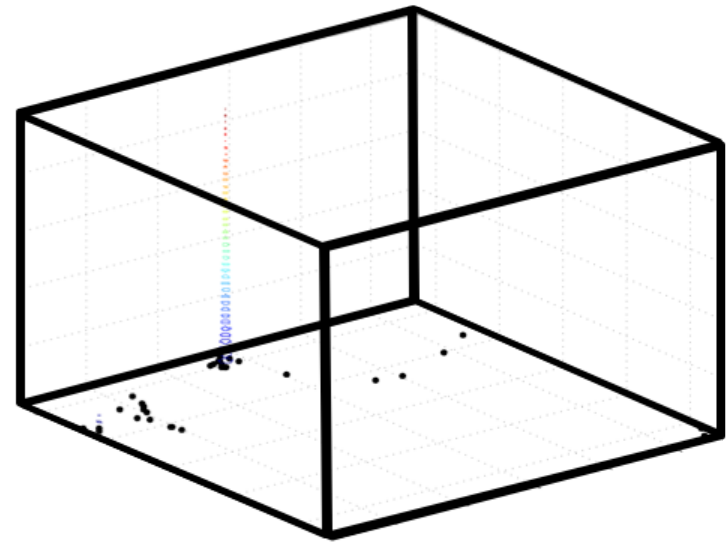
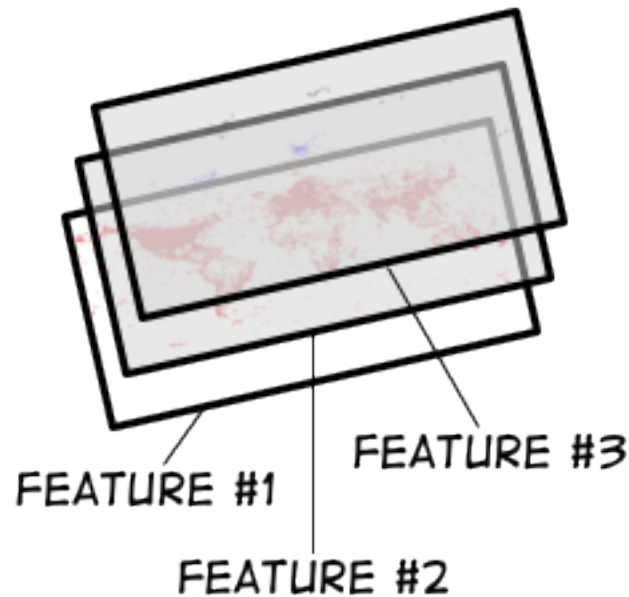


PLACING TASK

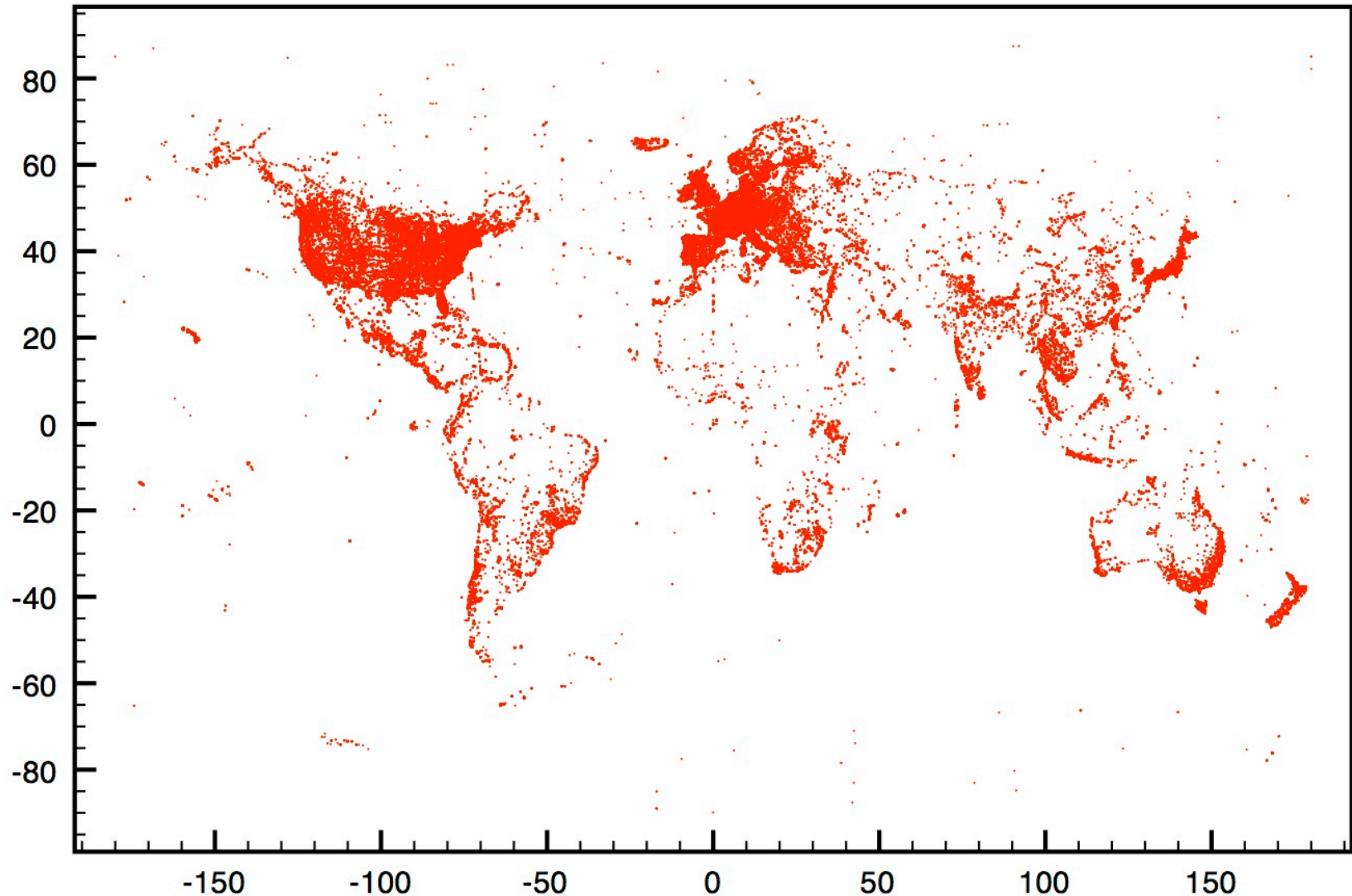
MEDIAEVAL 2013
JAMIE DAVIES

APPROACH

- EACH FEATURE PROVIDES A FIXED-SIZE SET OF $\langle \text{LAT}, \text{LNG} \rangle$ PAIRS
- MEAN-SHIFT USED TO ESTIMATE THE MOST PROBABLE LOCATION



LOCATION PRIOR



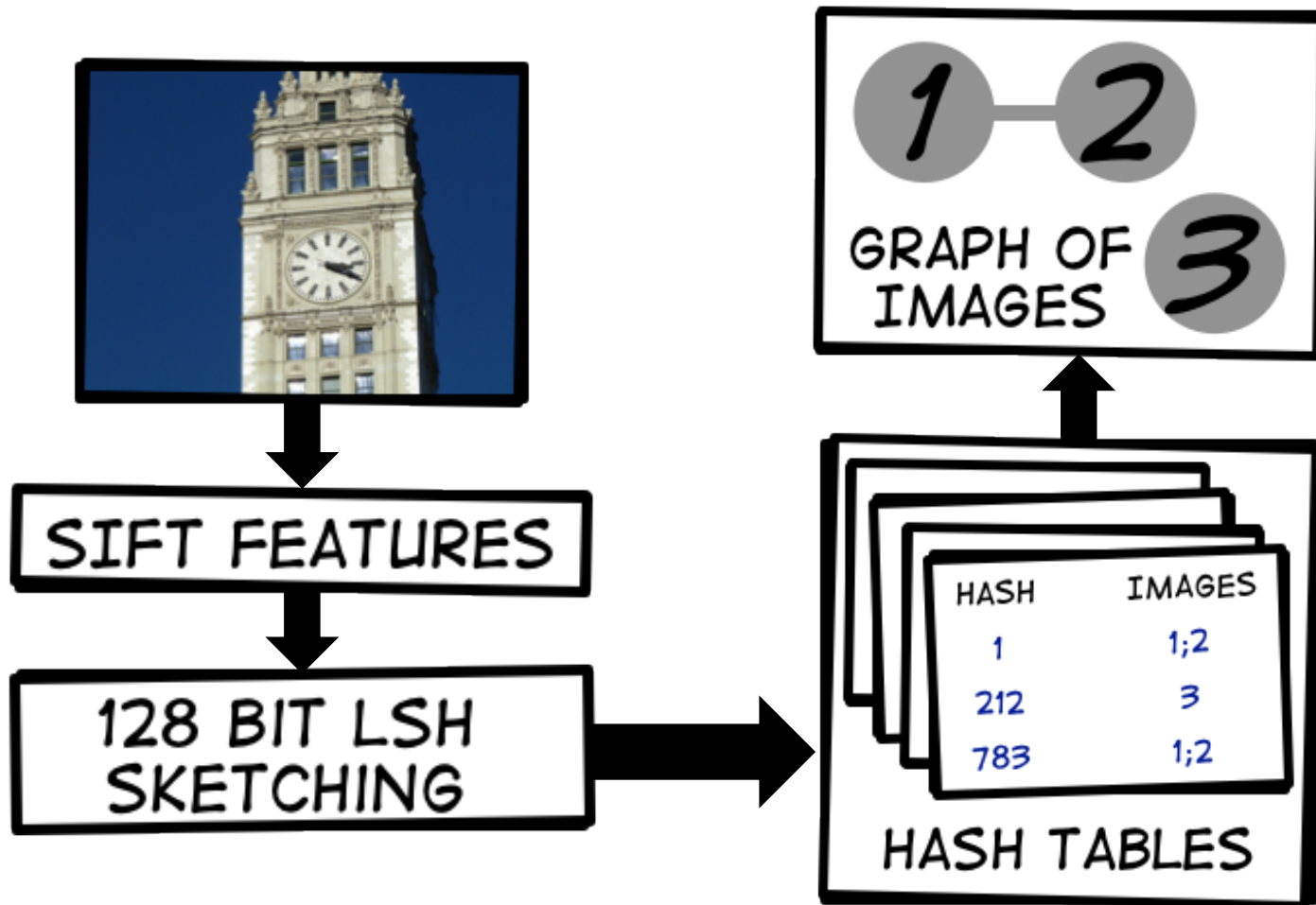
TAGS

- TAGS TREATED SEPARATELY
- EACH TAG RETURNS A SET OF LIKELY LOCATIONS



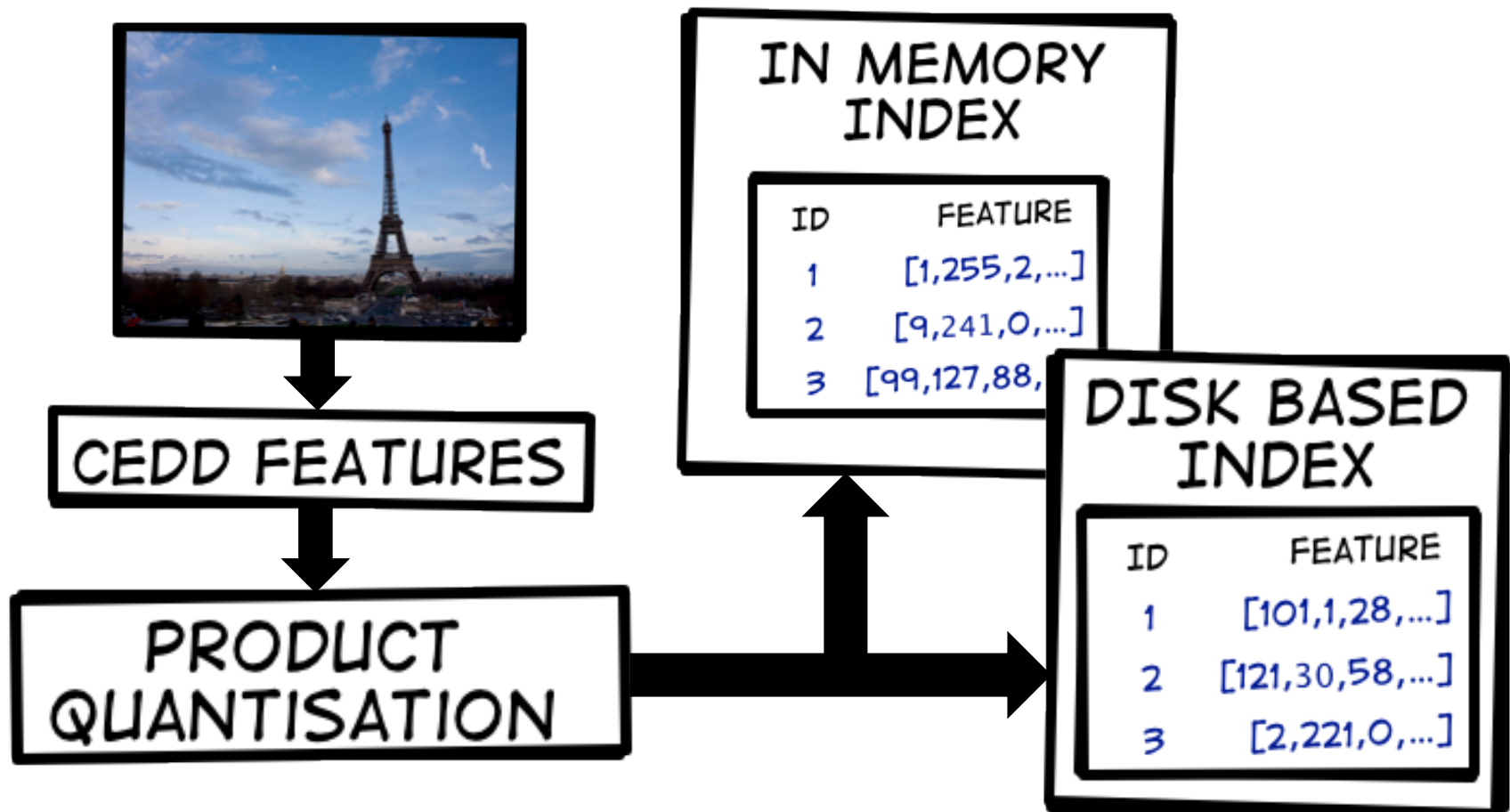
LSH-SIFT FEATURES

HIGH PRECISION / LOW RECALL



PQ-CEDD FEATURES

LOW PRECISION / HIGH RECALL



NORMALISATION

- ALL FEATURES PROVIDE EXACTLY 1000 $\langle \text{LAT}, \text{LNG} \rangle$ PAIRS
- UNIFORM SAMPLING FOR THE PRIOR AND TAGS
- SEARCH ENGINE RANKED SAMPLING FOR THE VISUAL FEATURES

GEONAMES BOOSTING

TAGS MATCHED WITH AN ENTRY IN THE GEONAMES DATABASE DOUBLED TO PROVIDE 2000 $\langle \text{LAT}, \text{LNG} \rangle$ PAIRS.

RUNS & RESULTS

RUN	PRIOR	TAGS	PQ-CEDD	SIFT-LSH	GEONAMES
1	✓	✓	✓	✓	
2	✓		✓	✓	
3	✓	✓			
4*	✓	✓		✓	
5	✓	✓	✓	✓	✓

	RUN				
	1	2	3	4	5
NO. EST. WITHIN 1KM	20.6%	0.3%	23.2%	26.2%	23.7%
NO. EST. WITHIN 10KM	31.5%	0.6%	37.7%	40.9%	38.5%
NO. EST. WITHIN 100KM	36.1%	0.1%	43.8%	47.4%	44.2%
NO. EST. WITHIN 500KM	42.0%	3.5%	51.0%	53.5%	49.9%
NO. EST. WITHIN 1000KM	47.2%	7.4%	56.7%	58.4%	54.5%
MEDIAN ERROR IN KM	1352	6898	451	254	540
LINEAR CORRELATION OF ERROR	0.16	0.06	0.37	0.37	0.04

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FUTURE WORK

- WHY WERE VISUAL FEATURES SO BAD?
- FURTHER EXPERIMENTS USING JUST SIFT FEATURES
- EXPERIMENT WITH DIFFERENT USES OF EXTERNAL DATA, SUCH AS GEONAMES

QUESTIONS?