



Engineering Our Way Forward



Deep Learning Managing Space, Spectrum & Comms Networks?

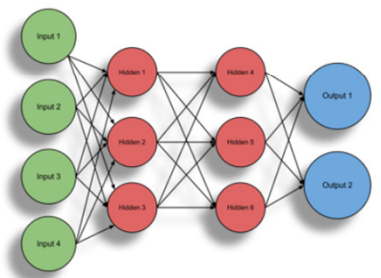
...thoughts from RE-WORK Summit - London

Doable today...

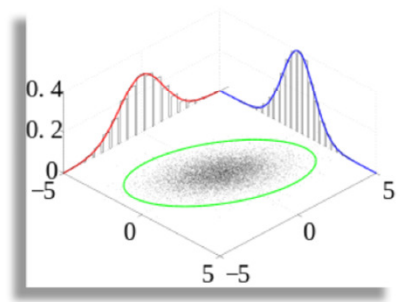
There is a real need for Satellite Operators to enhance the automation of tools and processes to manage the growing complexity of the Satellite/Terrestrial Global Network

Probability & Uncertainty:

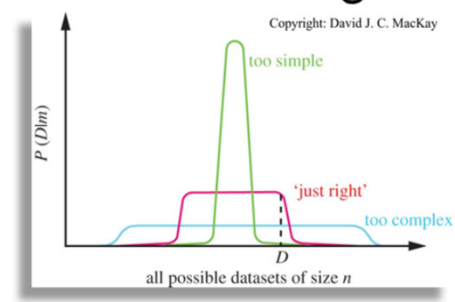
Deep Learning



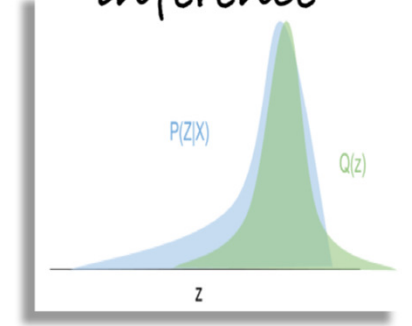
Probabilistic modeling



Bayesian reasoning



Approximate inference





Need for Uncertainty...

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- Reinforcement learning
- Critical predictive systems
- Active learning
- Semi-automatic systems
- Scarce data scenarios
- ...





Generative Models...

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Generative models can synthesise new Data...

Useful for Machine Learning:

- Augmenting Training Data
- Imagining new Concepts
- Better understanding of our Data

Note: Eutelsat generates 100M Datagrams/Year

A **Datagram** is, "a self-contained, independent entity of data carrying sufficient information to be routed from the source to the destination computer without reliance on earlier exchanges between this source and destination computer and the transporting network."



Generative Adversarial Networks...

Machine learning:

Z



Generator



fake



real

Discriminator

“Real”
or
“Fake”

Adversarial training involves training two competing models

RG *The People...*

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The
Alan Turing
Institute

OPINION MINING USING HETEROGENEOUS ONLINE DATA



Elena Kochkina



Maria Liakata



Adam Tsakalidis



Bo Wang

Others include: Amazon, Facebook, Nvidia, DigitalGlobe, Imperial College, Durham, UCL, Max Planck Institute, EchoBox, Deep Instinct, DeepMind, Group Renault & more...



Videos:

You can view the recordings of presentations from the event [here](#).

Use the email address you registered with to log in.

Your password is: **REWORK17**

You will also be able to view videos from the AI Assistant Summit.

Slides:

You can view presentation slides from speakers in the dropbox folder [here](#).

You can view presentation slides from the AI Assistant Summit [here](#).

The password is: **REWORK17**

Media:

See a recap of the event [here](#).

We hope to see you again soon! Upcoming events include the [Deep Learning Summit](#) in San Francisco in January and the [Deep Learning in Finance Summit](#) in London in March.

You can view all our upcoming events [here](#).