# Active Classification based on Value of Classifier

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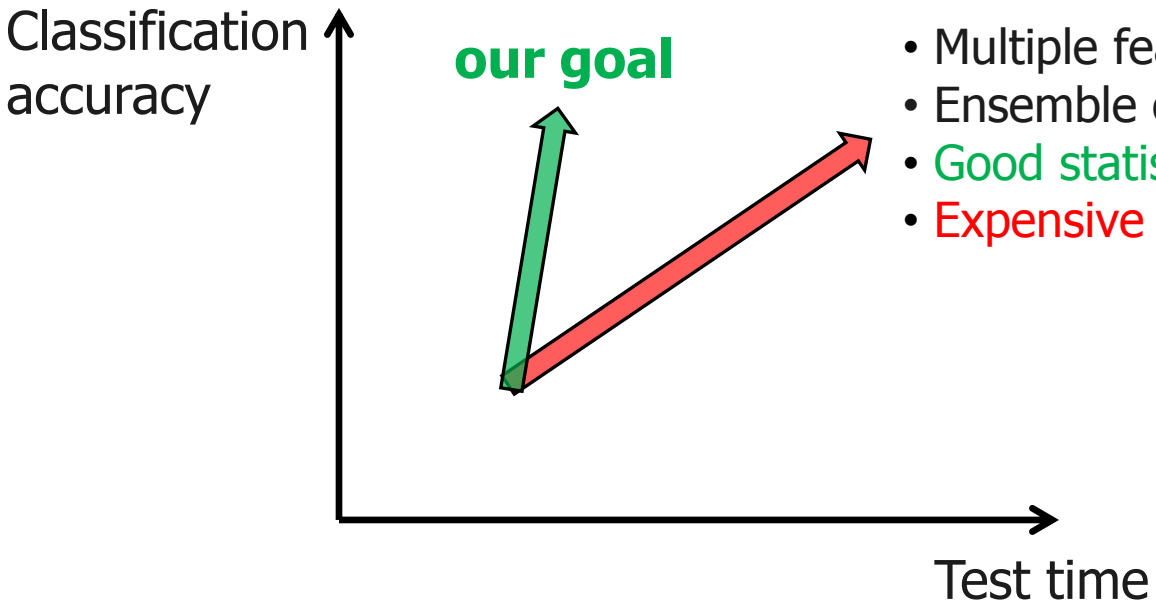
**Motivation:**

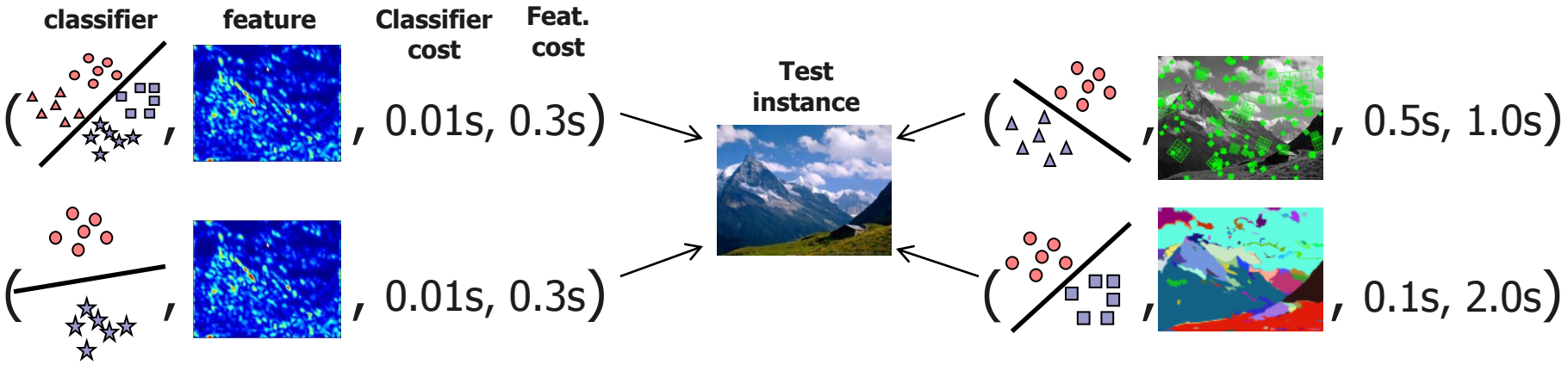



- Multiple features/kernels
- Ensemble of classifiers
- Good statistical power
- Expensive computational cost

Can we enjoy the statistical gain of using multiple features/kernels/classifiers at a small computational cost?

# Active Classification

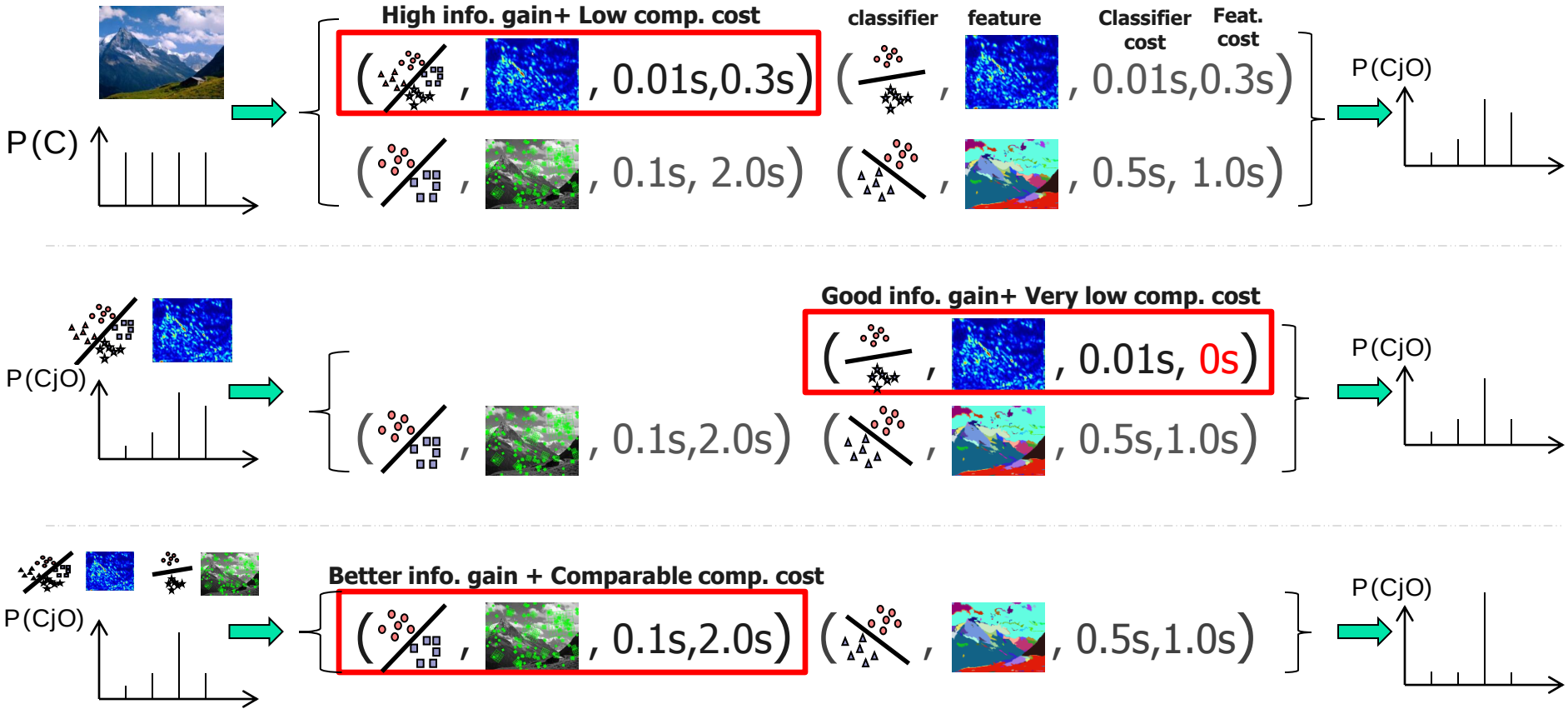
Given an ensemble of classifiers (built on multiple features):




## Active classification process:

- classification as a sensing problem: each classifier is viewed as a potential *observation* that might inform our classification process
- a dynamic process: observations are selected sequentially based on previous observations
- selection based on *value of classifier*
  - A value-theoretic computation that balances an estimate of the expected classification gain and its computational cost

# Active Classification




Model/Algorithm Highlights: instance-specific, dynamic, robust, joint consideration of statistical and computational properties

# Results (multiple features)