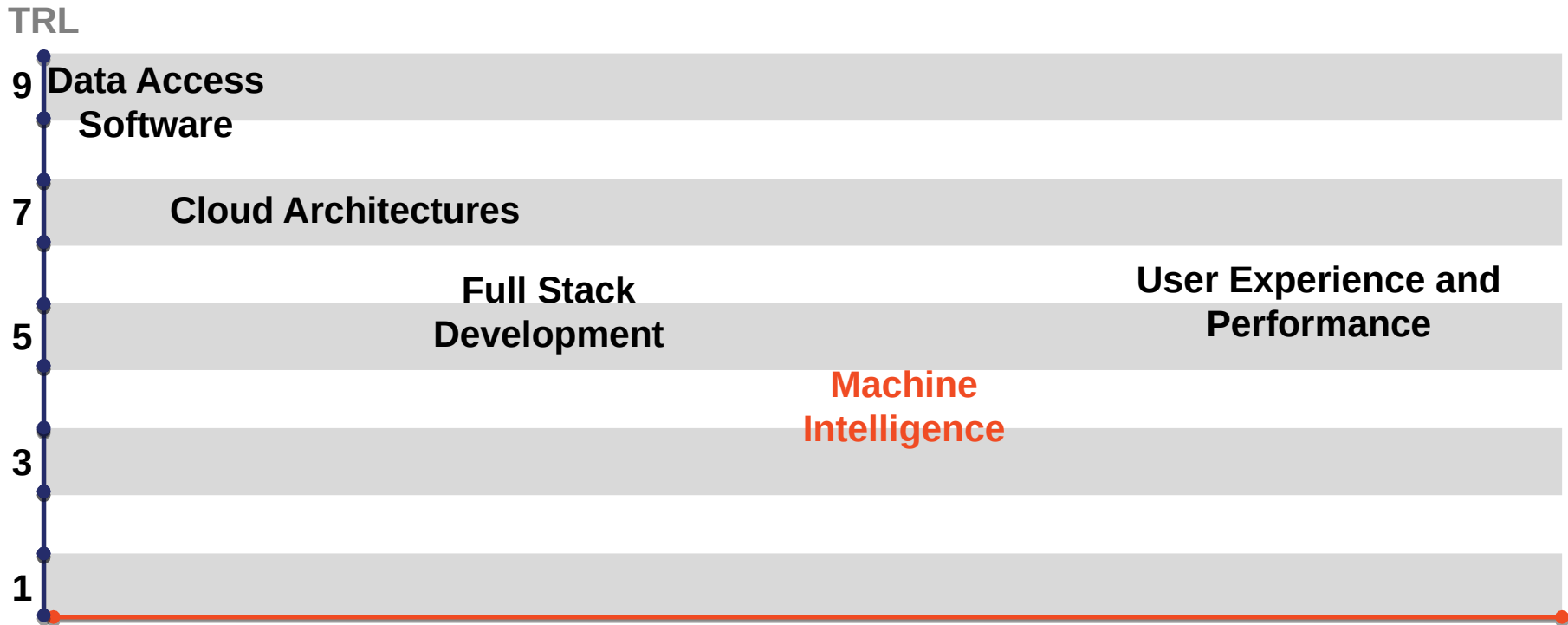
Hardware and Software   Software & Algorithms   Human Algorithms   Human Interfaces   Humans
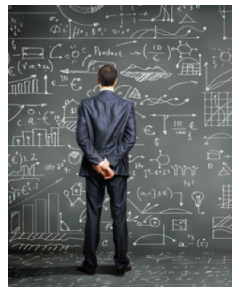
Humans Analytics

Checkpoint Security Guards
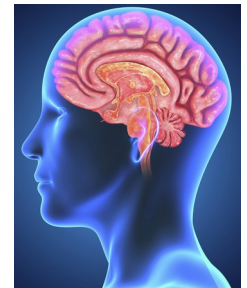
Doctors

Advanced Screening Research

- Humans perform no better than chance at identifying threats
- Uses non-contact biometrics to identify deception
- 85%+ detection accuracy

Biomedical Data Analytics

- Predicting Alzheimer's disease progression
- Automating image processing for high-throughput experiments
- Deep learning for cancer diagnostics

D R A P E R

Hybrid Intelligence

Search and Rescue

US National Guard

Commercial satellite image analysis
- Automatically identify subtle changes or major disaster areas
- See through water and fog
- Predict earthquake prone areas

Analysts

More data = more headaches
- We're producing lots of data, not enough people to analyze it
- Pure machines lack the analytic ability to understand data
- Turning the analytic process into a game

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