

NOKIA

Machine learning and fintech

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WE WANT YOU!

What is the question?

- **Operational**
- **People development**
- **Competitive intelligence**
- **Strategic / tactical**
- **...**



Military recommender systems

- How do I best screen military leaders from the fog of war





Predictive analytics

- **How do I best predict maintenance needs for both equipment and people**

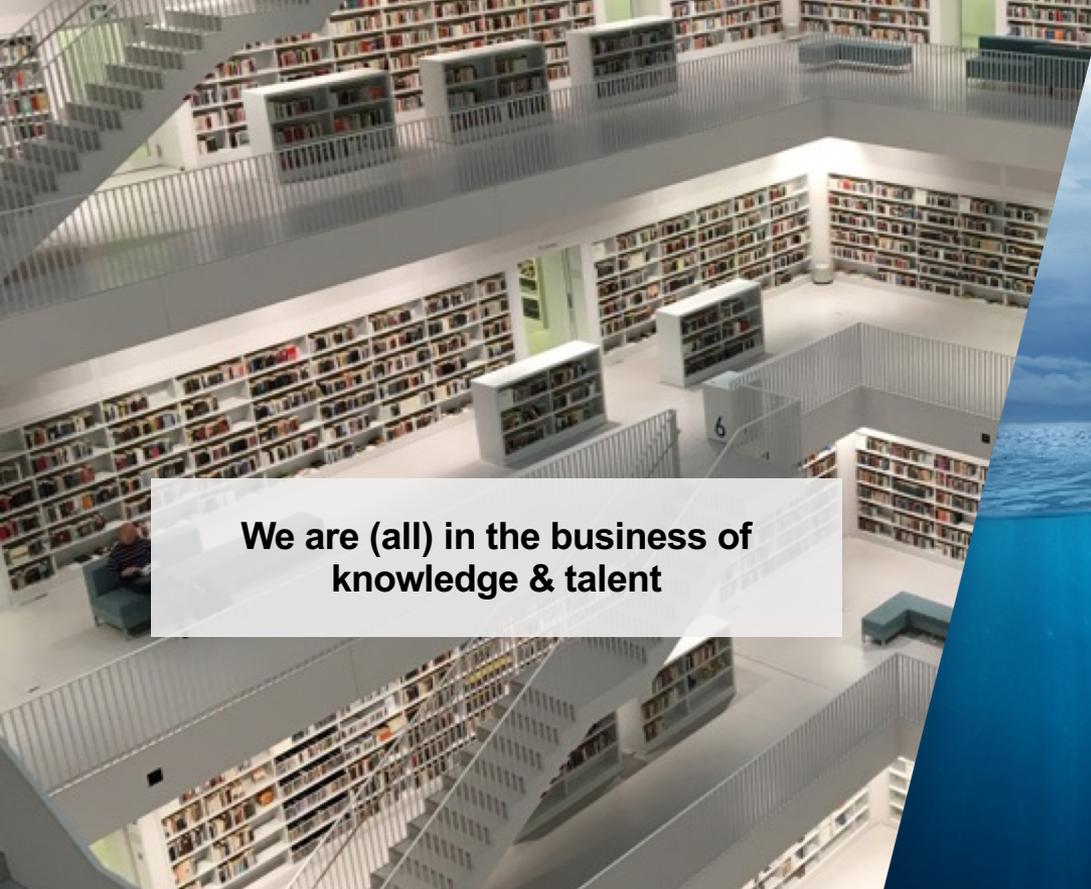
Intelligence gathering

- **What data changes before troop movements occur**
- **What data best predicts missile tests**
- **What data is the best forward looking metric for X**

Machine learning and fintech

- Natural language processing for customer service
- Credit assessment
- Fraud detection
- Cyber security
- Share trading
- Quant funds
- Currency trading
- ...





**We are (all) in the business of
knowledge & talent**



Future of Knowledge Work: Augmented Knowhow

How can we better identify, expose, and channel knowledge and skills inside organizations?

We have many talents and a lot of knowhow. **How can I find the person who knows most about a given topic?**

Bubbleburster3000 machine learning 🔍

Max no. of results: 10 ▼ Filter by offices: All ▼

Legend:

- Developer
- Designer
- Sales & PM
- Data Scientist
- Advisor
- Other

HR

Knowledge Work

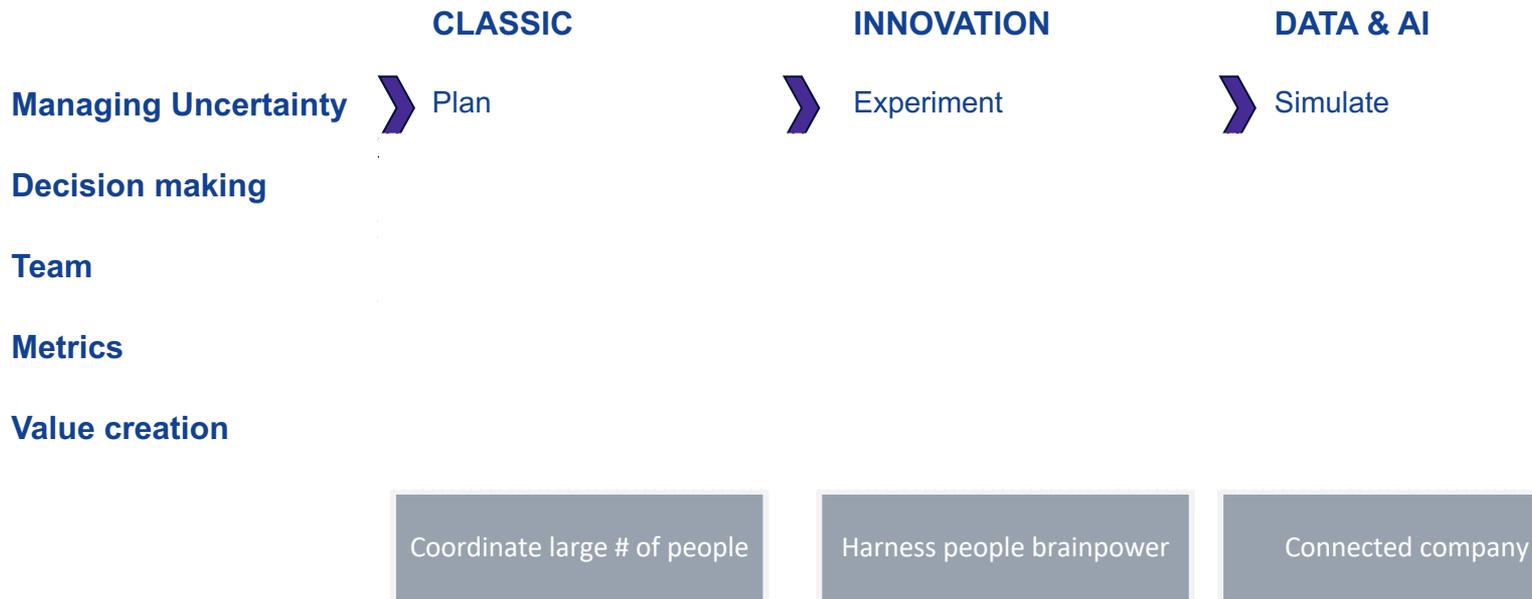
Portfolio management

M&A

Created by **Futurice** Powered by **Aito.AI**

Organisational Paradigms

- “Company using AI” is very different from “AI powered company”



Machine learning can be fragile



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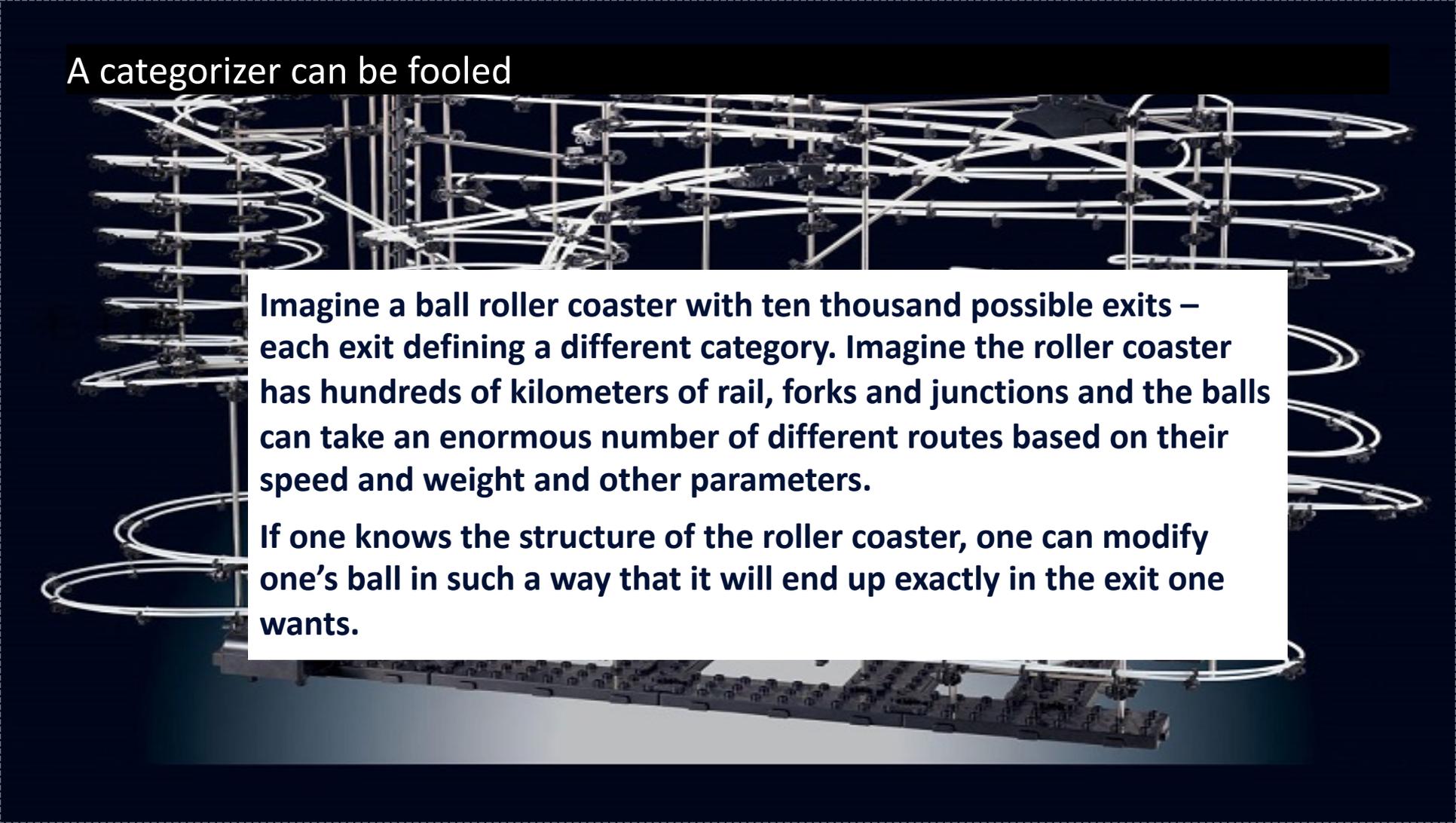


A panda with
57,7% confidence

×140

A gibbon with
99,3% confidence

A categorizer can be fooled



Imagine a ball roller coaster with ten thousand possible exits – each exit defining a different category. Imagine the roller coaster has hundreds of kilometers of rail, forks and junctions and the balls can take an enormous number of different routes based on their speed and weight and other parameters.

If one knows the structure of the roller coaster, one can modify one's ball in such a way that it will end up exactly in the exit one wants.

A practical example

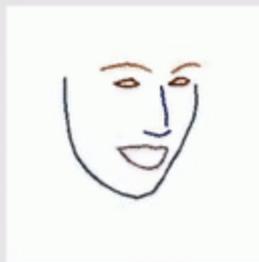


Deep fakes



Varying the number of frames

Training frames:



Face landmarks



1-shot result



8-shot result



32-shot result

And, of course, autonomous weapons



NVTEL 网络视频专家

去年我们用无人机进行了大约3000次的精准打击
customer pilots directed almost 3,000 precision strikes last year



Intuition on next
steps



Summary

Intuition on why now

- Computing capacity and data
- Significant business results
- Increased investments into machine learning

Intuition on what is machine learning

- Learning a model to reliably predict the right outcome based on a set of input data
- Slow with lots of calculations in the learning phase, much quicker when actually used
- Thinks only in one direction
- Garbage in, garbage out

Intuition on why this is important to understand

- The amount of data and computing capacity will continue to increase
- New algorithms will be invented
- Will create immense value, but to whom

What should be done

1. Spread understanding
2. Build competence (centralized)
3. Create a data strategy
4. Upgrade IT systems
5. Use for efficiency and quality
6. Build intelligence into your products
7. Assign budgets, targets and accountability



Risto Siilasmaa on Machine Learning

Nokia

388K

Published on Nov 11, 2017

Risto Siilasmaa shares his view on why machine learning has become topical, what it means, why you should spend more time on it and how your organization can be better prepared.
https://www.nokia.com/en_int/investor...

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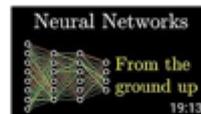
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Up next

Autoplay



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How Machines Learn
 ...

Thank you

