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of Actuaries

GIRO 2016 Pricing Plenary

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This talk has 3 motivations

- To explain what is meant by big data and machine learning
- So does it really work?
- The 'Deep blue' test - will machine learning take our jobs?



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What is machine learning? Big data?

BASED ON YOUR
INTERNET HISTORY,
YOU MIGHT BE DUMB
ENOUGH TO ENJOY
EXTREME SPORTS.



Dilbert.com DilbertCartoonist@gmail.com

CLICK HERE TO BUY A
TICKET TO BASE JUMP
FROM THE INTERNA-
TIONAL SPACE STATION.



2-2-13 ©2013 Scott Adams, Inc./Dist. by Universal Uclick

I THINK
THE INTER-
NET IS
TRYING TO
KILL ME.

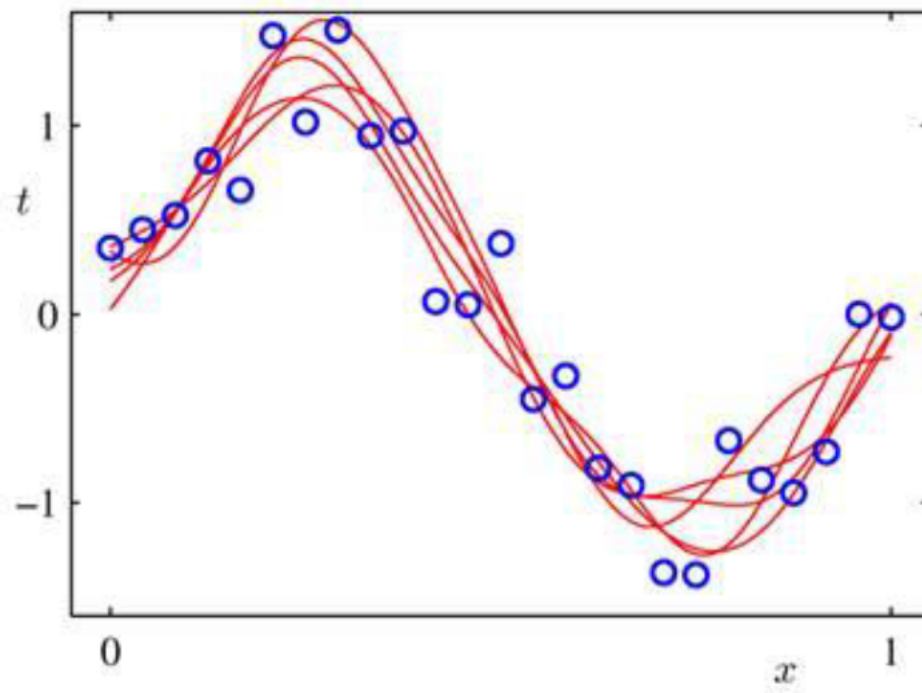
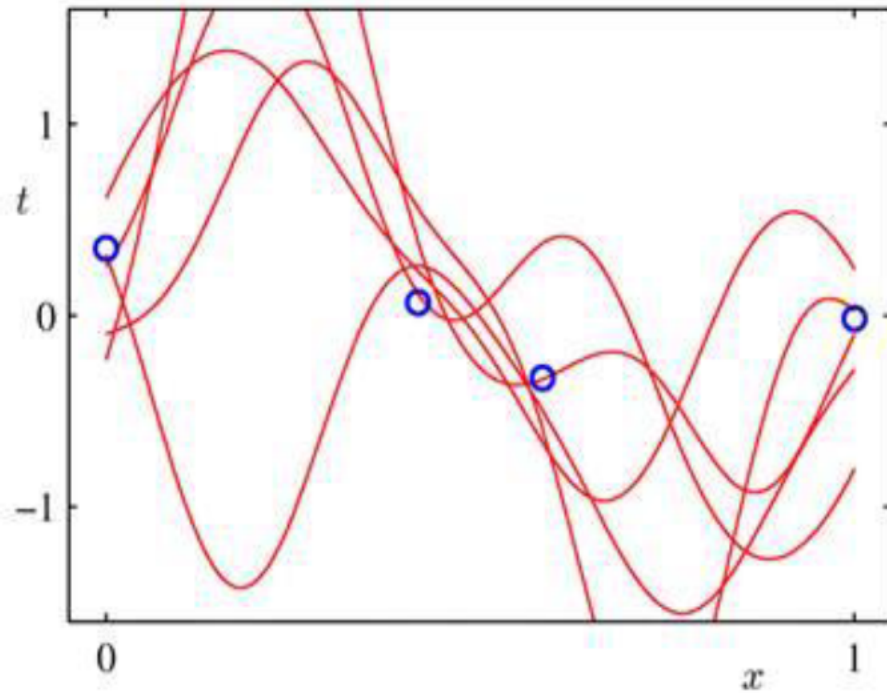


WE
CALL IT
"MACHINE
LEARNING."



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Machine learning means computers do the hard work



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Does it work?



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But does it really work?



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Can a computer really pick out patterns?



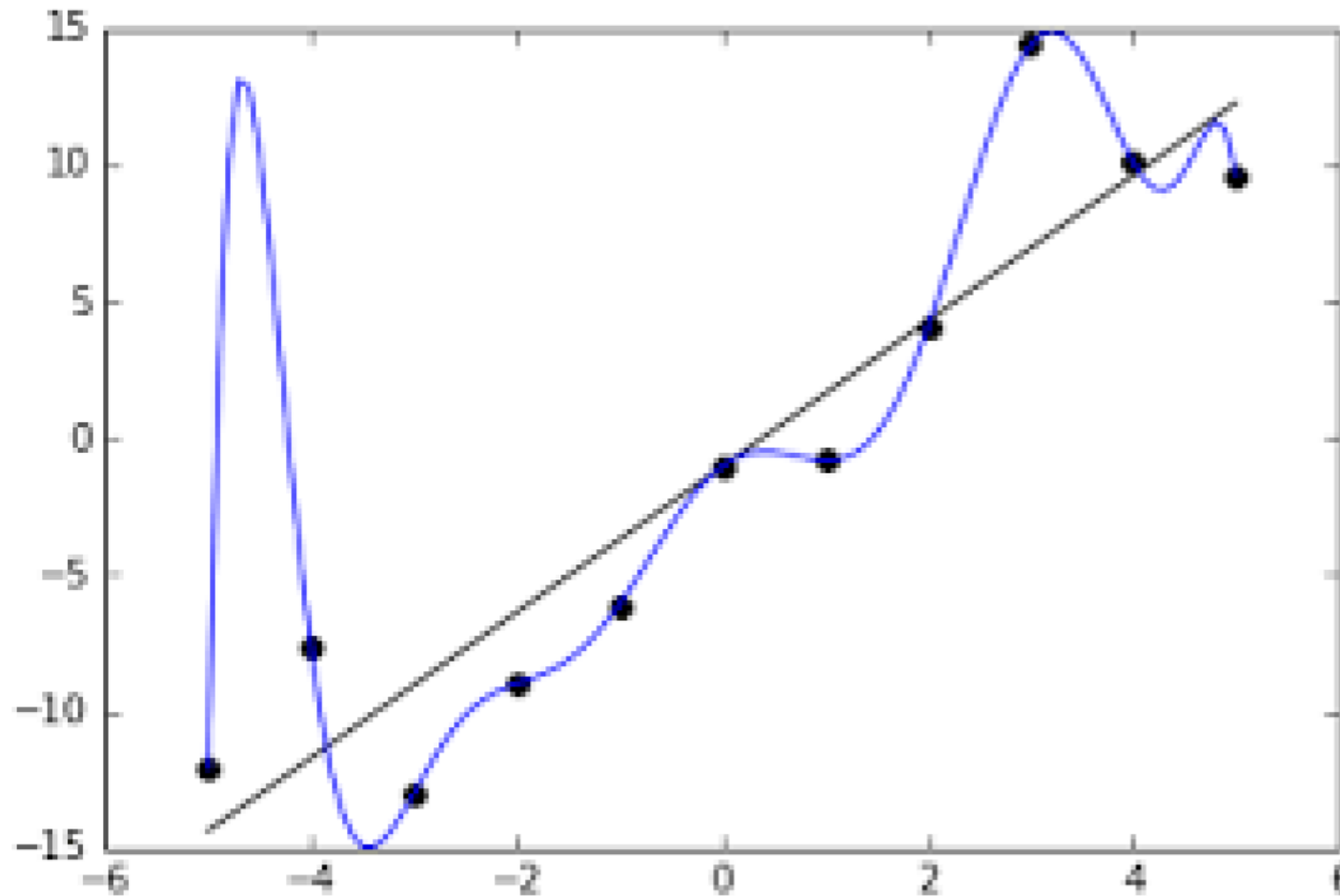
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Yes, but it may not pick out outliers very well

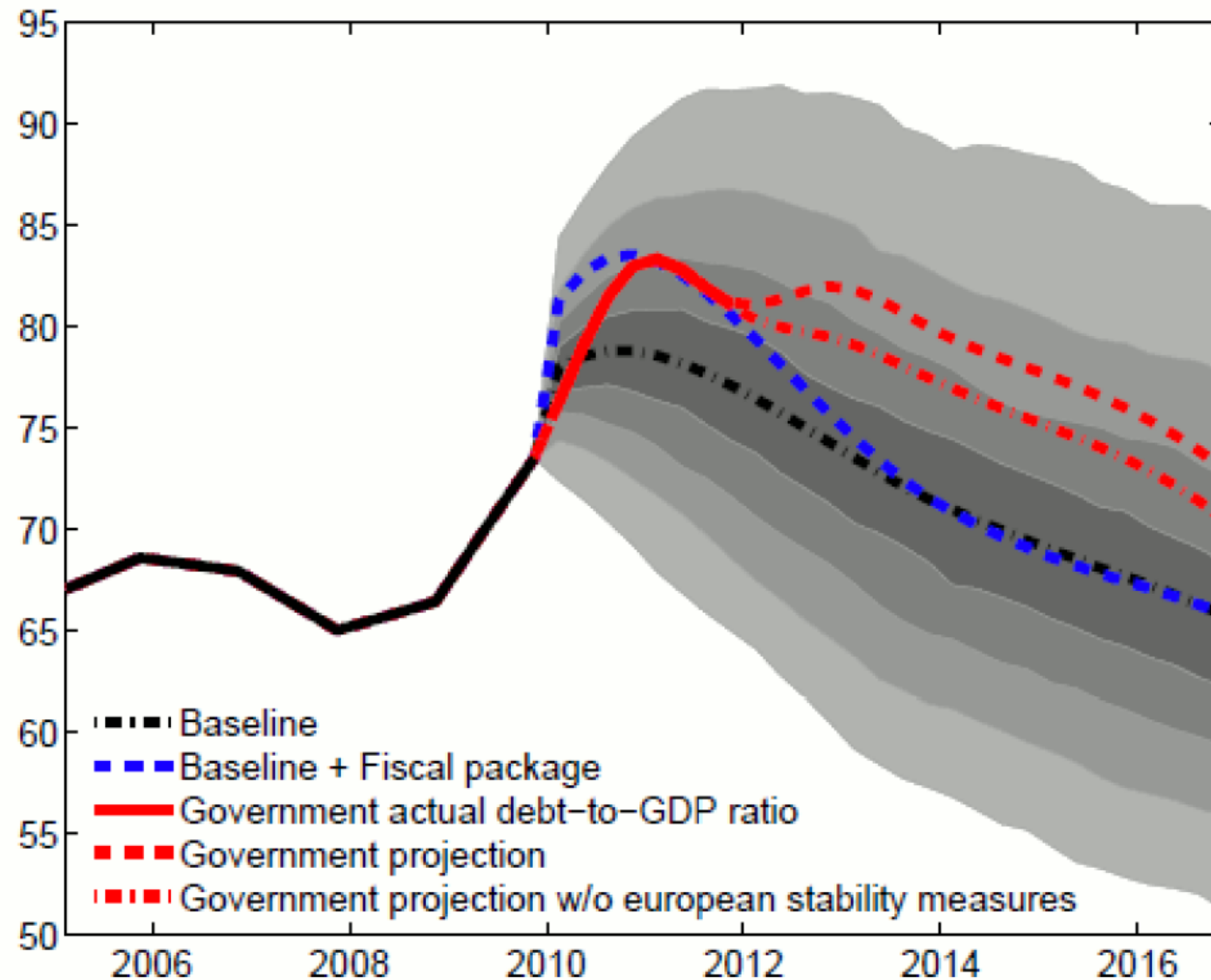


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Over-fitting and outliers are big issues



The key is understanding out of sample predictive skill



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The Beer-Mat test – do we know why it works?



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Expert Judgement vs big data



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Questions

Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.



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