Real-time visual tracking using complementary kernel support correlation filters

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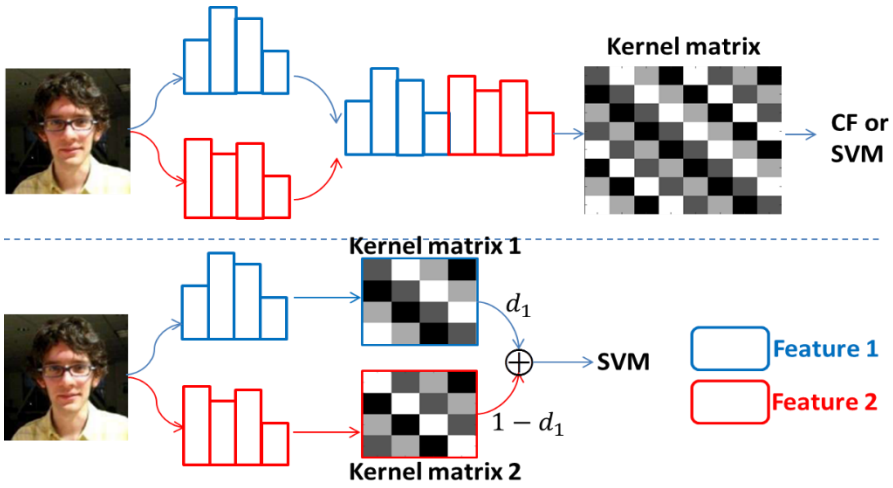
Problems & Ideas

- Problems of tracking accuracy and efficiency over SVM based trackers
  - the tradeoff between sampling and budgeting samples
  - how to effectively fuse different types of features to learn a robust target representation
- Ideas: Complementary Kernel Support Correlation Filters
  - handles the first factor with the help of the circulant structures of the samples
  - the second one by a multi-kernel learning mechanism



Main Contributions

the proposed method achieves a favorable performance against various state-of-the-art trackers with a speed of 50 fps on a single CPU.

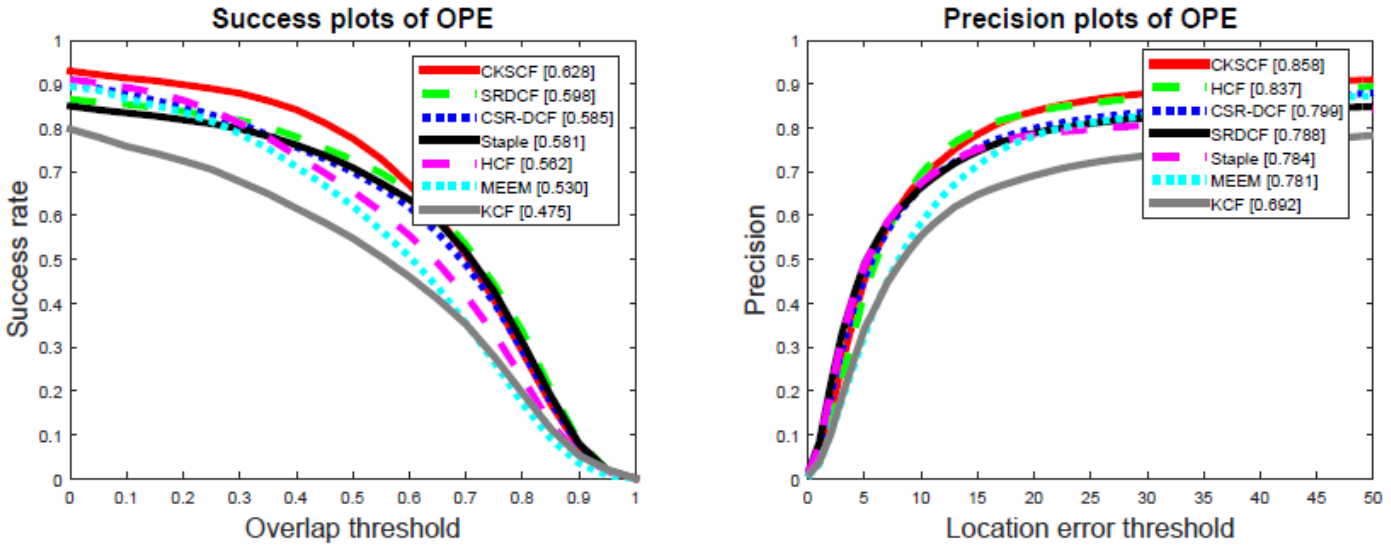


Fig. 2 Overall success and precision plots of OPE of the 7 trackers in OTB100. The ranking scores for each tracker are shown in the legend (best viewed on high-resolution display).

Table 4 EAO, A and R raw values evaluated on VOT2016. The **first**, **second** and **third** best results are highlighted in **red**, **blue** and **green**.

Tracker	CCOT	TCNN	SSAT	**CKSCF**	MLDF	Staple	DDC	EBT	SRBT	STAPLEp
EAO	**0.331**	**0.325**	0.321	0.313	0.311	0.295	0.293	0.291	0.290	0.286
A	0.539	0.554	**0.577**	**0.562**	0.490	0.544	0.541	0.465	0.496	**0.557**
R	**0.238**	0.268	0.291	0.258	**0.233**	0.378	0.345	**0.252**	0.350	0.368