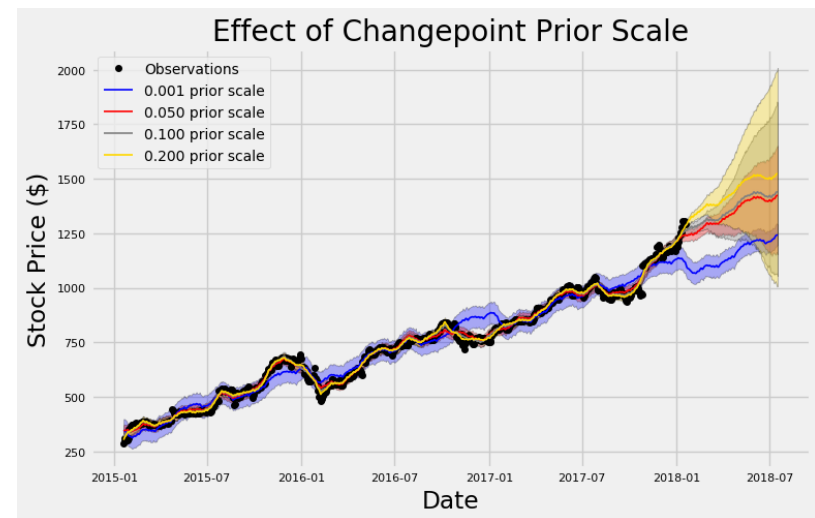


# Machine learning for I-programme

Oleg Sysoev

# TDDE01 Machine Learning

- Topics
- 
- Regression, regularization and model selection.
- Classification methods
- Dimensionality reduction and uncertainty estimation
- Kernel methods and support vector machines
- Neural networks and deep learning
- 
- Information
- 6 ECTS
- Prior knowledge of programming and statistics
- Lectures, seminars and computer assignments
- Computer exam



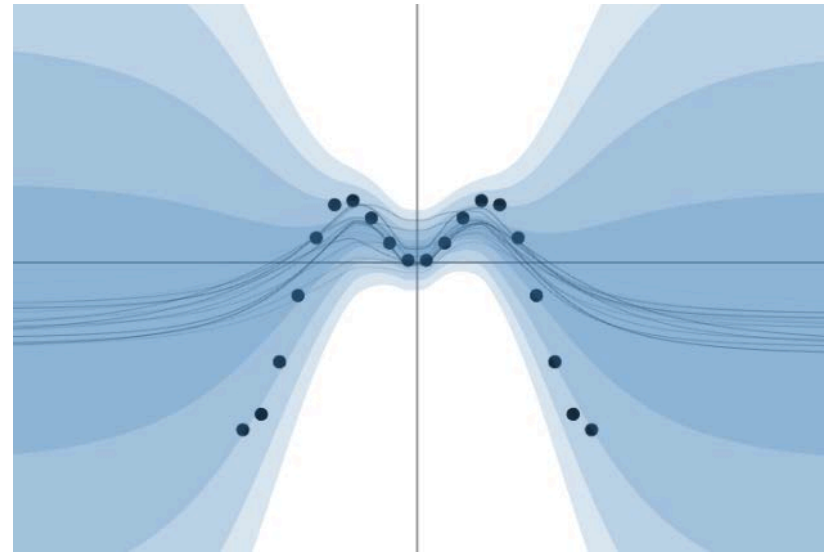
# TDDE07 Bayesian Learning

## Topics

- Bayesian regression
- Bayesian regularization
- Gibbs, MCMC
- Bayesian decision theory
- Bayesian model selection

## Information

- 6 ECTS
- Prior knowledge of mathematics, programming, statistics and machine learning
- Lectures, seminars and computer assignments
- Computer exam



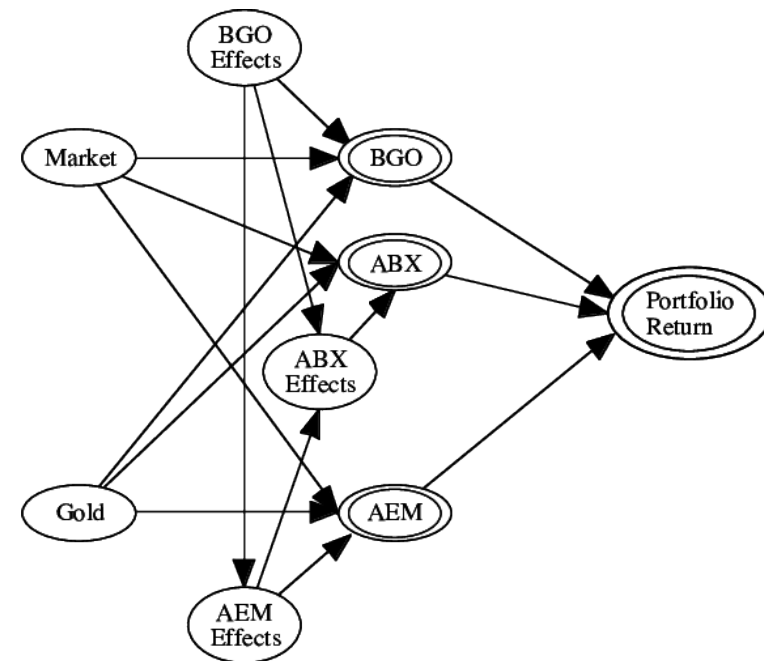
# TDDE15 Advanced Machine Learning

## Topics

- Bayesian models such as:
  - State-space models
  - Gaussian processes
  - Hidden Markov models
  - Bayesian networks
  - Markov random fields

## Information

- 6 ECTS
- Prior knowledge of programming and statistics, machine learning and Bayesian Learning
- Lectures, seminars and computer assignments
- Computer exam



# Thesis works



- Forecasting exchange rates using machine learning models with time-varying volatility
- Simulating hidden demand in dynamic pricing for hospitality industry
- Uplift modeling and customer classification
- Survival analysis of gas turbine components