The Data Science Technology Stack

Contrasting critical issues in the public, scientific and commerce sectors

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School of Computer Science

This talk

- Examples from the largest scale commercial big data systems.
- My personal top five recommendations for critical technology investments for large data systems

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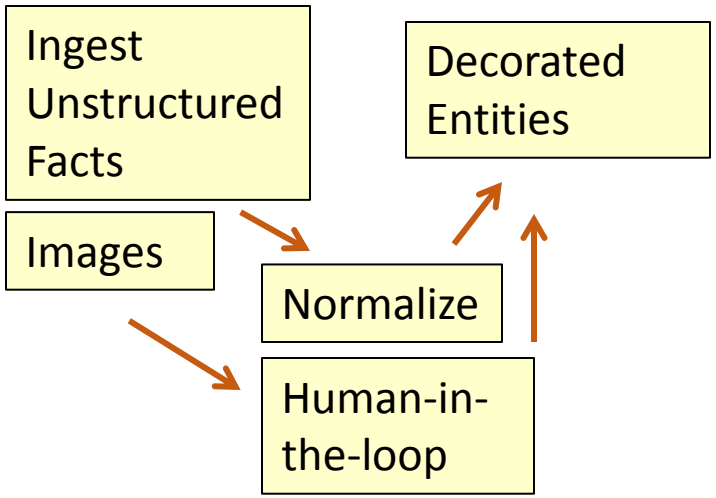

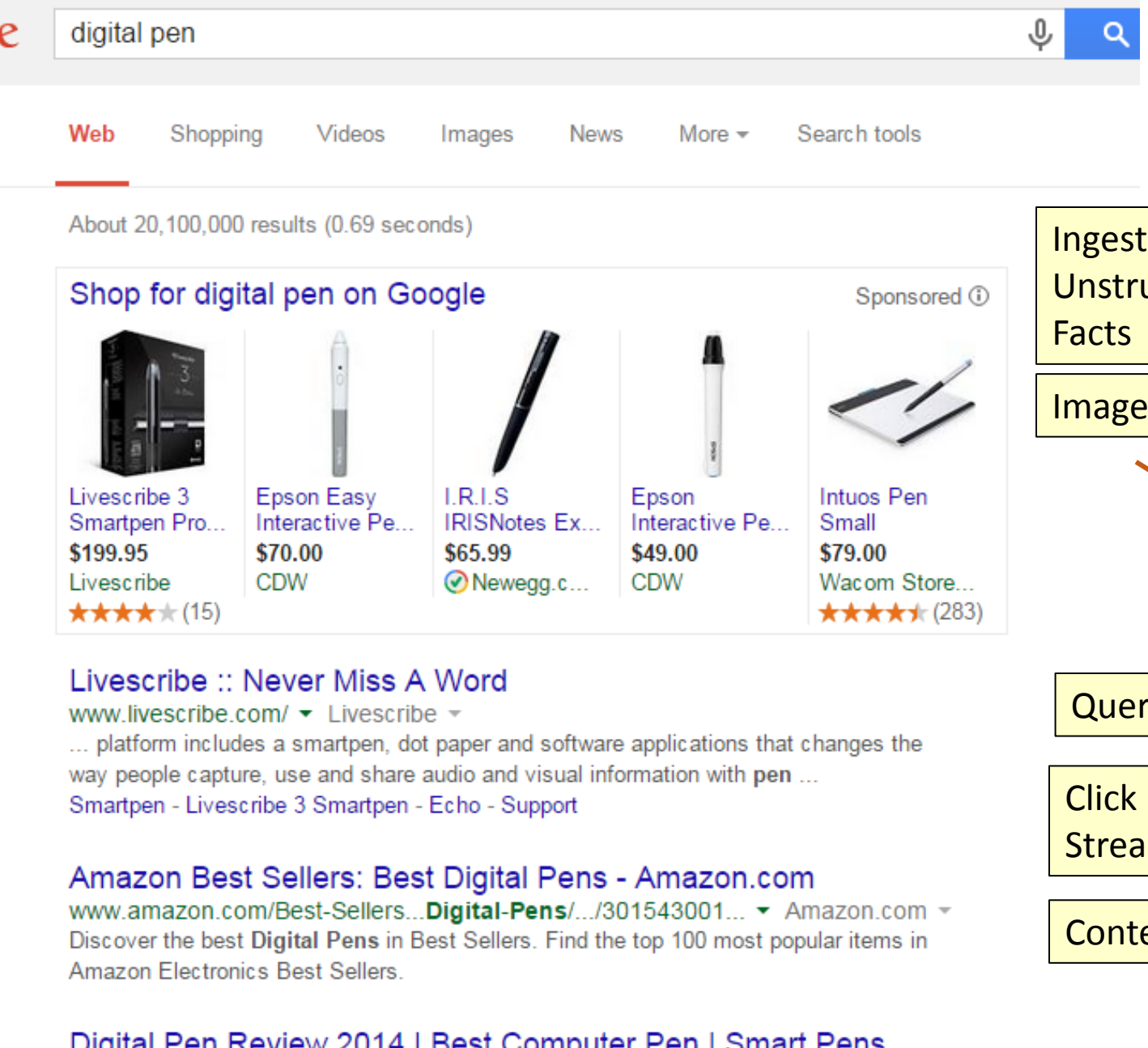
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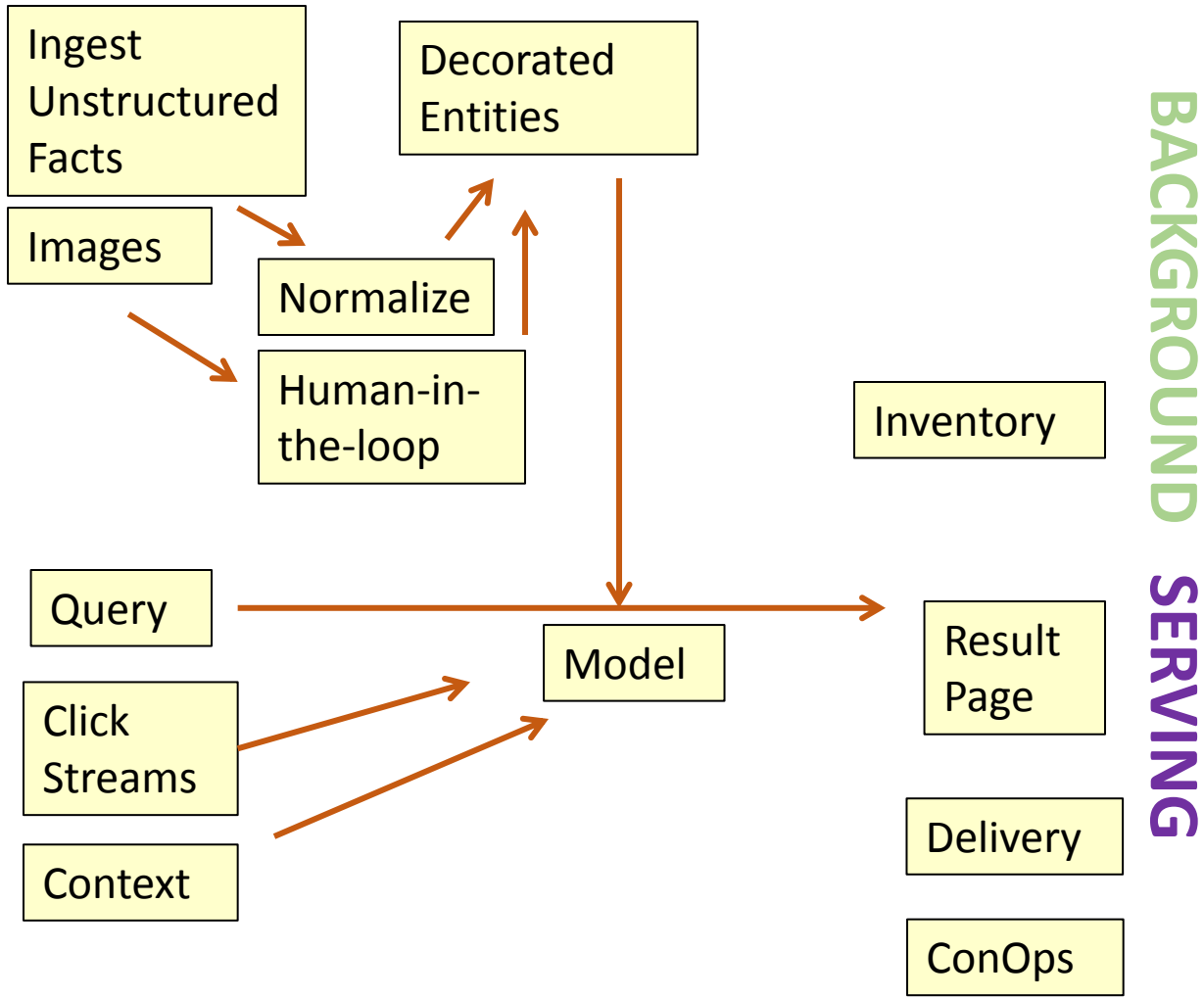
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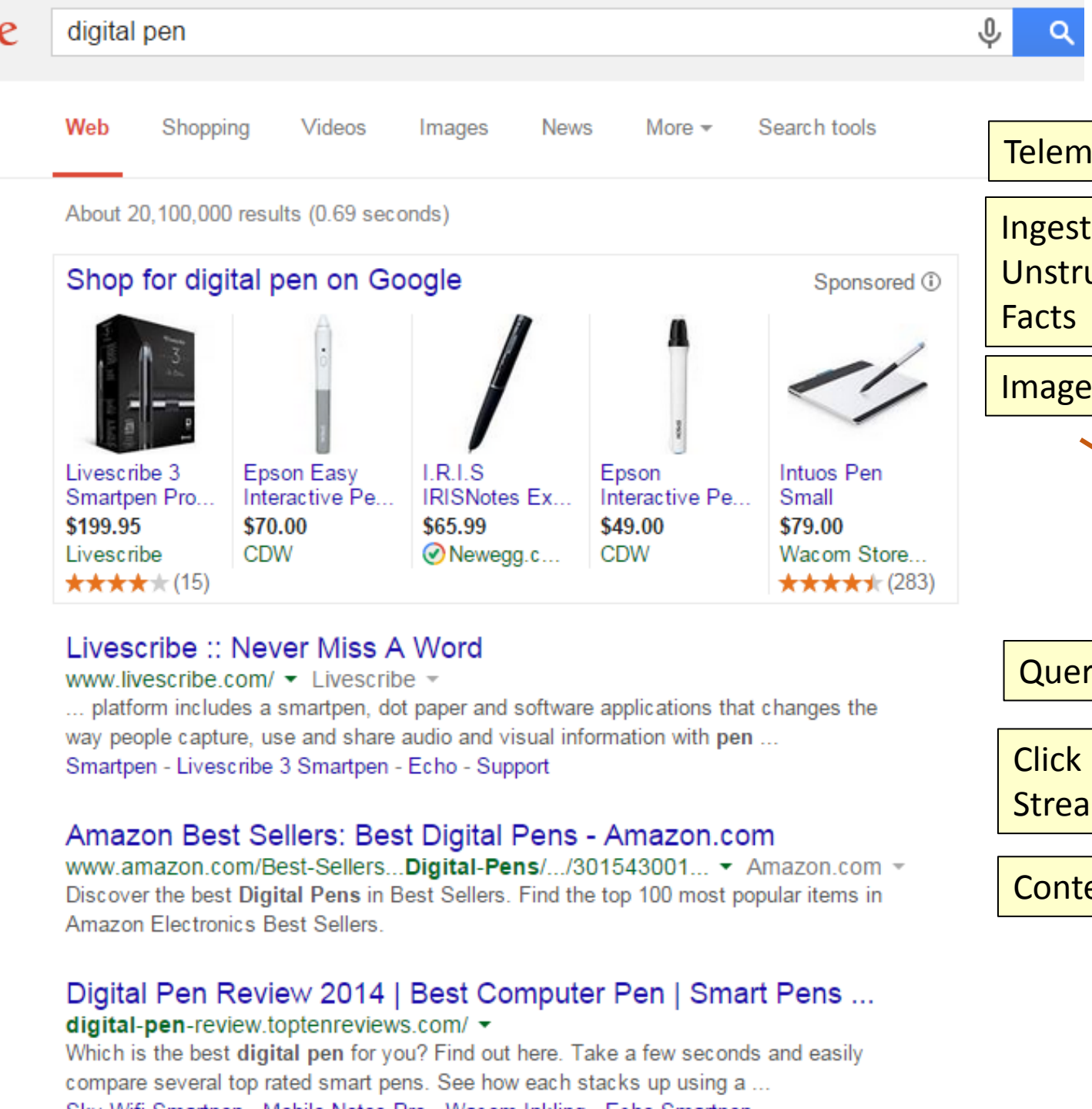
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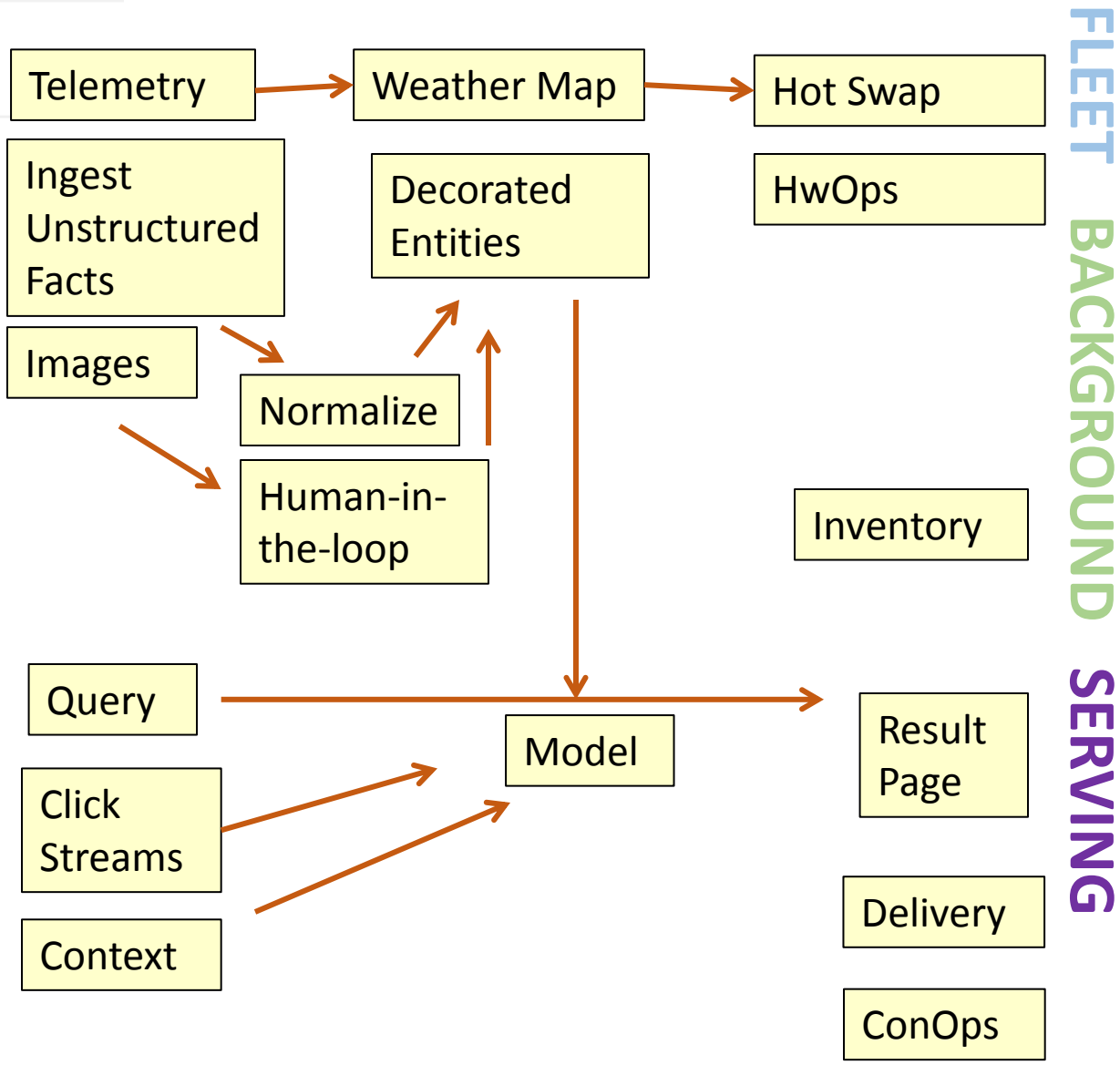
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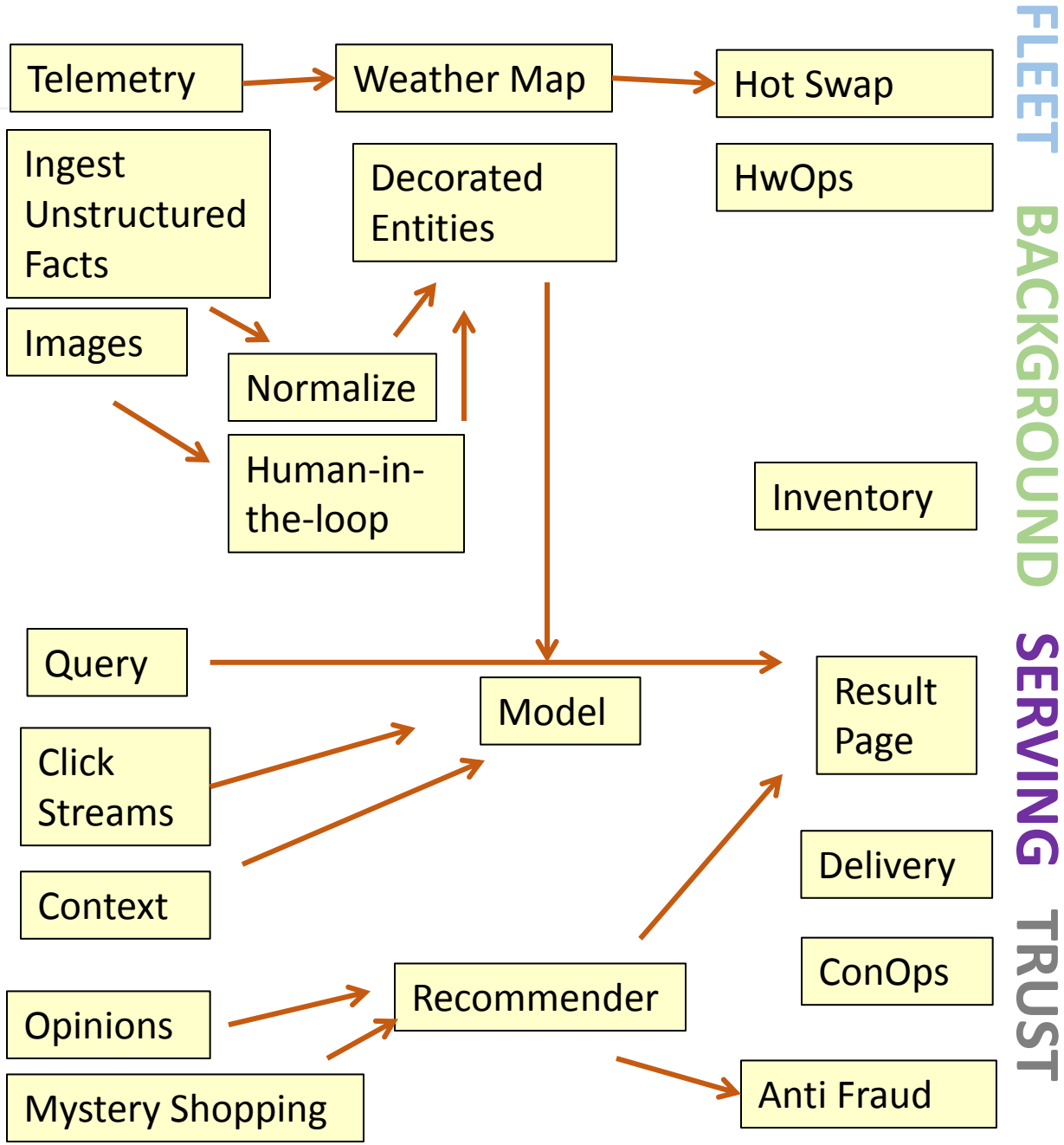

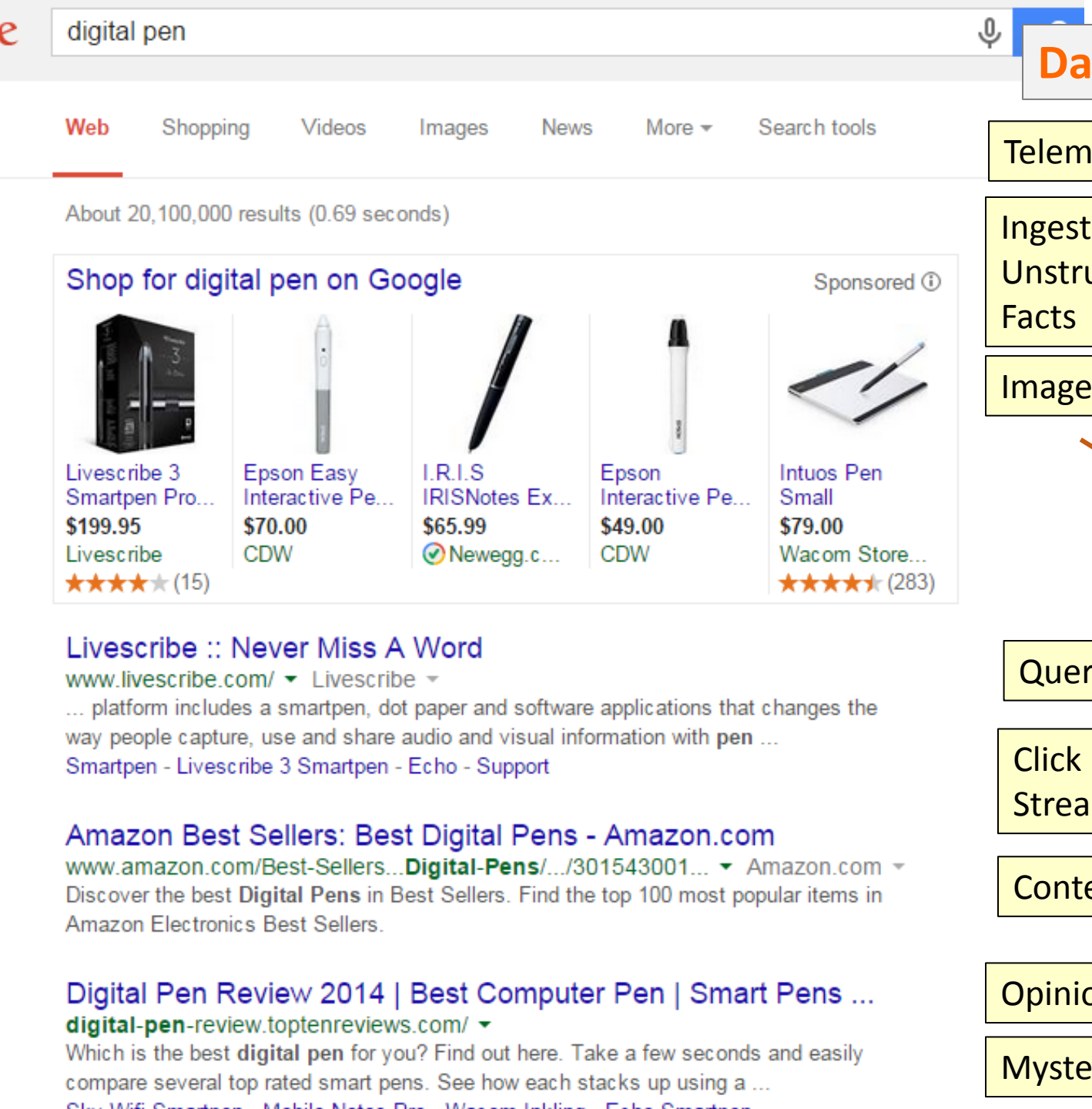
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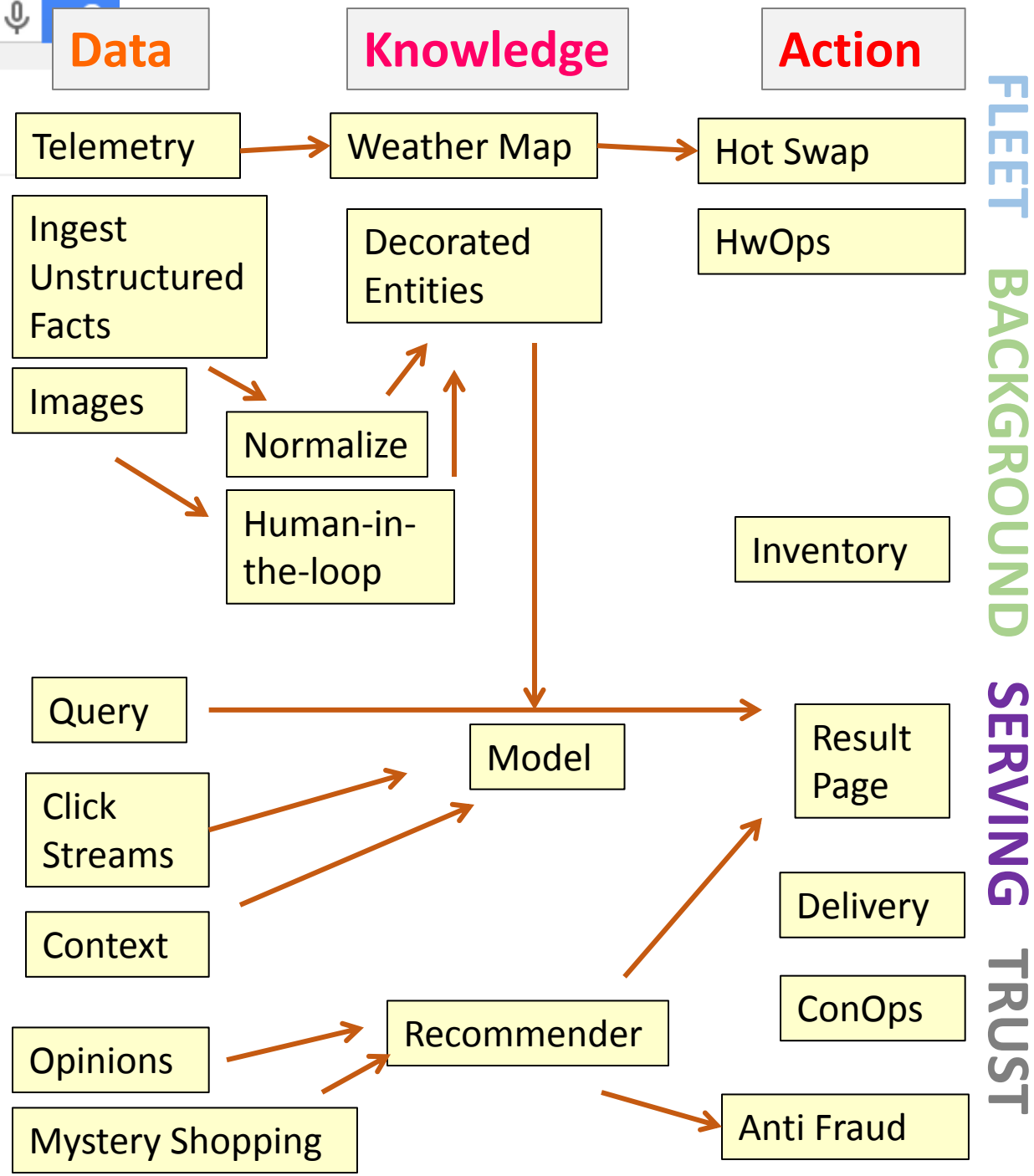
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My personal top five recommendations

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4	
5	

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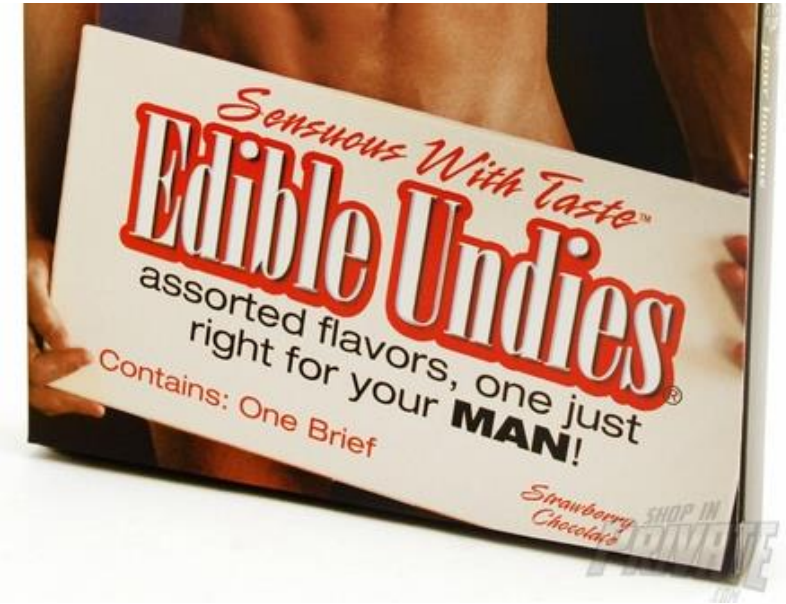

My personal top five recommendations

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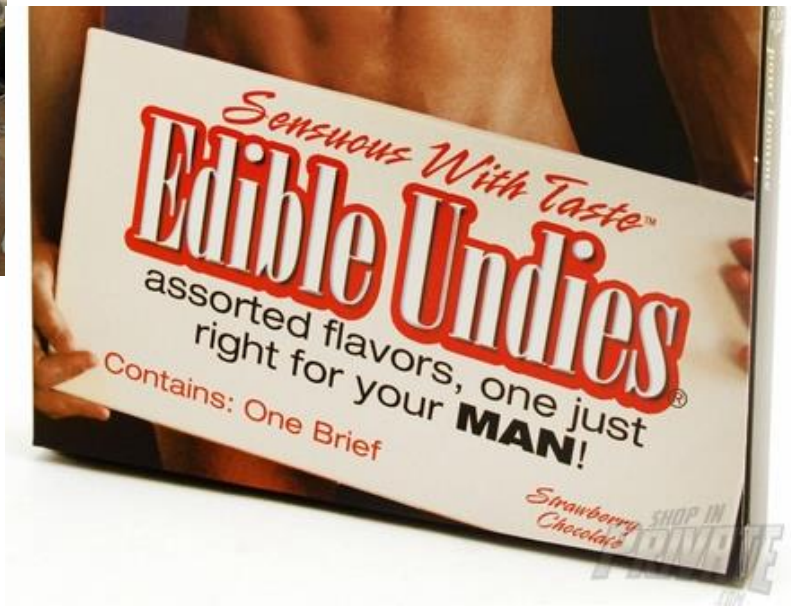
5	Human-in-the-loop



My personal top five recommendations

1	
2	
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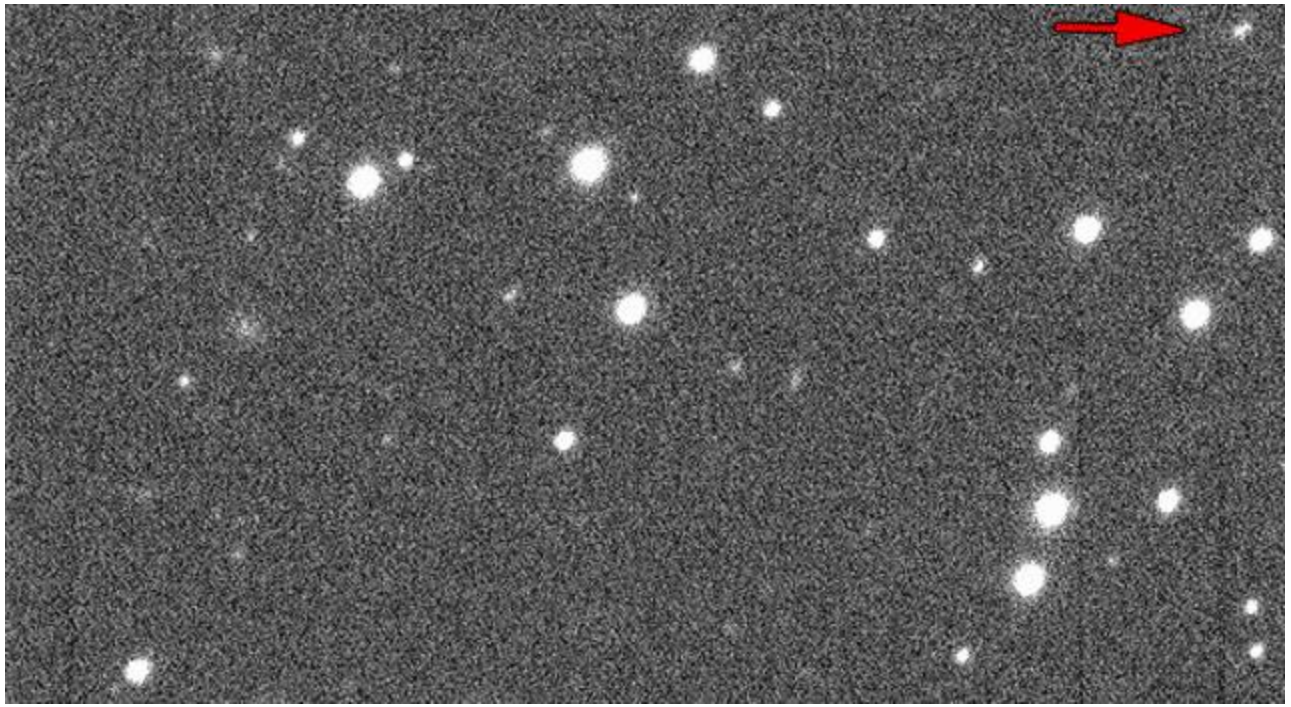
4	Delineation of the Data Science Stack
5	Human-in-the-loop

Decision Support	Visualization, Consulting Workflow, Human-in-loop systems
Modeling	Prediction, Clustering, Structure Discovery
ML Components	Spatial Join, Fuzzy Join, MLE, Sampling
Data Science Kernel Layer	Blobstore, KeyVal, Redundancy Management
Device Layer	Multicore, GPU, Sensors

My personal top five recommendations

1	
2	
3	Data Intensive Computing Architectures
4	Delineation of the Data Science Stack
5	Human-in-the-loop



Panstarr telescope image (Kaiser et al)

My personal top five recommendations

1	
2	Entities
3	Data Intensive Computing Architectures
4	Delineation of the Data Science Stack
5	Human-in-the-loop

My personal top five recommendations

1	The Top of The Stack
2	Entities
3	Data Intensive Computing Architectures
4	Delineation of the Data Science Stack
5	Human-in-the-loop

Autonomy	Cognitive Assistance
Decision Support	
Modeling	
ML Components	
Data Science Kernel Layer	
Device Layer	