



Active Classification based on Value of Classifier

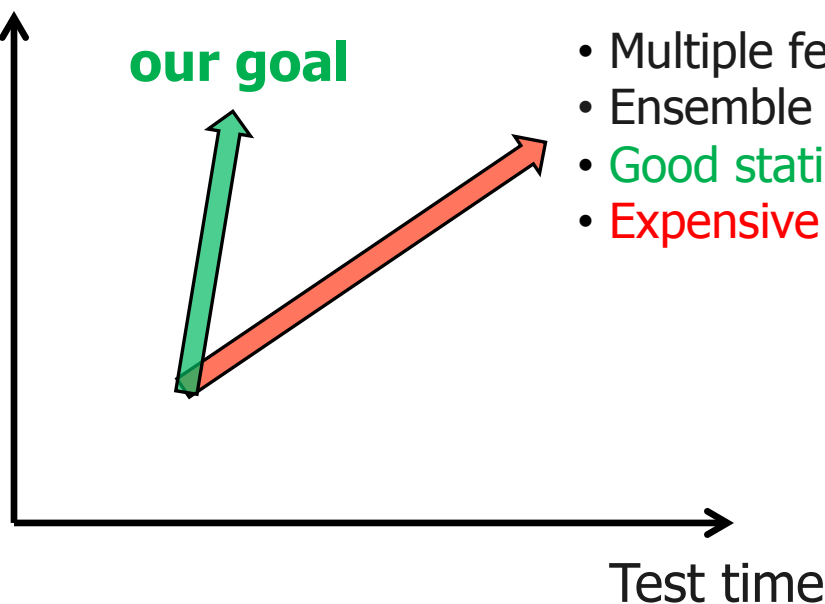


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Motivation:

Classification
accuracy



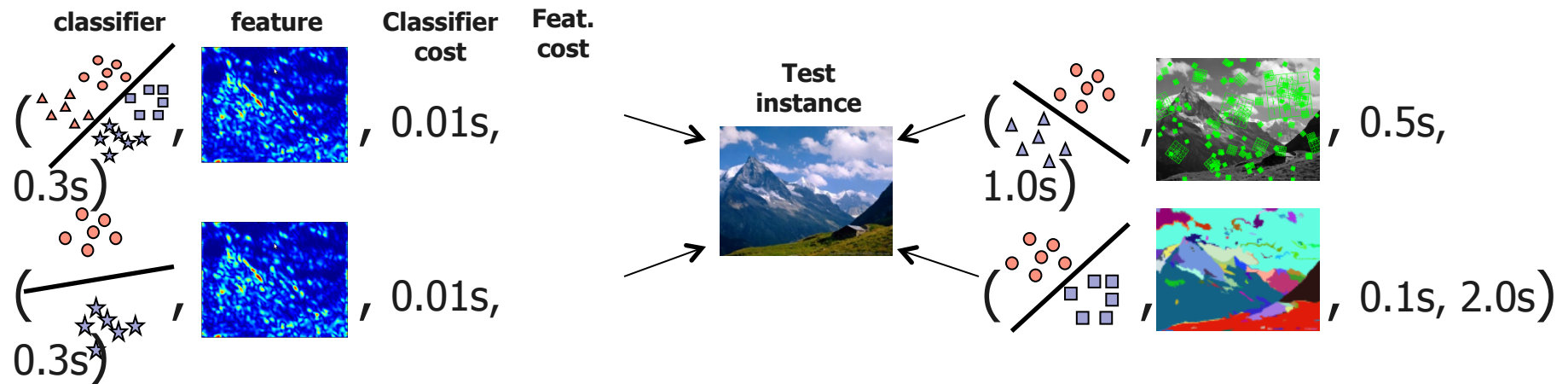
- Multiple features/kernels
- Ensemble of classifiers
- Good statistical power
- Expensive computational cost

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):

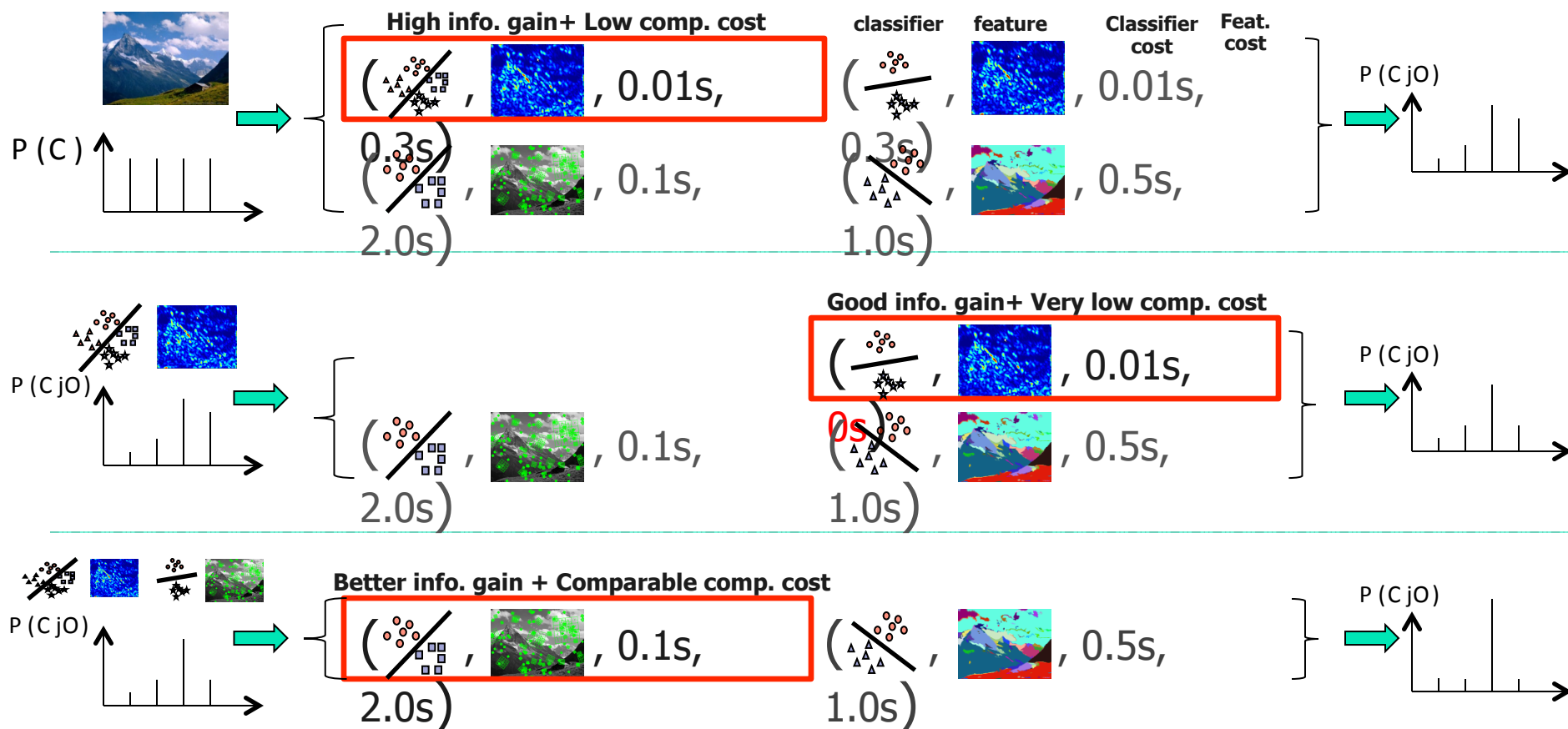


Active classification process:

- 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)

results on scene15 dataset

