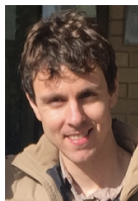# AI and the Law—looking beyond the hype of AI

Alistair Knott (Dept of Computer Science, Otago)
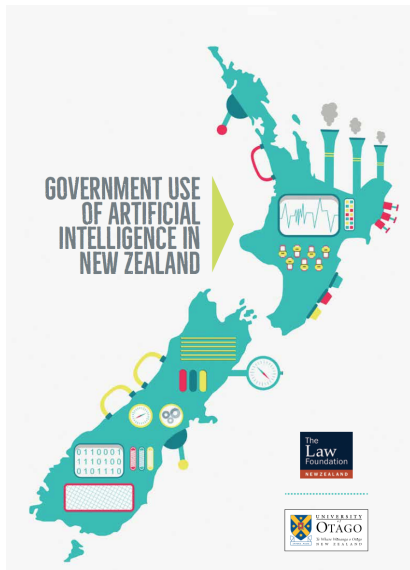### John Zerilli, Joy Liddicoat (Faculty of Law, Otago)

The AI and Law in NZ Project

- 3 year project, funded by the NZ Law Foundation
- Phase 1 topic: uses of AI in NZ government departments
- Phase 2 topic: AI and employment in NZ

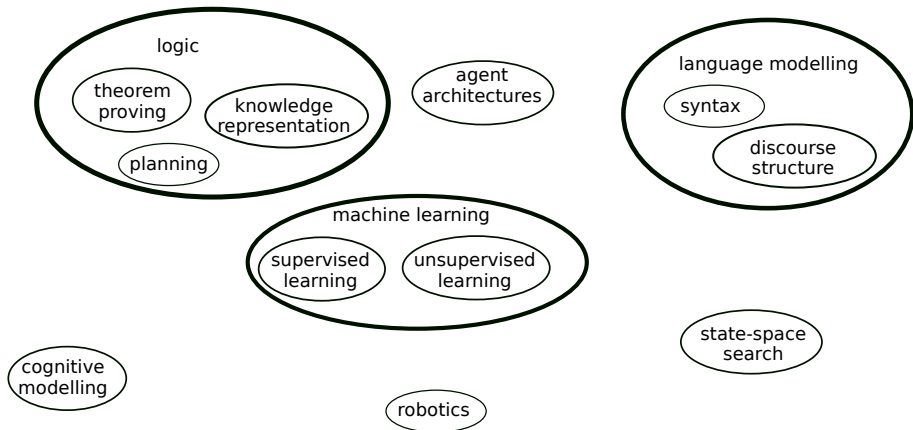# Our Phase 1 report is coming out next week!

Today's presentation

I will introduce AI systems. . .

John & Joy will discuss various legal issues that arise with AI systems.
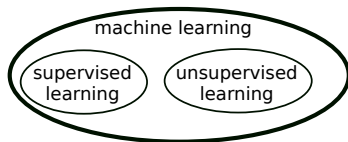
An introduction to AI systems

'In 15 minutes, for lawyers'

The field of AI
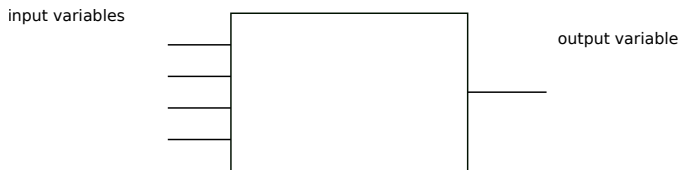
The field of AI

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supervised learning

What's a supervised learning system?

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A computer program that learns to predict some *output variable*, from a set of *input variables*.

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input variables

pixels

output variable

object category

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x-ray image
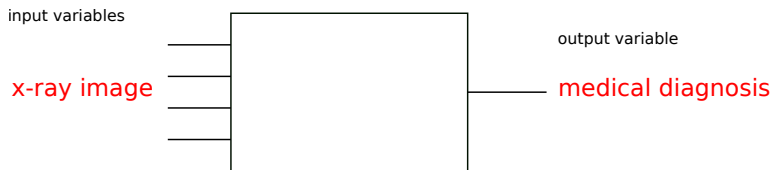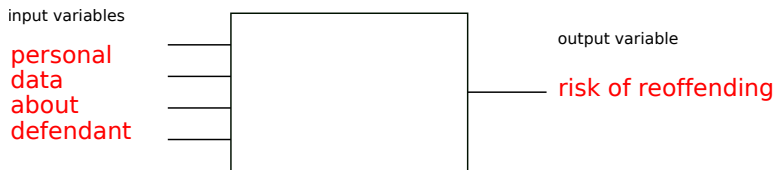
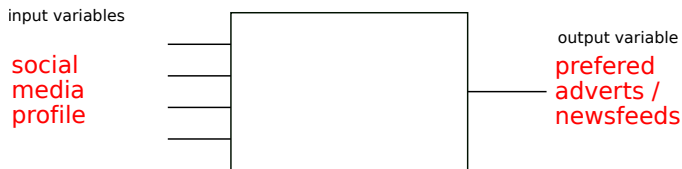output variable

medical diagnosis

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input variables

social
media
profile

output variable
prefered
adverts /
newsfeeds

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input variables

text
document

output variable

document type

What's a supervised learning system?

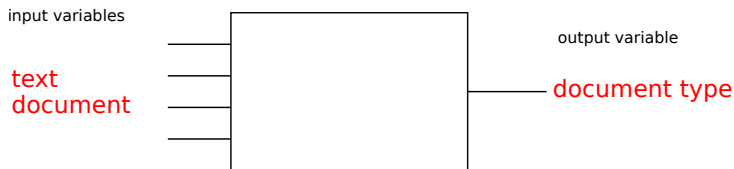A computer program that learns to predict some *output variable*, from a set of *input variables*.

input variables

legal
clause
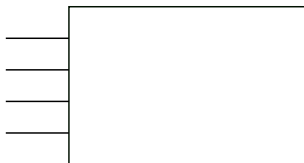
output variable
clause type
 - indemnity..
 - confidentiality..
   ...

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input variables

picture 1

output variable

'dog'

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input variables

picture 2

output variable

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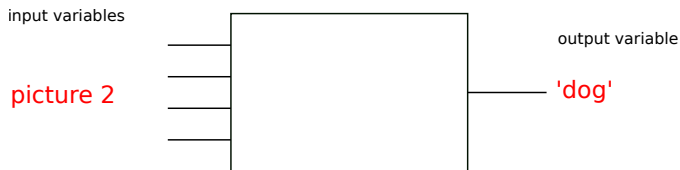

input variables

picture 3

output variable

'cat'
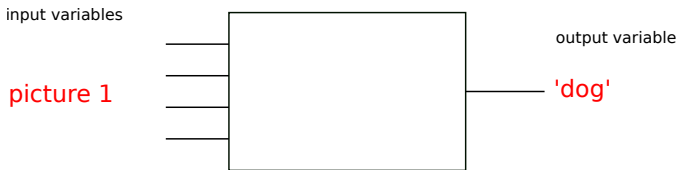
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input variables

output variable

picture 4

'cat'

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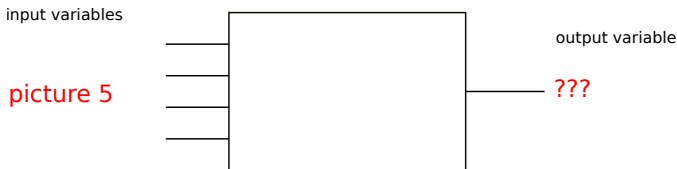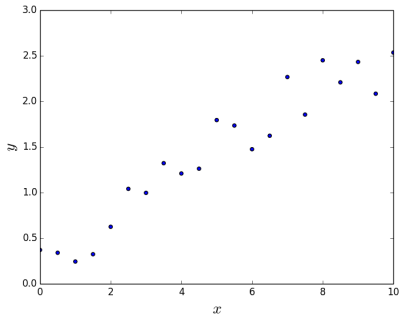
picture 5

output variable

???

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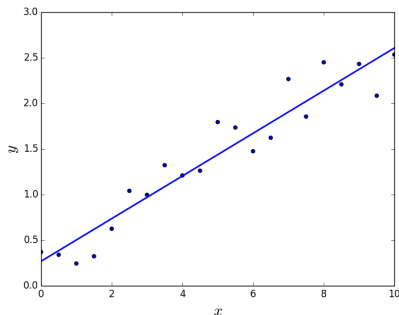
A simple predictive system

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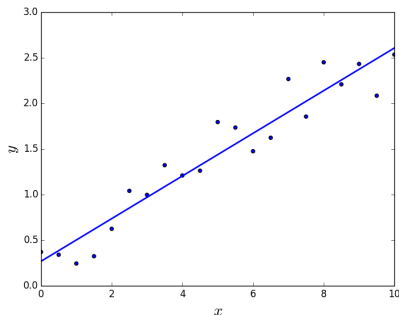
A simple predictive system

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- The line lets us predict *y* values even for values of *x* that weren't in the training examples.

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Linear regression is a statistical technique that has been around since the 19th century.

- It's been widely used, both in industry and in government. (Especially since the 1950s.)

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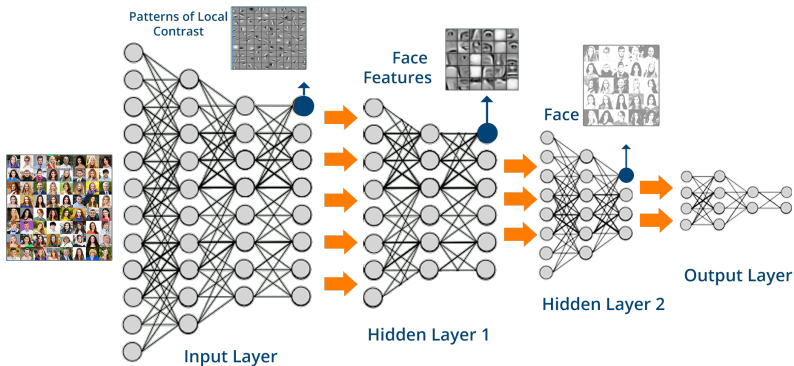
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- Current predictive systems are much more *complex*.
- There's *more data* available for current systems to train on.
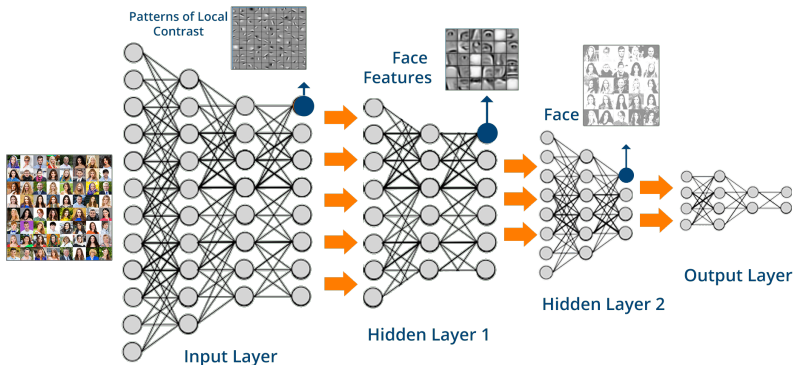
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- The circles are neuron-like 'units', linked by 'connections' whose 'weight' can be adjusted.

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- The circles are neuron-like 'units', linked by 'connections' whose 'weight' can be adjusted.
- Learning involves adjusting all the weights, to reduce the network's 'error' on the training examples.
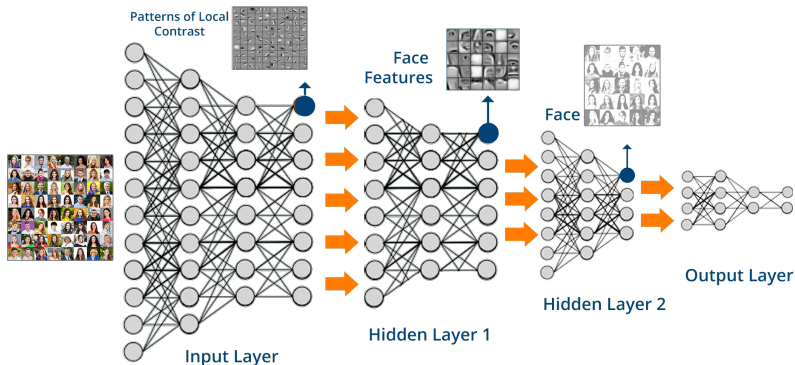
Working with modern predictive systems

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  How should we   use them??
                     oversee them??
                     regulate them??