PAN 2010 Results

Uncovering Plagiarism, Authorship, and Social Software Misuse

Bauhaus-Universität Weimar – Martin Potthast, Benno Stein
Andreas Eiselt, Teresa Holfeld
Universidad Politécnica de Valencia – Alberto Barrón-Cedeño, Paolo Rosso
University of the Aegean – Efstathios Stamatatos
Bar-Ilan University – Moshe Koppel

http://pan.webis.de

The PAN Competition

The PAN Competition

2nd International Competition on Plagiarism Detection, PAN 2010

These days, plagiarism and text reuse is rife on the Web.

Task:

> Given a set of suspicious documents and a set of source documents, find all plagiarized sections in the suspicious documents and, if available, the corresponding source sections.

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Corpus:

PAN-PC-10

- 27 073 documents (obtained from 22 874 books from the Project Gutenberg)
- 68 558 plagiarism cases (about 0-10 cases per document)
- 6 plagiarism-relevant parameters (length, language, task, obfuscation, topic, fraction)

[Potthast et al., COLING 2010]

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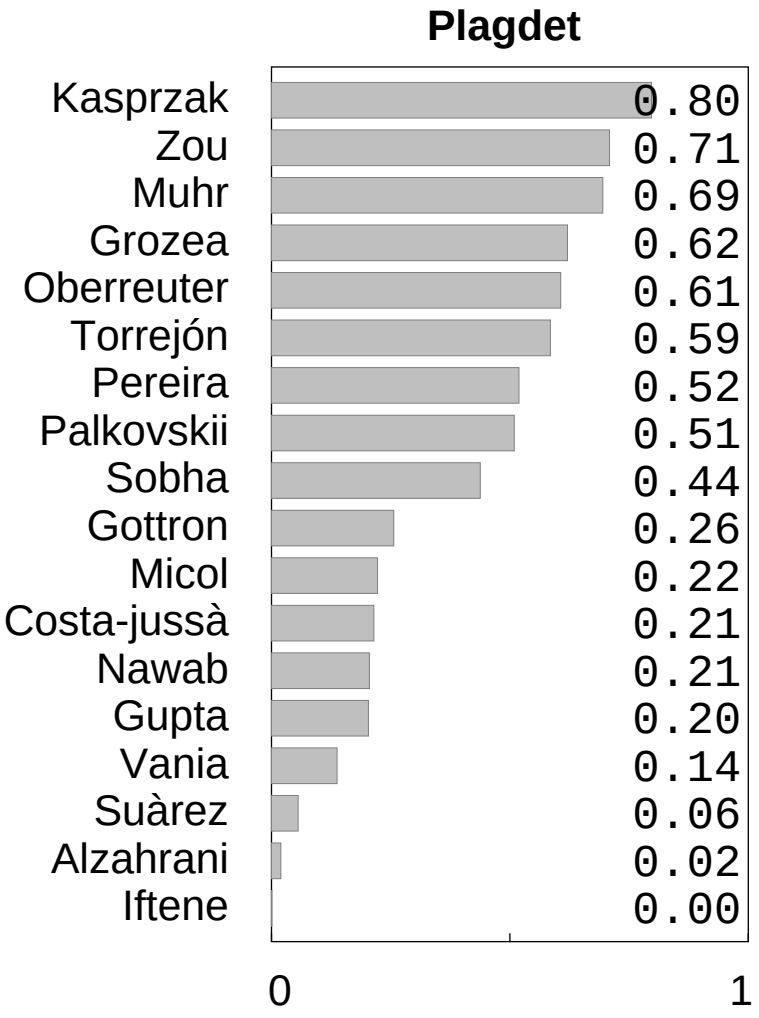
Plagiarism Detection Results



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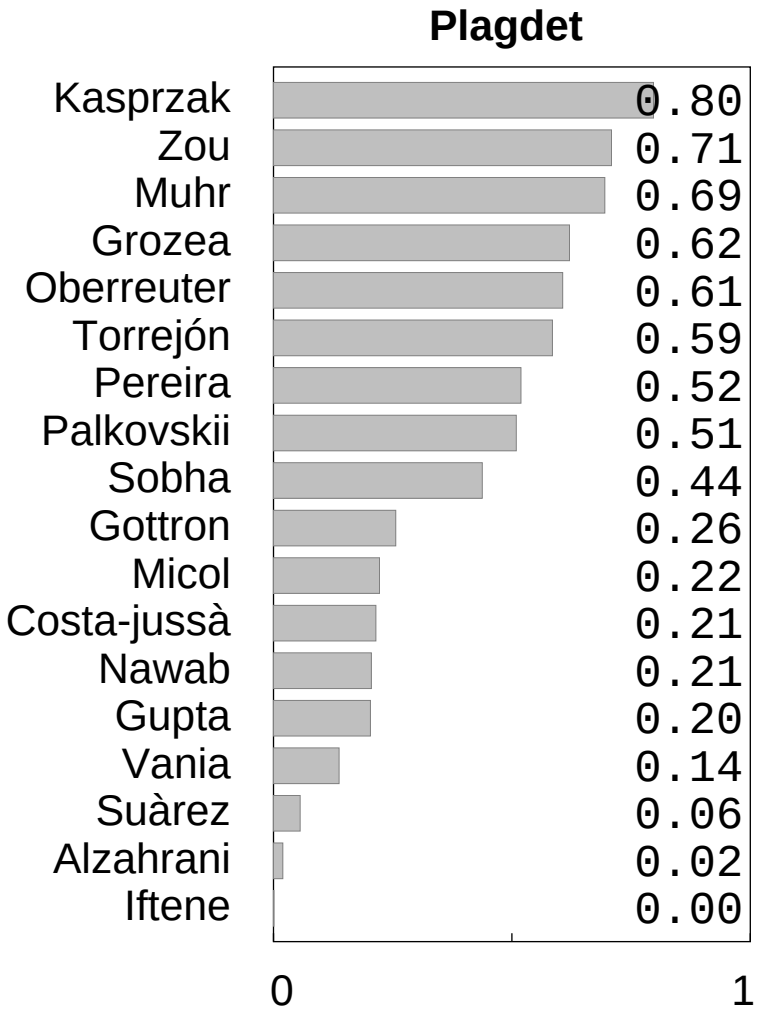
Plagiarism Detection Results



- Plagdet combines precision, recall, and granularity:

$$\textit{plagdet}(S,R) = \frac{F_1}{\log_2(1+\textit{gran}(S,R))}$$

$$\textit{prec}(S,R) = \frac{1}{|R|}\sum_{r\in R}\frac{\left|\bigcup_{s\in S}(\mathbf{s}\sqcap\mathbf{r})\right|}{|\mathbf{r}|}$$

$$\textit{rec}(S,R) = \frac{1}{|S|}\sum_{s\in S}\frac{\left|\bigcup_{r\in R}(\mathbf{s}\sqcap\mathbf{r})\right|}{|\mathbf{s}|}$$

- The granularity *gran* measures the average number of times a plagiarism case is detected.

[Potthast et al., COLING 2010]

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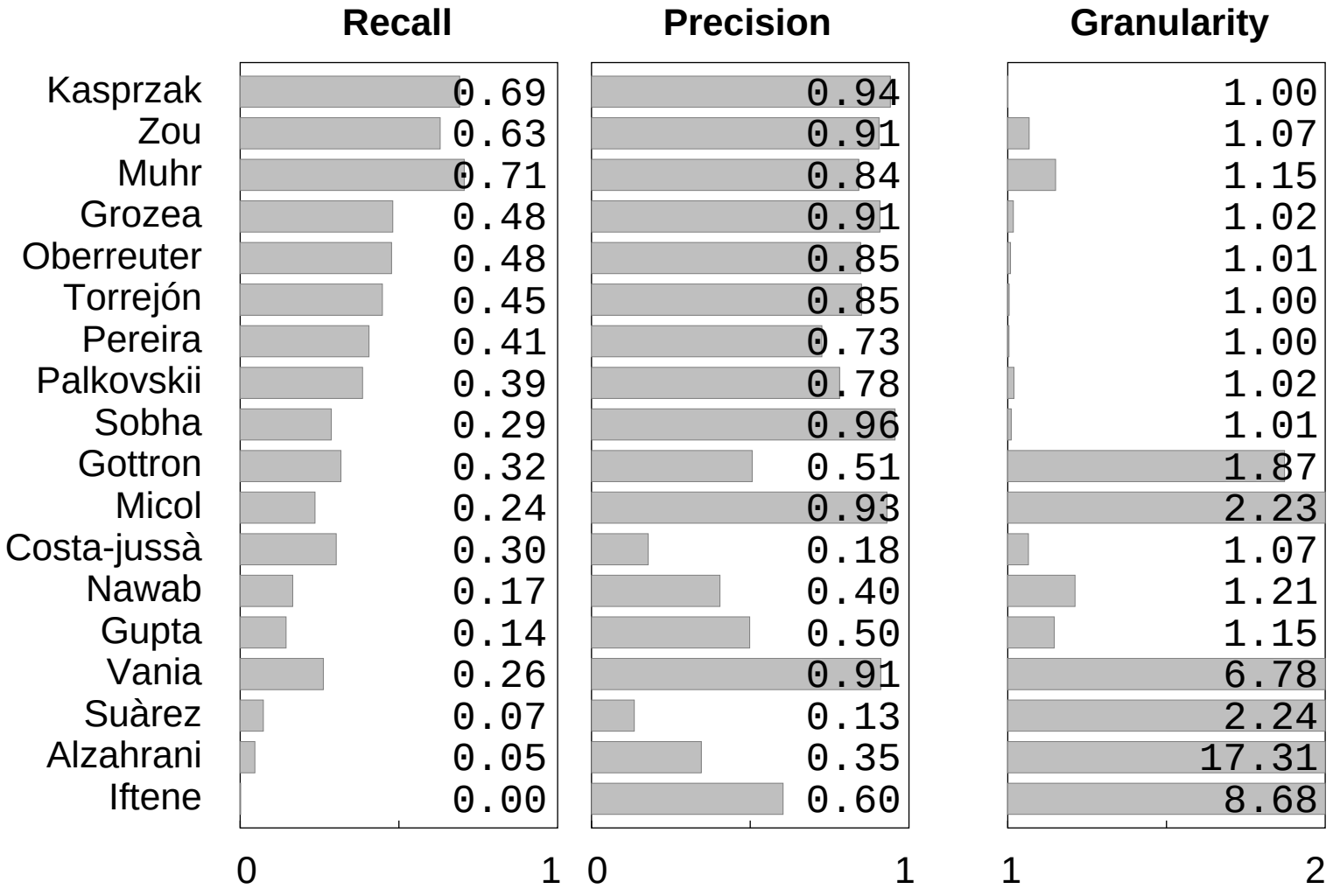

The PAN Competition

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1st International Competition on Wikipedia Vandalism Detection, PAN 2010

Every edit on Wikipedia has to be double-checked for integrity—
even if it affects just one char.

Task:

Given a set of edits on Wikipedia articles,
distinguish ill-intentioned edits from well-intentioned edits.

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Task:

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distinguish ill-intentioned edits from well-intentioned edits.

Corpus:

PAN-WVC-10

- 32 452 edits (sampled from a week's worth of Wikipedia edit logs)
- 28 468 different edited articles (edit frequency resembles article importance)
- 2391 edits are vandalism (a 7% ratio is in concordance with the literature)

[Potthast, SIGIR 2010]

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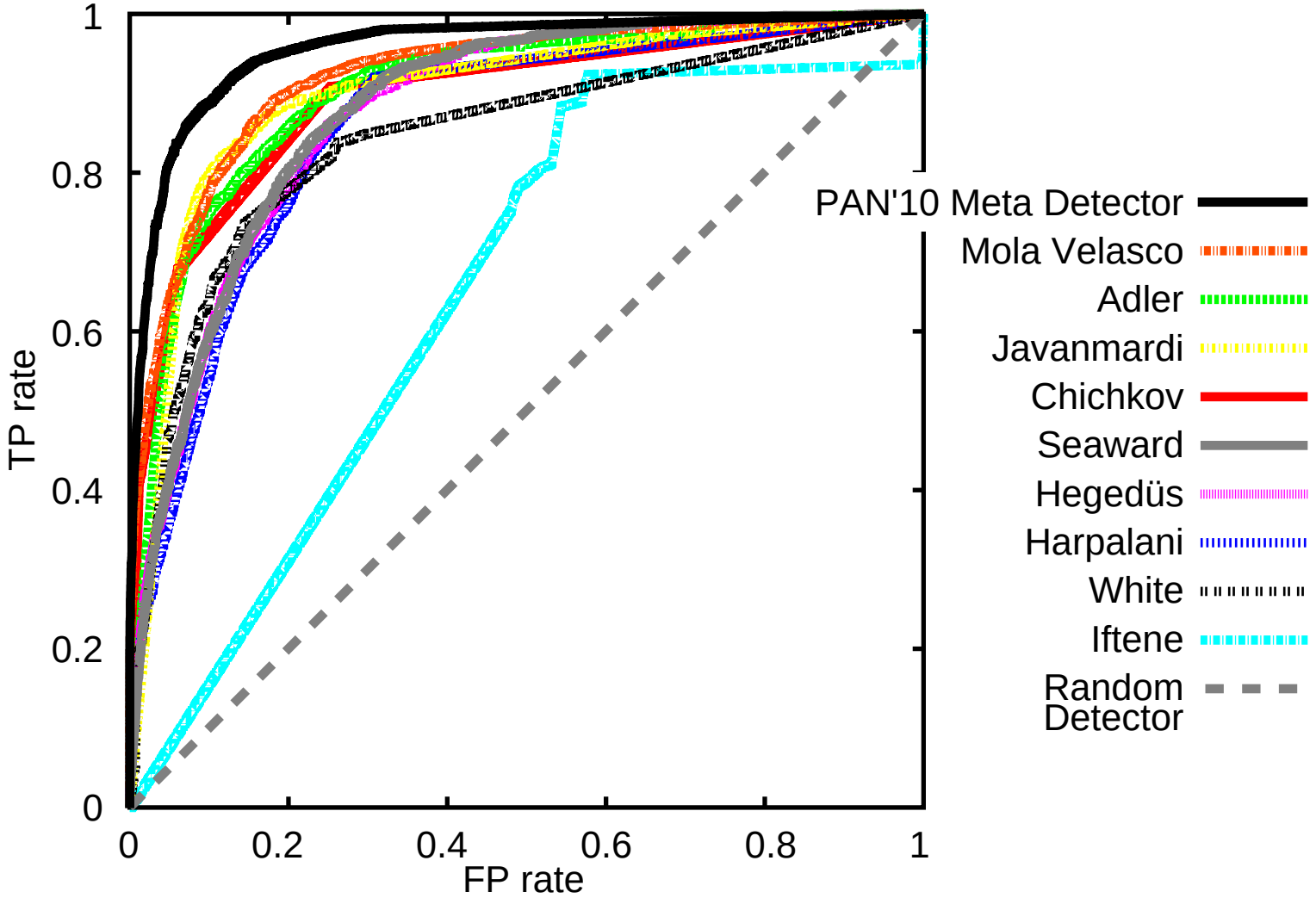
Plagiarism Detection Results



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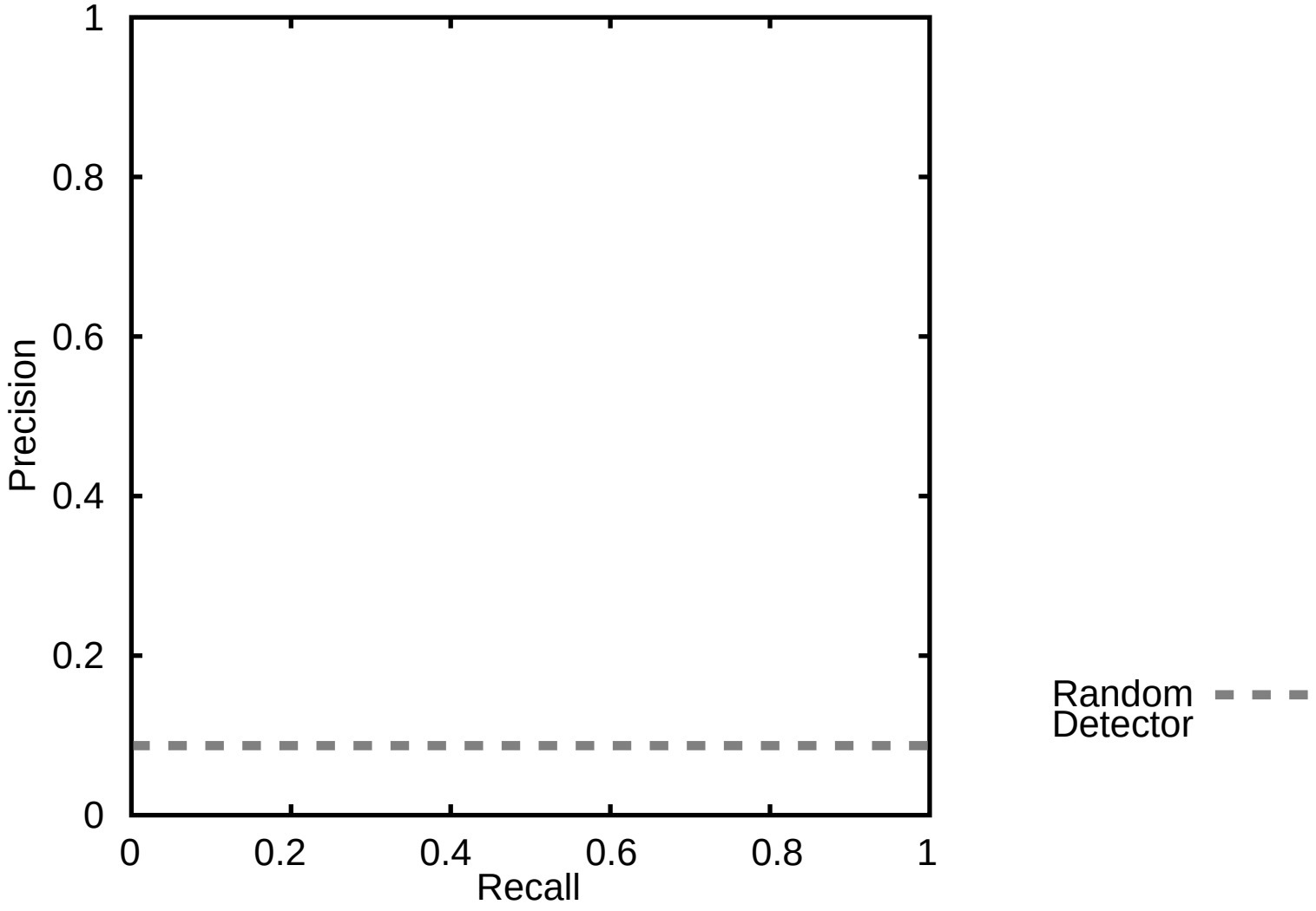
Vandalism Detection Results



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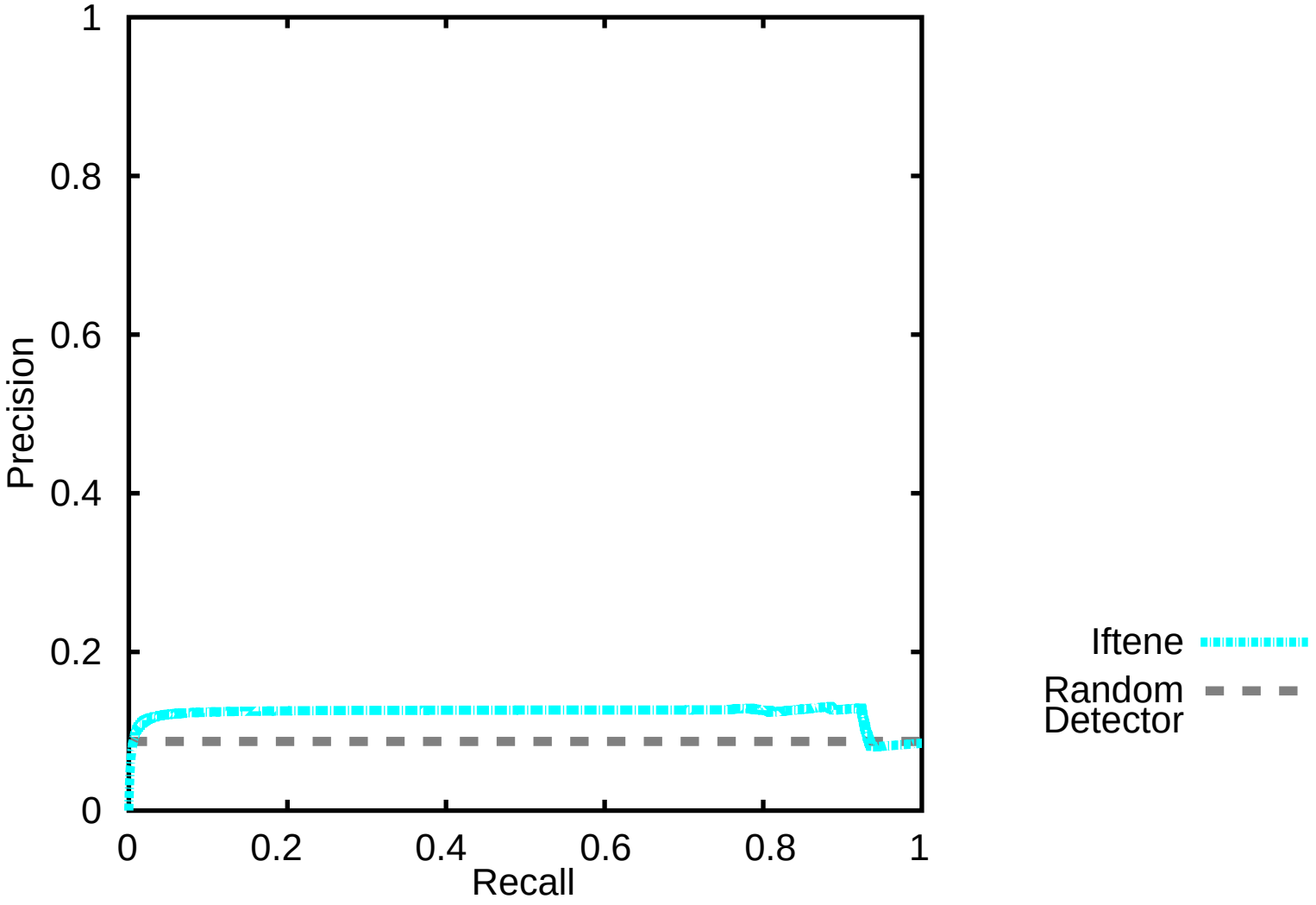

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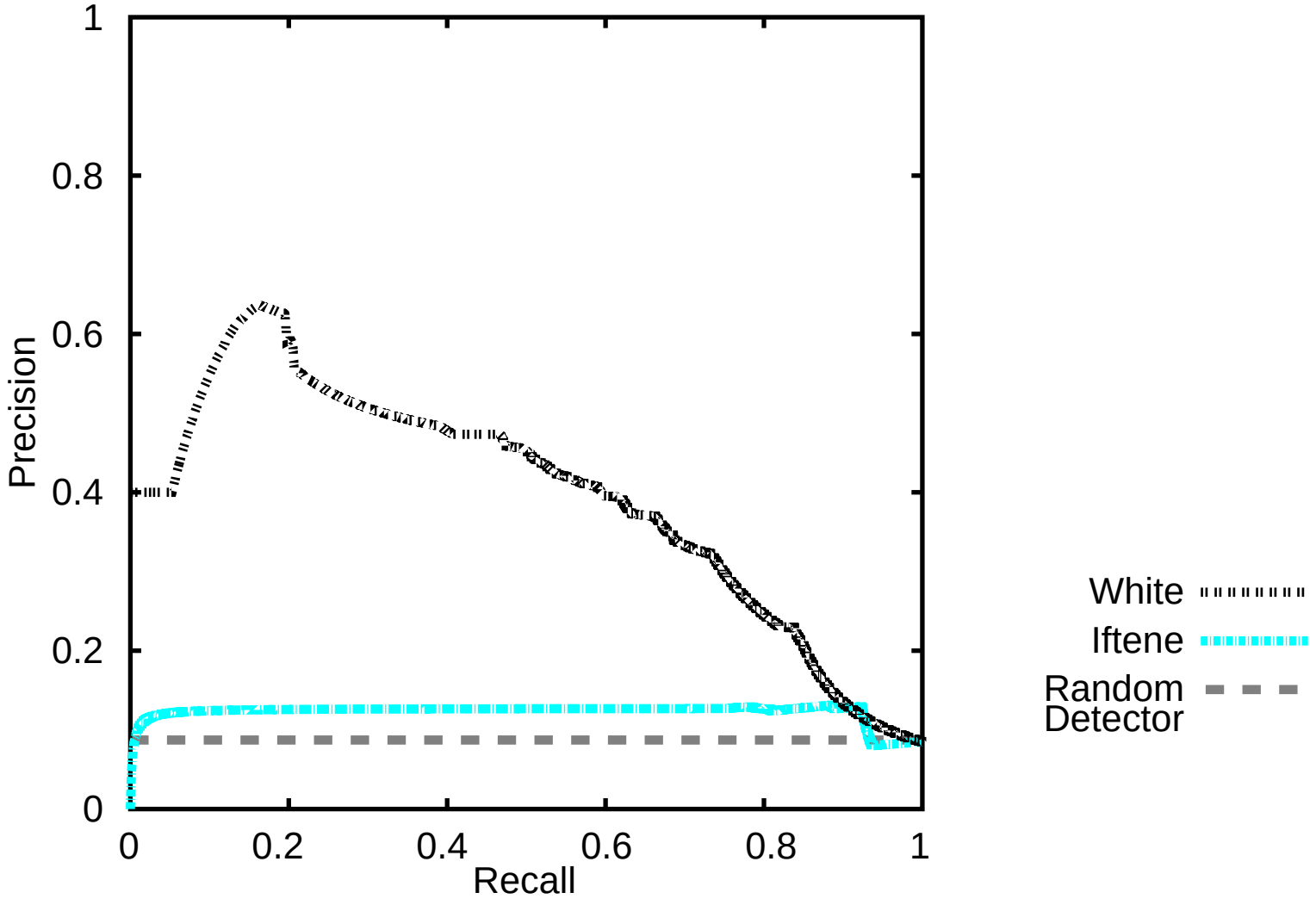

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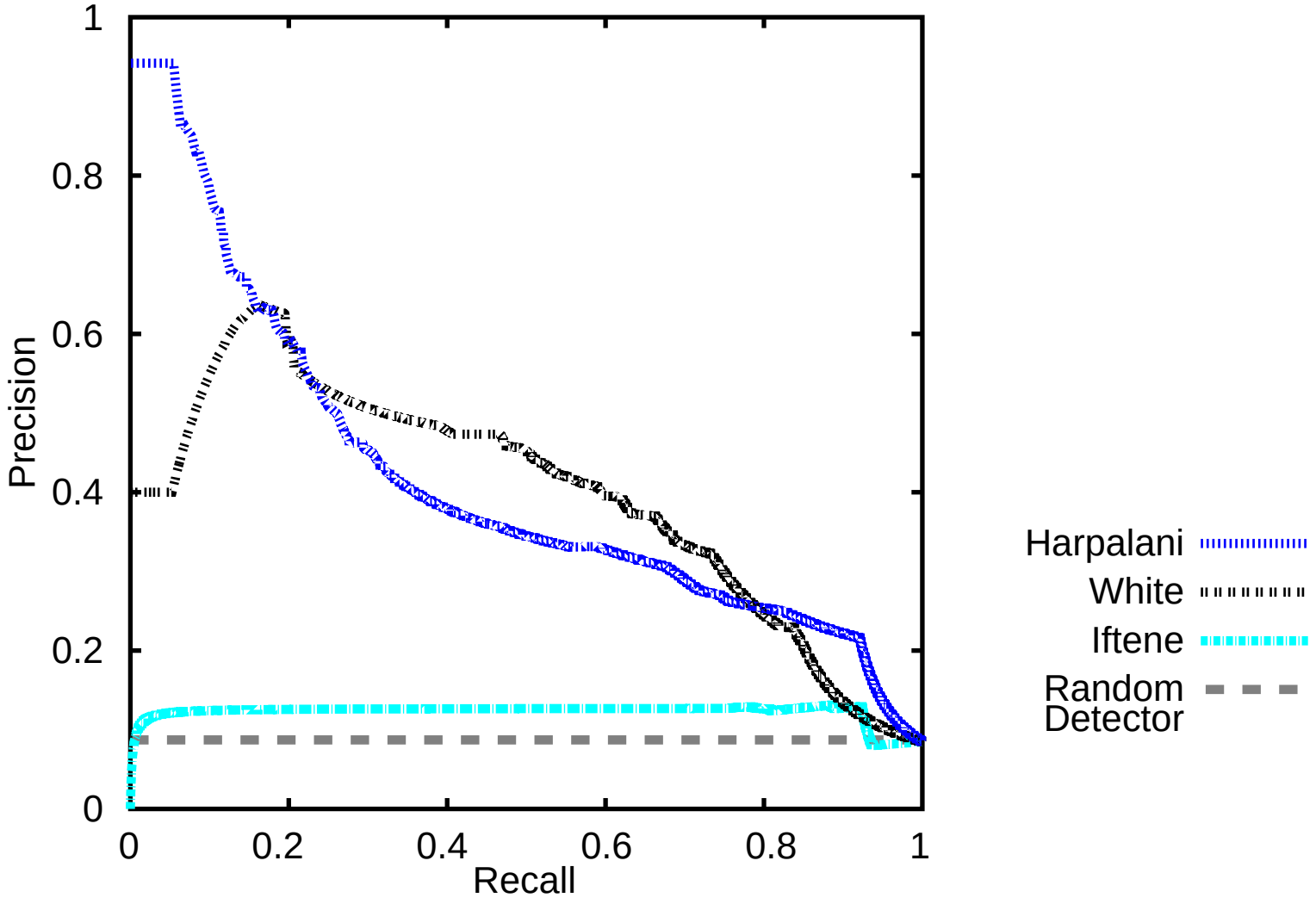

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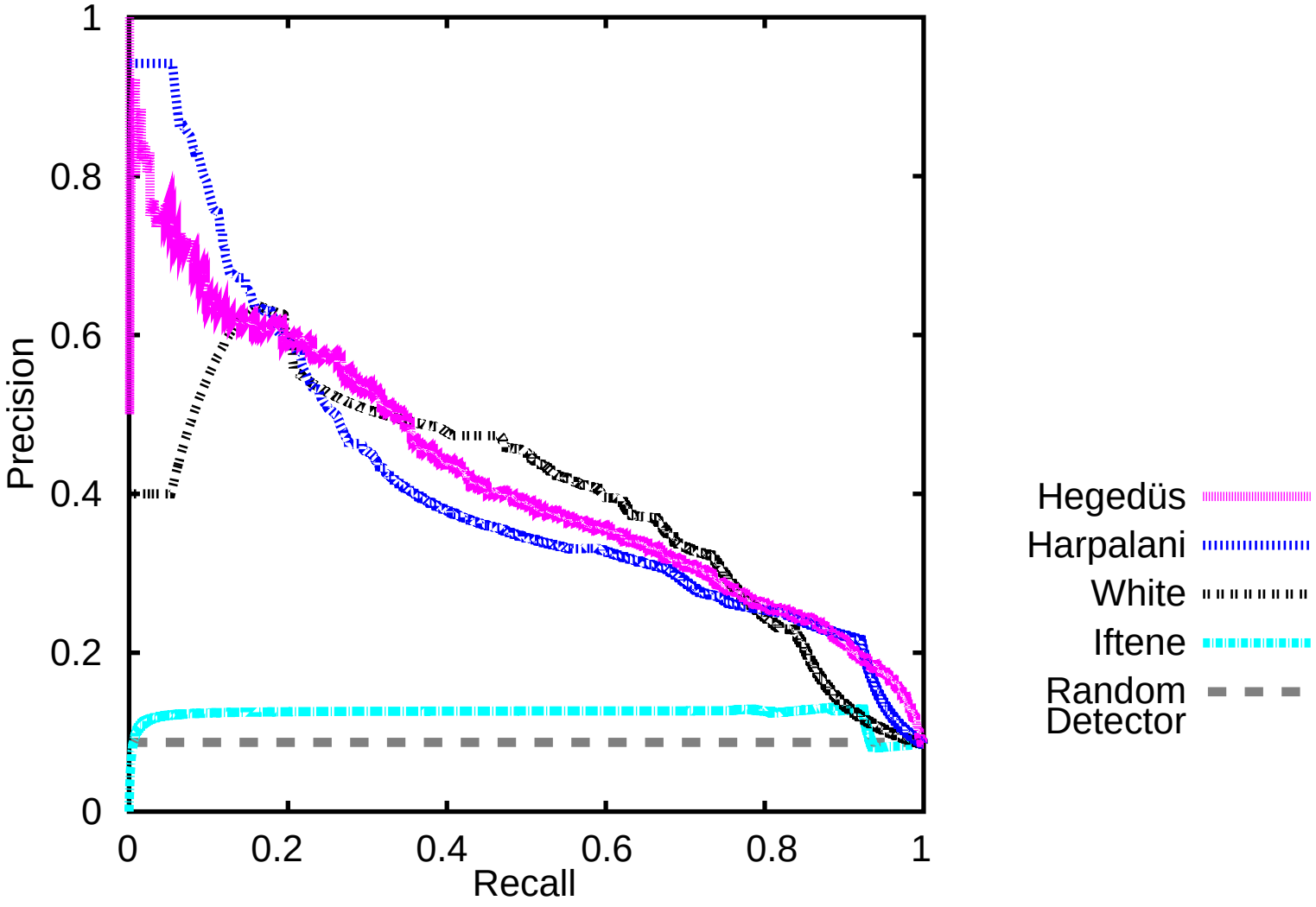

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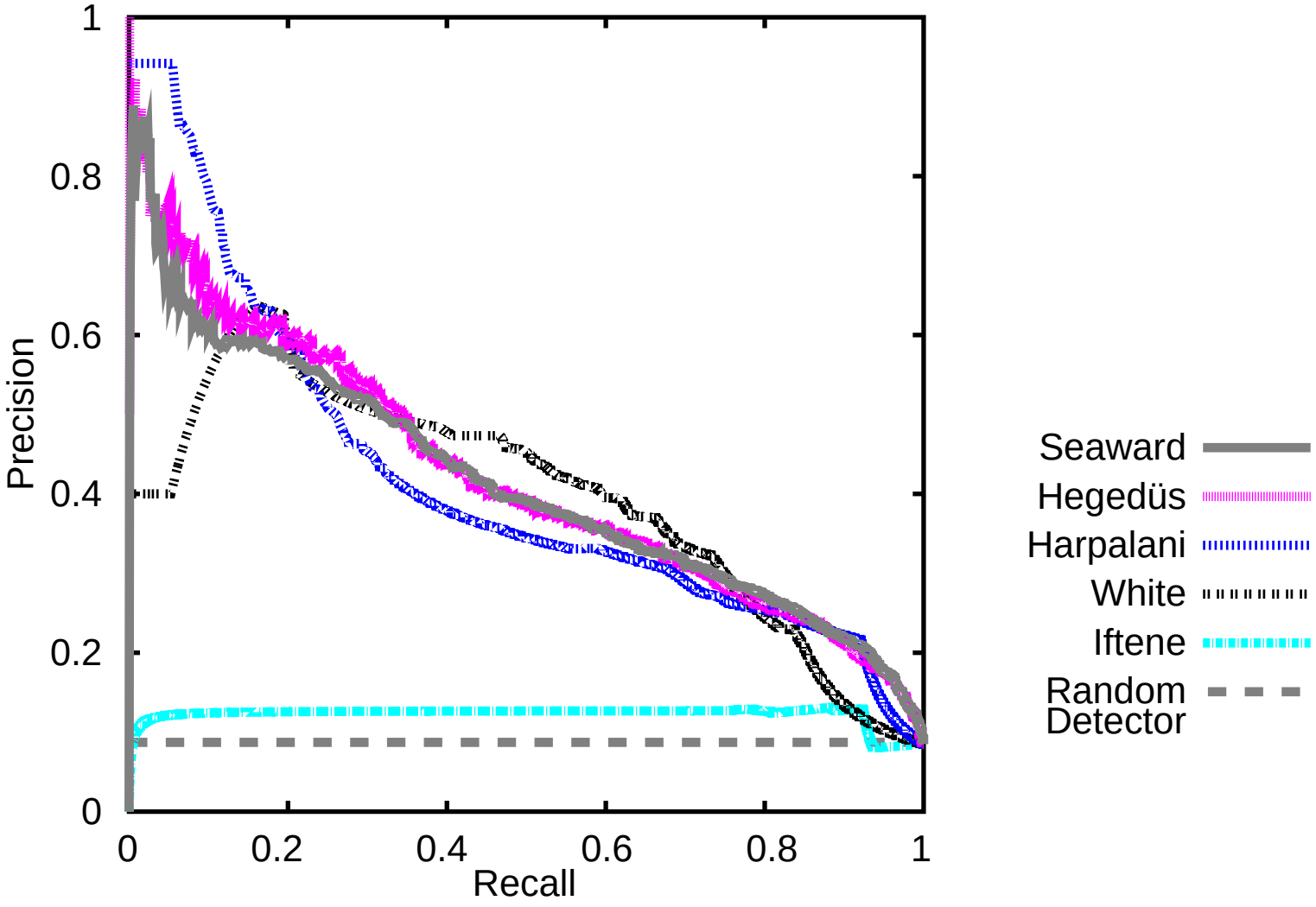

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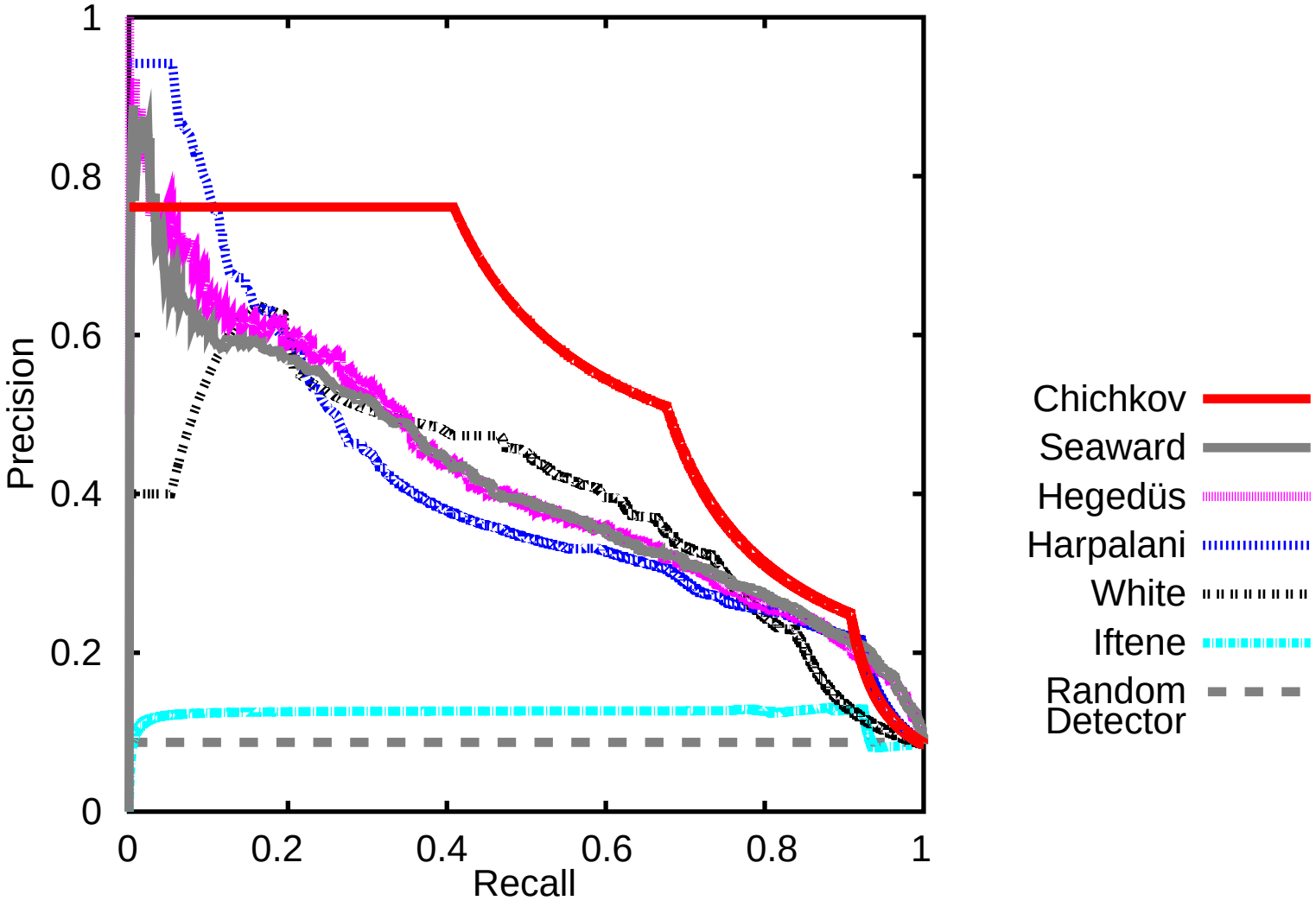

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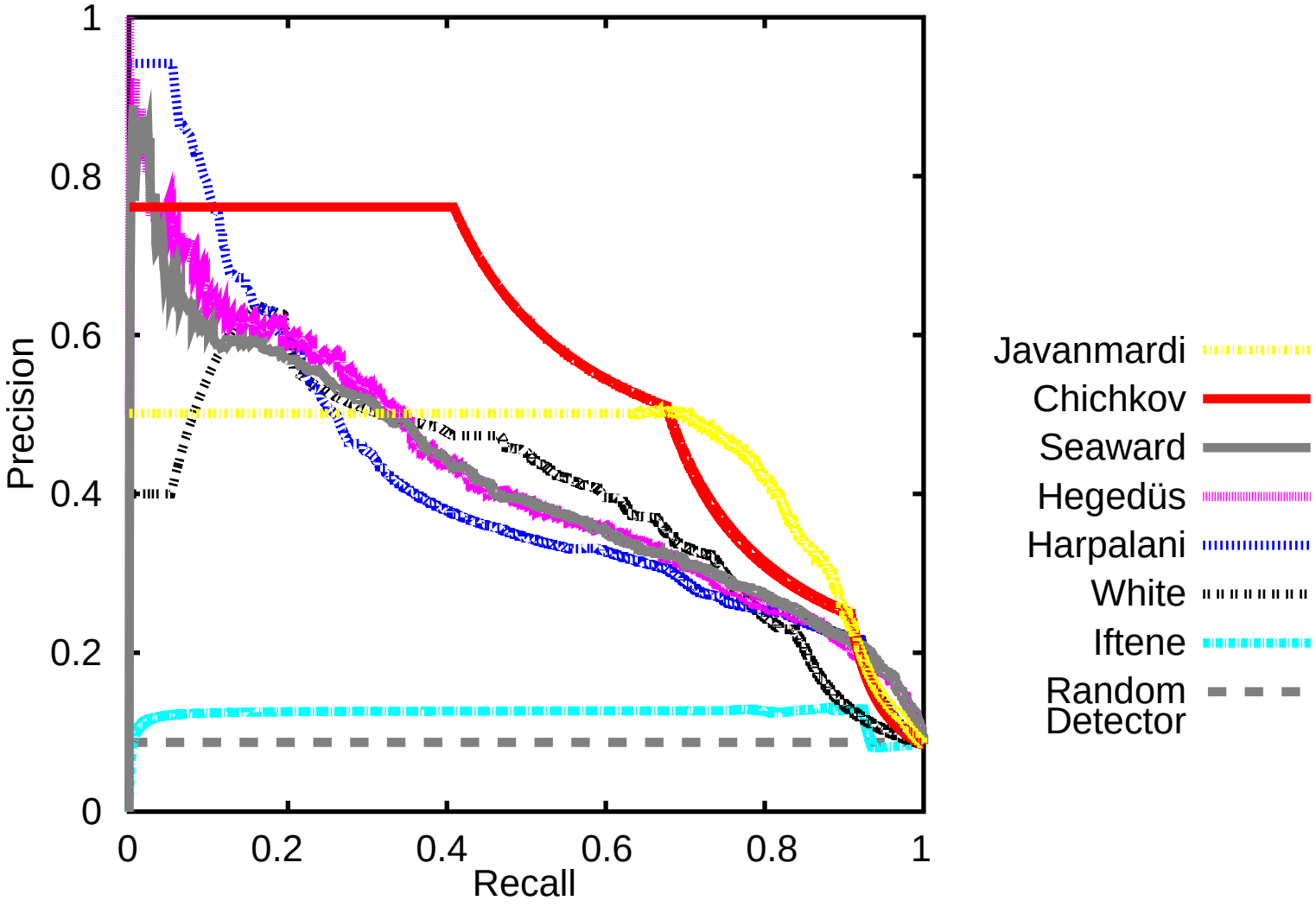

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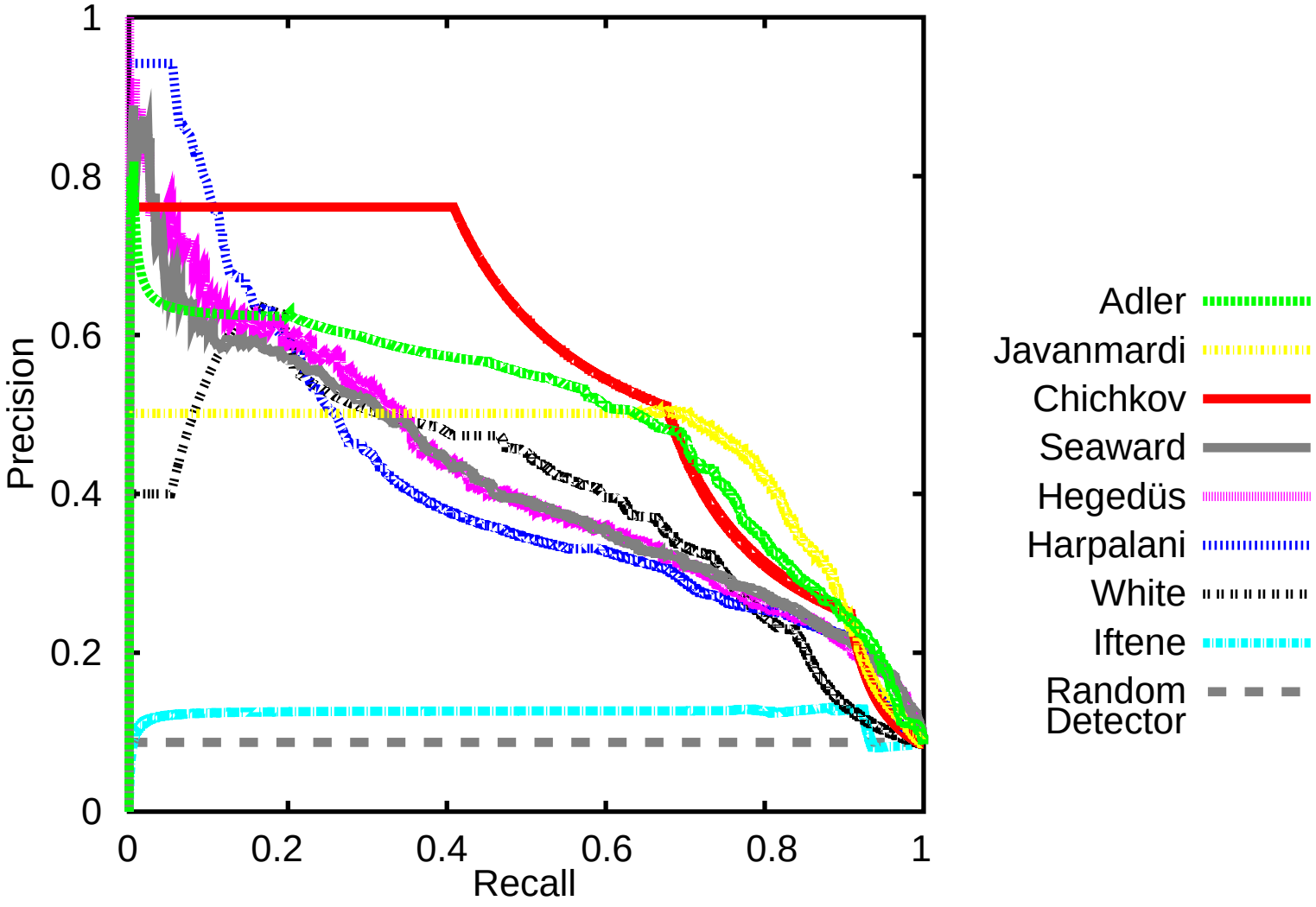

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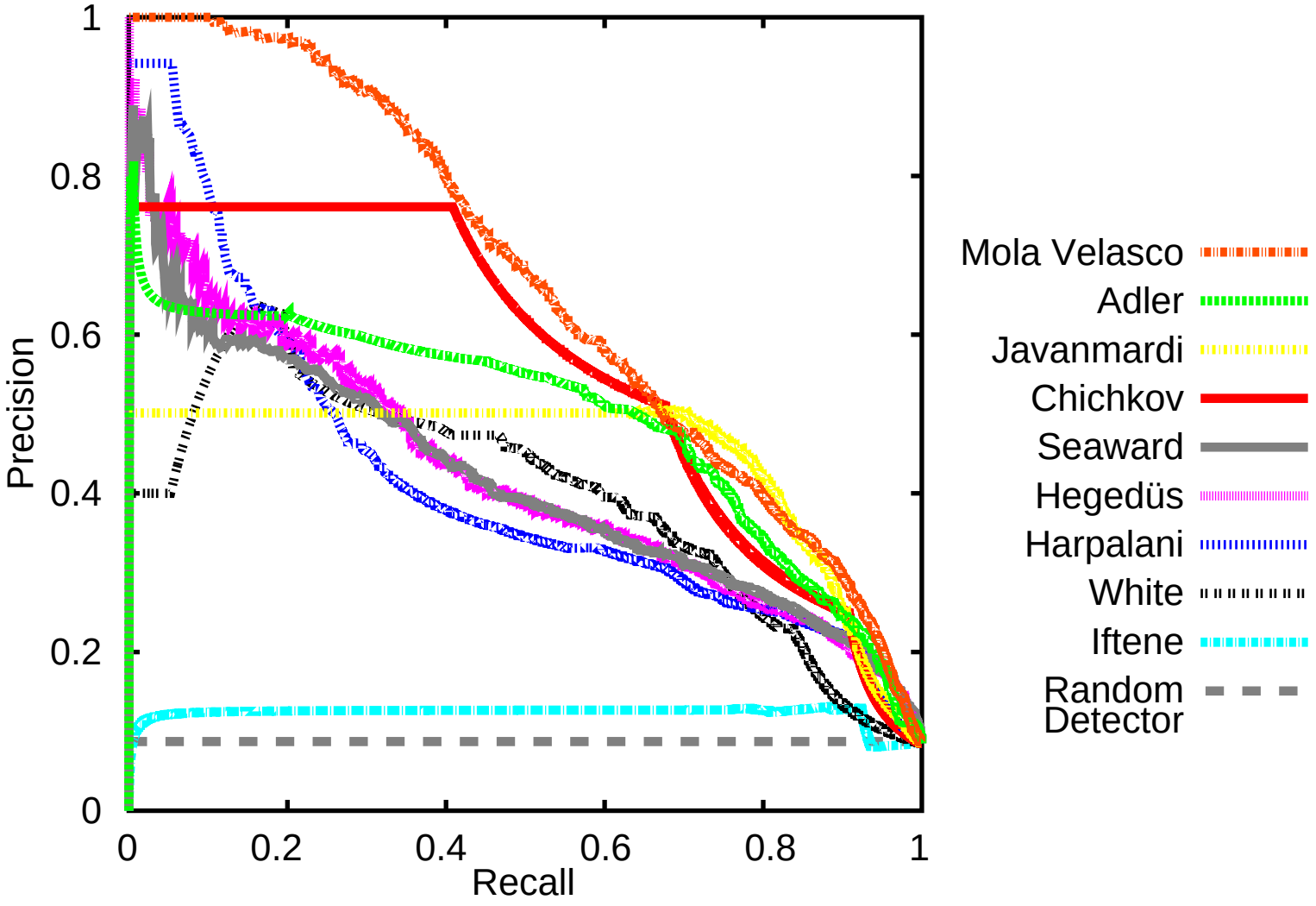

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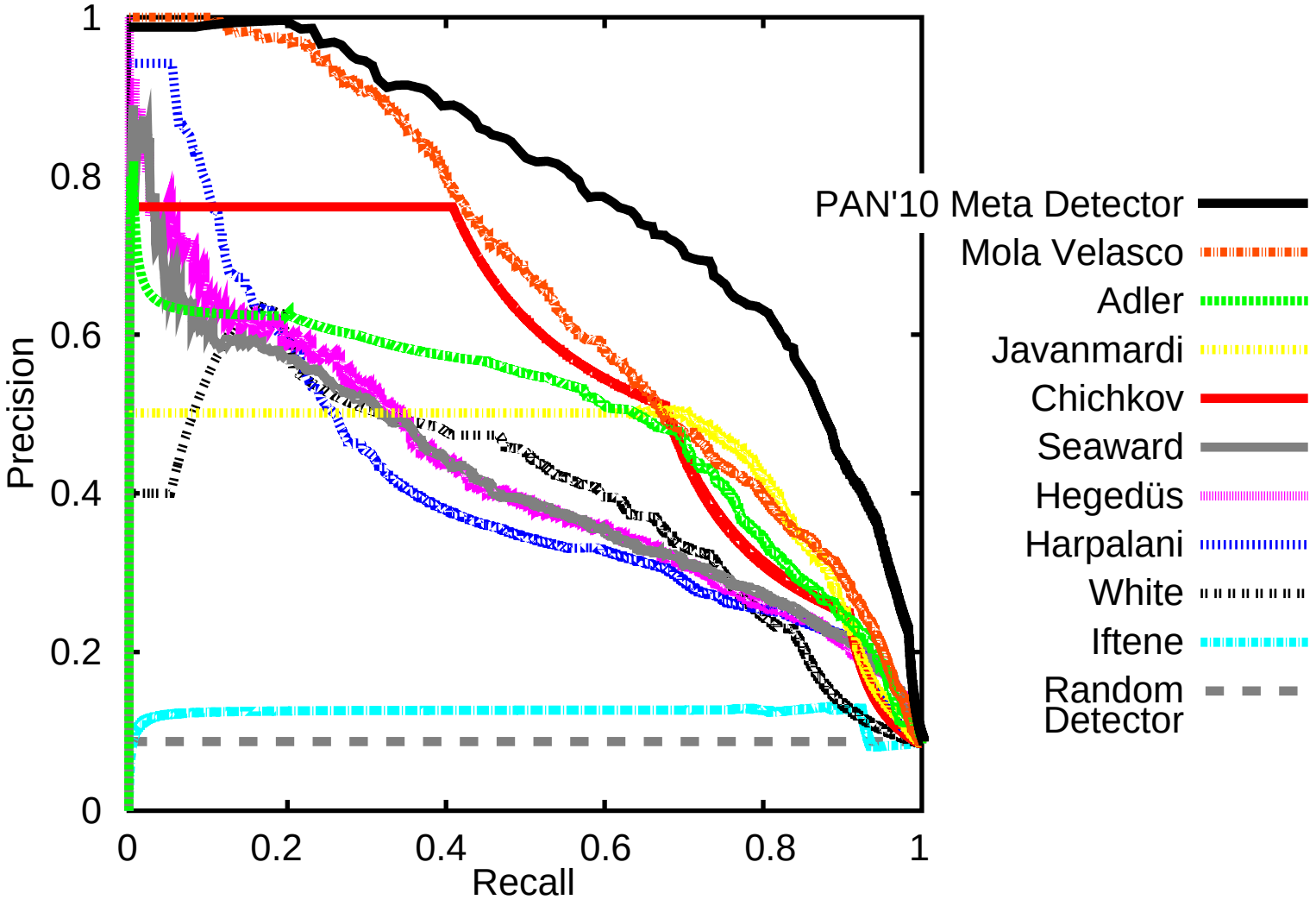

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Vandalism Detection Results

ROC-AUC	ROC rank	PR-AUC	PR rank		Detector
0.95690	–	0.77609	–	–	PAN'10 Meta Detector
0.92236	1	0.66522	1	–	Mola Velasco
0.90351	2	0.49263	3	↓	Adler
0.89856	3	0.44756	4	↓	Javanmardi
0.89377	4	0.56213	2	⇈	Chichkov
0.87990	5	0.41365	7	⇊	Seaward
0.87669	6	0.42203	5	↑	Hegedus
0.85875	7	0.41498	6	↑	Harpalani
0.84340	8	0.39341	8	–	White
0.65404	9	0.12235	9	–	Iftene
0.50000	10	0.08490	10	–	Random Detector

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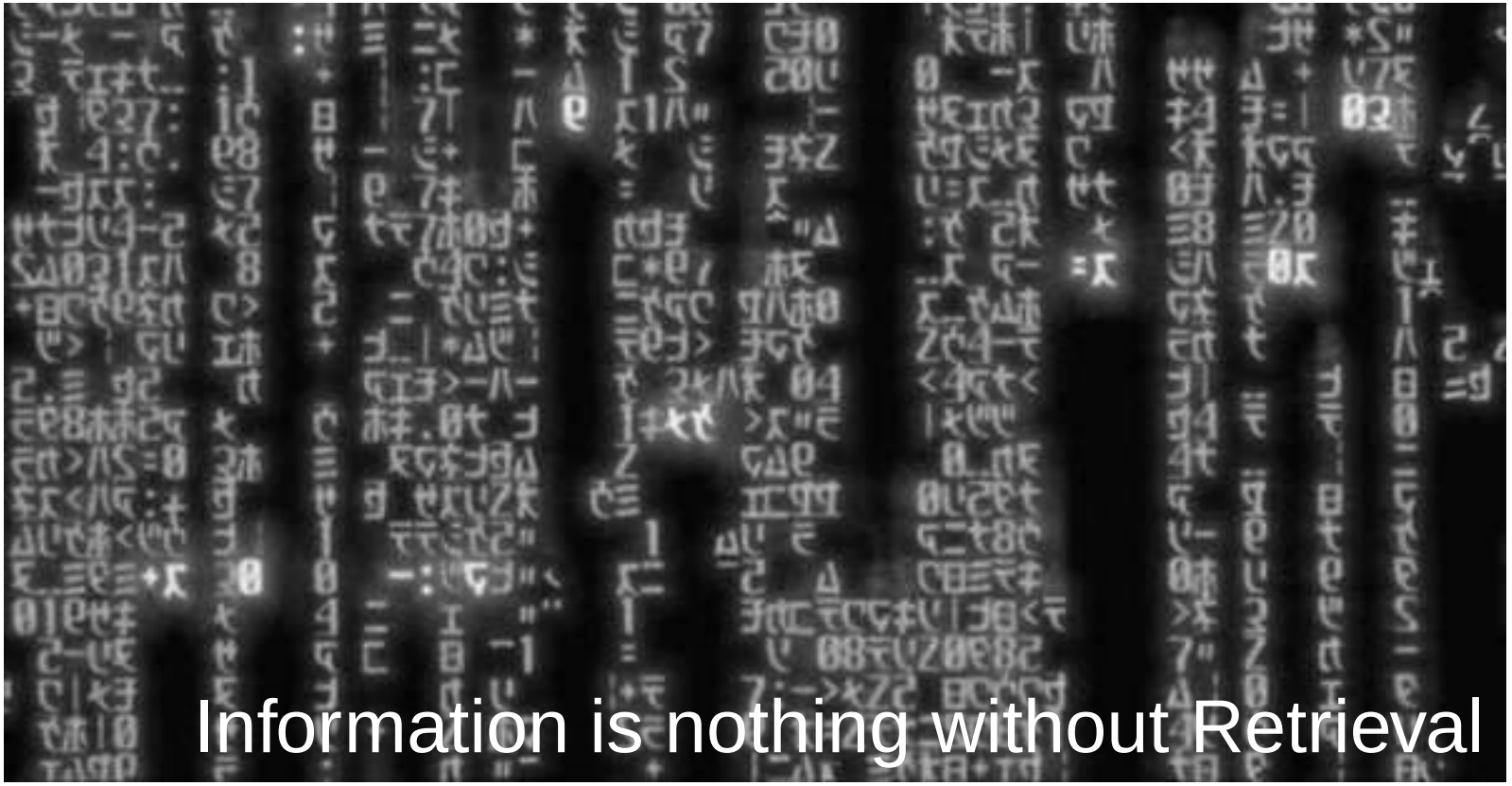

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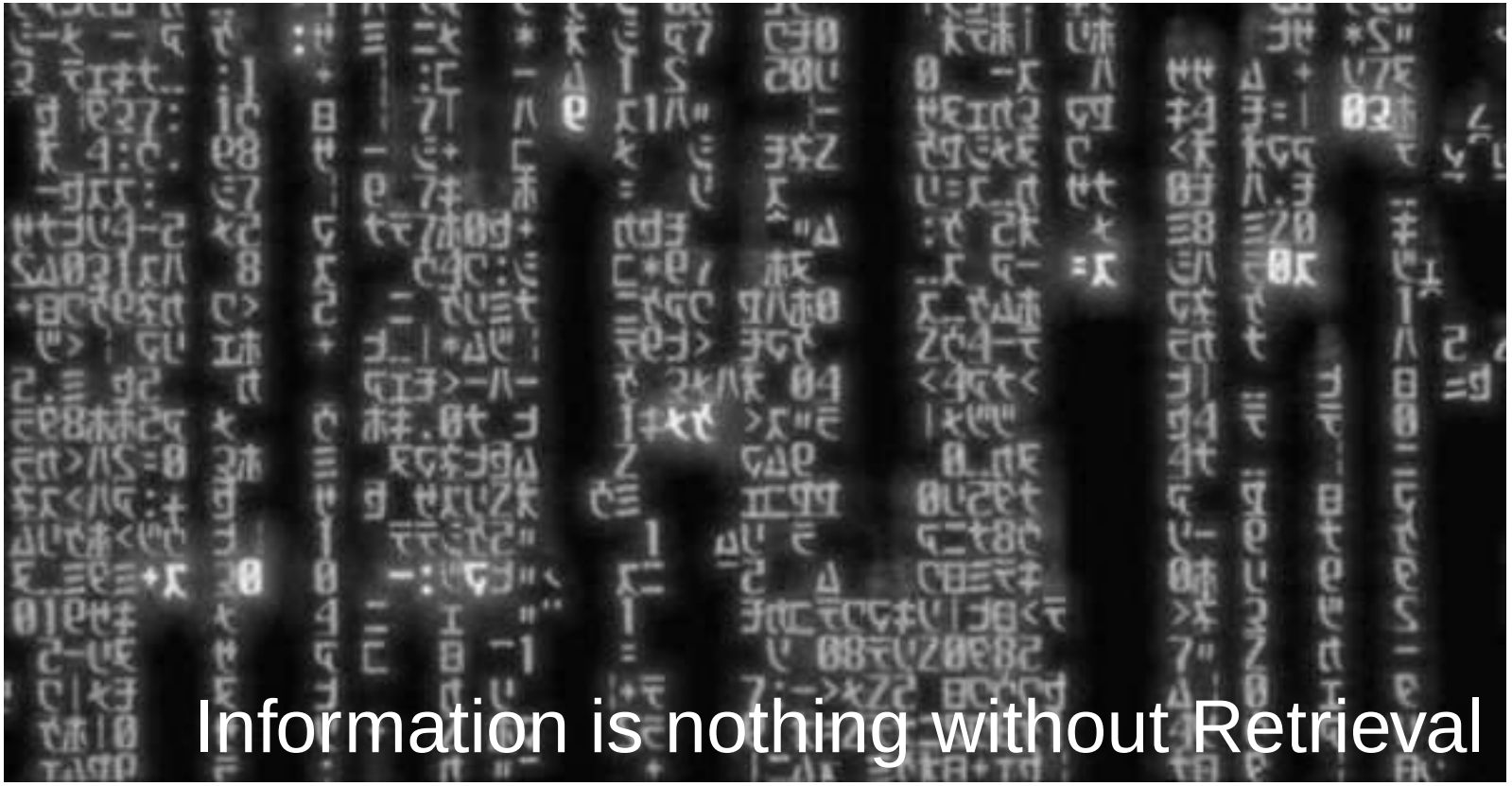

Retrieval is nothing without Evaluation