

# Large-Margin Determinantal Point Processes

Wei-Lun Chao\*<sup>1</sup>, Boqing Gong\*<sup>1</sup>, Kristen Grauman<sup>2</sup>, and Fei Sha<sup>1</sup>

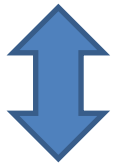
<sup>1</sup>University of Southern California, <sup>2</sup>University of Texas at Austin

- **Problem:** How to select diverse & representative subsets?
- **Our Idea:** Learning a **discriminative** DPP
  - ✓ **Margin** based parameter estimation to explicitly track errors in selecting subsets
  - ✓ **Balancing** evaluation metrics such as precision and recall
  - ✓ **Multiple kernel** parameterization for model flexibility
  - ✓ **Superb** results on video & document summarization

# Balancing Evaluation Metrics

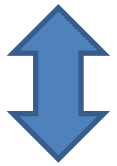
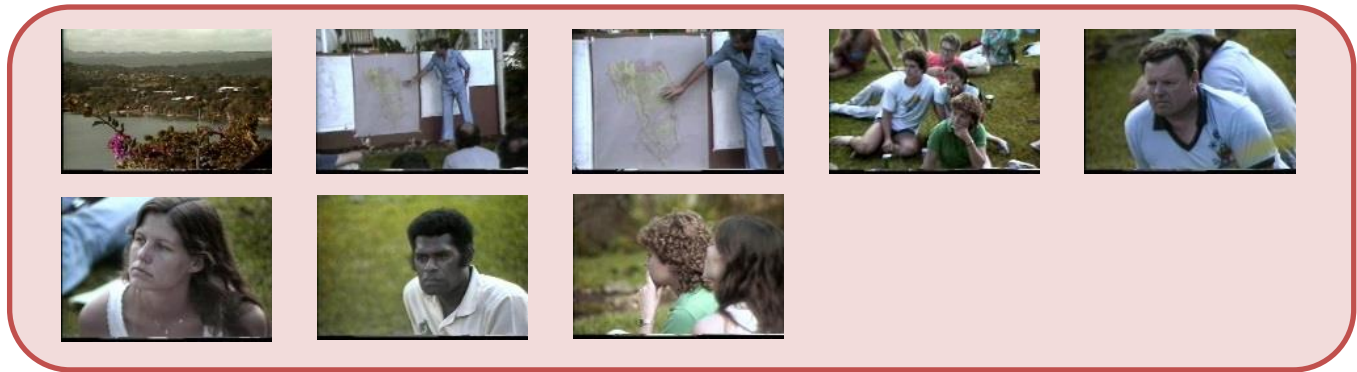
**Precision = 0.76**

Recall = 0.81



Precision = 0.55

Recall = 0.91



Precision = 0.48

**Recall = 0.97**

