

training size = 11,174															
	rails	joomla	angular	ceph	ansible	facebook	elastic	docker	cocos2d	django	hashicorp	emberjs	JuliaLang	dotnet	average
preciou@1	76.32%	28.95%	70.00%	60.53%	44.74%	42.11%	28.95%	18.92%	50.00%	21.62%	8.11%	28.95%	25.64%	13.16%	37.00%
preciou@2	64.94%	35.06%	47.62%	46.75%	36.36%	35.06%	20.78%	20.00%	38.16%	22.67%	18.67%	28.95%	20.51%	16.88%	32.32%
preciou@3	58.62%	30.43%	43.75%	39.66%	28.45%	30.17%	20.00%	18.58%	27.19%	19.64%	16.07%	21.93%	15.25%	17.24%	27.64%
preciou@4	52.90%	25.97%	39.53%	36.13%	25.81%	25.16%	16.88%	19.87%	21.71%	19.33%	13.33%	18.30%	12.10%	12.90%	24.28%
preciou@5	49.48%	26.42%	40.74%	35.05%	22.16%	22.68%	15.54%	16.40%	18.42%	17.11%	12.30%	15.18%	9.64%	11.40%	22.33%
recall@1	14.57%	7.24%	6.25%	22.12%	16.50%	21.62%	17.74%	11.48%	33.33%	14.55%	5.77%	23.91%	23.81%	16.67%	16.83%
recall@2	25.13%	17.76%	8.93%	34.62%	27.18%	36.49%	25.81%	24.59%	50.88%	30.91%	26.92%	47.83%	38.10%	43.33%	31.32%
recall@3	34.17%	23.03%	12.50%	44.23%	32.04%	47.30%	37.10%	34.43%	54.39%	40.00%	34.62%	54.35%	42.86%	66.67%	39.83%
recall@4	41.21%	26.32%	15.18%	53.85%	38.84%	52.70%	41.94%	49.18%	57.89%	52.73%	38.46%	60.87%	45.24%	66.67%	45.79%
recall@5	48.24%	33.55%	19.64%	65.38%	41.75%	59.46%	48.39%	50.82%	61.40%	58.18%	44.23%	63.04%	45.24%	73.33%	50.90%
f1-score@1	24.47%	11.58%	11.48%	32.39%	24.11%	28.57%	22.00%	14.29%	40.00%	17.39%	6.74%	26.19%	24.69%	14.71%	23.13%
f1-score@2	36.23%	23.58%	15.04%	39.78%	31.11%	35.76%	23.02%	22.06%	43.61%	26.15%	22.05%	36.07%	26.67%	24.30%	31.81%
f1-score@3	43.17%	26.22%	19.44%	41.82%	30.14%	36.84%	25.99%	24.14%	36.26%	26.35%	21.95%	31.25%	22.50%	27.40%	32.64%
f1-score@4	46.33%	26.14%	21.94%	43.24%	31.01%	34.06%	24.07%	28.30%	31.58%	28.29%	19.80%	28.14%	19.10%	21.62%	31.73%
f1-score@5	48.85%	29.57%	26.51%	45.64%	28.96%	32.84%	23.53%	24.80%	28.34%	26.45%	19.25%	24.47%	15.90%	19.73%	31.04%
MAP@1	68.14%	14.94%	55.81%	52.22%	26.18%	20.84%	15.15%	6.58%	34.52%	12.64%	3.43%	7.92%	8.24%	2.46%	23.50%
MAP@2	52.27%	14.06%	34.00%	34.82%	18.87%	15.91%	8.88%	5.56%	22.69%	8.89%	4.04%	8.10%	5.87%	2.96%	16.92%
MAP@3	44.40%	11.82%	28.61%	26.90%	14.01%	12.74%	7.27%	4.73%	15.67%	6.93%	3.30%	6.09%	4.18%	3.05%	13.55%
MAP@4	38.42%	9.71%	24.29%	22.62%	11.72%	10.27%	5.81%	4.69%	12.07%	6.06%	2.66%	4.95%	3.23%	2.28%	11.34%
MAP@5	34.47%	9.24%	23.07%	20.27%	9.73%	8.82%	4.96%	3.86%	9.88%	5.16%	2.34%	4.06%	2.57%	1.96%	10.03%

training size = 21,174															
	rails	joomla	angular	ceph	ansible	facebook	elastic	docker	cocos2d	django	hashicorp	emberjs	JuliaLang	dotnet	average
preciou@1	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	71.05%	86.49%	78.95%	89.19%	94.59%	76.32%	64.10%	52.63%	86.67%
preciou@2	100.00%	100.00%	100.00%	94.81%	90.91%	75.32%	45.45%	57.33%	55.26%	57.33%	64.00%	50.00%	38.46%	28.57%	68.39%
preciou@3	97.41%	85.22%	100.00%	70.69%	71.55%	54.31%	33.04%	40.71%	42.98%	43.75%	42.86%	35.09%	27.12%	18.97%	54.55%
preciou@4	88.39%	70.13%	100.00%	57.42%	54.84%	40.65%	25.32%	31.79%	32.24%	33.33%	32.00%	26.80%	20.38%	16.13%	44.96%
preciou@5	78.87%	57.51%	100.00%	46.91%	44.33%	32.99%	21.24%	25.40%	25.79%	27.27%	25.67%	21.47%	16.75%	12.95%	38.37%
recall@1	19.10%	25.00%	8.93%	36.54%	36.89%	51.35%	43.55%	52.46%	52.63%	60.00%	67.31%	63.04%	59.52%	66.67%	45.93%
recall@2	38.69%	50.66%	18.75%	70.19%	67.96%	78.38%	56.45%	70.49%	73.68%	78.18%	92.31%	82.61%	71.43%	73.33%	65.94%
recall@3	56.78%	64.47%	28.57%	78.85%	80.58%	85.14%	61.29%	75.41%	85.96%	89.09%	92.31%	86.96%	76.19%	73.33%	73.92%
recall@4	68.84%	71.05%	38.39%	85.58%	82.52%	85.14%	62.90%	78.69%	85.96%	90.91%	92.31%	89.13%	76.19%	83.33%	77.93%
recall@5	76.88%	73.03%	48.21%	87.50%	83.50%	86.49%	66.13%	78.69%	85.96%	92.73%	92.31%	89.13%	78.57%	83.33%	80.18%
f1-score@1	32.07%	40.00%	16.39%	53.52%	53.90%	67.86%	54.00%	65.31%	63.16%	71.74%	78.65%	69.05%	61.73%	58.82%	60.04%
f1-score@2	55.80%	67.25%	31.58%	80.66%	77.78%	76.82%	50.36%	63.24%	63.16%	66.15%	75.59%	62.30%	50.00%	41.12%	67.14%
f1-score@3	71.75%	73.41%	44.44%	74.55%	75.80%	66.32%	42.94%	52.87%	57.31%	58.68%	58.54%	50.00%	40.00%	30.14%	62.78%
f1-score@4	77.40%	70.59%	55.48%	68.73%	65.89%	55.02%	36.11%	45.28%	46.89%	48.78%	47.52%	41.21%	32.16%	27.03%	57.02%
f1-score@5	77.86%	64.35%	65.06%	61.07%	57.91%	47.76%	32.16%	38.40%	39.68%	42.15%	40.17%	34.60%	27.62%	22.42%	51.90%
MAP@1	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	70.23%	77.18%	77.25%	85.40%	90.66%	70.03%	55.48%	47.42%	83.83%
MAP@2	100.00%	100.00%	100.00%	93.42%	90.47%	71.80%	40.72%	49.43%	49.85%	53.34%	59.93%	42.54%	31.28%	24.49%	64.80%
MAP@3	96.85%	84.46%	100.00%	68.71%	69.41%	50.59%	28.24%	34.27%	36.30%	38.47%	40.13%	29.04%	21.18%	16.25%	50.99%
MAP@4	87.12%	68.08%	100.00%	54.36%	52.79%	37.86%	21.25%	26.10%	27.22%	28.97%	29.96%	21.83%	15.92%	12.51%	41.71%
MAP@5	76.55%	55.25%	100.00%	44.01%	42.41%	30.45%	17.20%	20.85%	21.78%	23.41%	24.03%	17.49%	12.78%	10.05%	35.45%

training size = 31,174															
	rails	joomla	angular	ceph	ansible	facebook	elastic	docker	cocos2d	django	hashicorp	emberjs	JuliaLang	dotnet	average
preciou@1	97.37%	97.37%	100.00%	100.00%	100.00%	94.74%	84.21%	100.00%	100.00%	94.59%	97.30%	84.21%	56.41%	47.37%	89.54%
preciou@2	96.10%	93.51%	100.00%	97.40%	92.21%	75.32%	54.55%	73.33%	67.11%	66.67%	61.33%	51.32%	38.46%	27.27%	71.04%
preciou@3	96.55%	81.74%	100.00%	79.31%	69.83%	55.17%	40.87%	49.56%	44.74%	45.54%	41.96%	35.09%	27.97%	21.55%	56.42%
preciou@4	92.90%	76.62%	100.00%	63.23%	58.06%	42.58%	31.17%	37.09%	34.21%	34.00%	32.00%	26.14%	22.29%	17.42%	47.69%
preciou@5	85.57%	63.21%	100.00%	50.52%	47.94%	34.02%	24.87%	29.63%	27.37%	27.27%	25.67%	20.94%	17.77%	13.99%	40.63%
recall@1	18.59%	24.34%	8.93%	36.54%	36.89%	48.65%	51.61%	60.66%	66.67%	63.64%	69.23%	69.57%	52.38%	60.00%	47.69%
recall@2	37.19%	47.37%	18.75%	72.12%	68.93%	78.38%	67.74%	90.16%	89.47%	90.91%	88.46%	84.78%	71.43%	70.00%	69.69%
recall@3	56.28%	61.84%	28.57%	88.46%	78.64%	86.49%	75.81%	91.80%	89.47%	92.73%	90.38%	86.96%	78.57%	83.33%	77.81%
recall@4	72.36%	77.63%	38.39%	94.23%	87.38%	89.19%	77.42%	91.80%	91.23%	92.73%	92.31%	86.96%	83.33%	90.00%	83.21%
recall@5	83.42%	80.26%	48.21%	94.23%	90.29%	89.19%	77.42%	91.80%	91.23%	92.73%	92.31%	86.96%	83.33%	90.00%	85.10%
f1-score@1	31.22%	38.95%	16.39%	53.52%	53.90%	64.29%	64.00%	75.51%	80.00%	76.09%	80.90%	76.19%	54.32%	52.94%	62.24%
f1-score@2	53.62%	62.88%	31.58%	82.87%	78.89%	76.82%	60.43%	80.88%	76.69%	76.92%	72.44%	63.93%	50.00%	39.25%	70.36%
f1-score@3	71.11%	70.41%	44.44%	83.64%	73.97%	67.37%	53.11%	64.37%	59.65%	61.08%	57.32%	50.00%	41.25%	34.25%	65.41%
f1-score@4	81.36%	77.12%	55.48%	75.68%	69.77%	57.64%	44.44%	52.83%	49.76%	49.76%	47.52%	40.20%	35.18%	29.19%	60.63%
f1-score@5	84.48%	70.72%	65.06%	65.77%	62.63%	49.25%	37.65%	44.80%	42.11%	42.15%	40.17%	33.76%	29.29%	24.22%	55.00%
MAP@1	95.44%	97.00%	100.00%	100.00%	100.00%	94.53%	83.08%	100.00%	100.00%	89.34%	94.73%	78.80%	53.42%	45.84%	88.01%
MAP@2	93.53%	91.78%	100.00%	97.26%	91.87%	71.83%	50.71%	72.33%	66.01%	61.19%	59.39%	45.07%	31.39%	23.68%	68.29%
MAP@3	93.68%	78.25%	100.00%	78.25%	67.99%	51.07%	36.00%	48.63%	44.01%	41.54%	40.29%	30.48%	21.58%	16.56%	53.45%
MAP@4	89.47%	71.00%	100.00%	61.33%	54.54%	38.87%	27.11%	36.39%	33.26%	31.02%	30.31%	22.71%	16.54%	12.68%	44.66%
MAP@5	81.73%	58.08%	100.00%	49.00%	44.41%	31.05%	21.63%	29.07%	26.61%	24.88%	24.31%	18.19%	13.18%	10.18%	38.02%

training size = 41,174															
	rails	joomla	angular	ceph	ansible	facebook	elastic	docker	cocos2d	django	hashicorp	emberjs	JuliaLang	dotnet	average
preciou@1	97.37%	94.74%	100.00%	100.00%	100.00%	100.00%	84.21%	100.00%	100.00%	94.59%	100.00%	89.47%	69.23%	55.26%	91.78%
preciou@2	98.70%	97.40%	100.00%	98.70%	97.40%	75.32%	45.45%	74.67%	60.53%	68.00%	61.33%	51.32%	42.31%	32.47%	71.69%
preciou@3	98.28%	91.30%	100.00%	80.17%	72.41%	56.03%	34.78%	49.56%	40.35%	46.43%	41.96%	34.21%	29.66%	23.28%	57.03%
preciou@4	97.42%	75.97%	100.00%	63.87%	55.48%	42.58%	28.57%	37.75%	32.24%	34.67%	31.33%	25.49%	22.29%	18.06%	47.55%
preciou@5	88.66%	61.14%	100.00%	51.55%	45.36%	34.02%	23.32%	30.16%	26.84%	27.81%	25.67%	20.42%	18.27%	15.03%	40.59%
recall@1	18.59%	23.68%	8.93%	36.54%	36.89%	51.35%	51.61%	60.66%	66.67%	63.64%	71.15%	73.91%	64.29%	70.00%	49.85%
recall@2	38.19%	49.34%	18.75%	73.08%	72.82%	78.38%	56.45%	91.80%	80.70%	92.73%	88.46%	84.78%	78.57%	83.33%	70.53%
recall@3	57.29%	69.08%	28.57%	89.42%	81.55%	87.84%	64.52%	91.80%	80.70%	94.55%	90.38%	84.78%	83.33%	90.00%	78.13%
recall@4	75.88%	76.97%	38.39%	95.19%	83.50%	89.19%	70.97%	93.44%	85.96%	94.55%	90.38%	84.78%	83.33%	93.33%	82.56%
recall@5	86.43%	77.63%	48.21%	96.15%	85.44%	89.19%	72.58%	93.44%	89.47%	94.55%	92.31%	84.78%	85.71%	96.67%	85.18%
f1-score@1	31.22%	37.89%	16.39%	53.52%	53.90%	67.86%	64.00%	75.51%	80.00%	76.09%	83.15%	80.95%	66.67%	61.76%	64.61%
f1-score@2	55.07%	65.50%	31.58%	83.98%	83.33%	76.82%	50.36%	82.35%	69.17%	78.46%	72.44%	63.93%	55.00%	46.73%	71.10%
f1-score@3	72.38%	78.65%	44.44%	84.55%	76.71%	68.42%	45.20%	64.37%	53.80%	62.28%	57.32%	48.75%	43.75%	36.99%	65.93%
f1-score@4	85.31%	76.47%	55.48%	76.45%	66.67%	57.64%	40.74%	53.77%	46.89%	50.73%	46.53%	39.20%	35.18%	30.27%	60.35%
f1-score@5	87.53%	68.41%	65.06%	67.11%	59.26%	49.25%	35.29%	45.60%	41.30%	42.98%	40.17%	32.91%	30.13%	26.01%	54.98%
MAP@1	97.30%	90.62%	100.00%	100.00%	100.00%	100.00%	83.76%	100.00%	100.00%	92.15%	100.00%	87.56%	65.70%	51.38%	90.61%
MAP@2	97.76%	93.56%	100.00%	98.52%	97.23%	73.52%	44.19%	73.99%	59.87%	65.32%	61.04%	48.92%	37.18%	27.81%	69.92%
MAP@3	97.10%	87.60%	100.00%	79.04%	71.75%	52.79%	31.22%	49.11%	39.91%	44.25%	41.26%	32.61%	25.16%	18.91%	55.05%
MAP@4	95.88%	72.07%	100.00%	62.00%	54.53%	39.86%	24.14%	37.05%	30.67%	33.04%	30.81%	24.30%	18.91%	14.30%	45.54%
MAP@5	86.79%	57.89%	100.00%	49.85%	44.13%	31.85%	19.40%	29.60%	24.85%	26.51%	24.85%	19.47%	15.18%	11.57%	38.71%

training size = 51,174															
	rails	joomla	angular	ceph	ansible	facebook	elastic	docker	cocos2d	django	hashicorp	emberjs	JuliaLang	dotnet	average
preciou@1	100.00%	97.37%	100.00%	100.00%	100.00%	97.37%	84.21%	100.00%	97.37%	97.30%	100.00%	86.84%	69.23%	60.53%	92.16%
preciou@2	100.00%	97.40%	100.00%	98.70%	92.21%	79.22%	50.65%	73.33%	64.47%	65.33%	62.67%	53.95%	41.03%	33.77%	72.34%
preciou@3	98.28%	90.43%	100.00%	79.31%	70.69%	54.31%	37.39%	48.67%	46.49%	44.64%	41.96%	36.84%	27.97%	23.28%	57.16%
preciou@4	94.84%	74.03%	100.00%	61.29%	54.84%	41.29%	29.22%	36.42%	35.53%	33.33%	32.00%	27.45%	22.29%	17.42%	47.14%
preciou@5	89.18%	62.18%	100.00%	50.00%	45.36%	34.02%	23.32%	29.63%	28.42%	26.74%	26.74%	21.99%	18.27%	14.51%	40.74%
recall@1	19.10%	24.34%	8.93%	36.54%	36.89%	50.00%	51.61%	60.66%	64.91%	65.45%	71.15%	71.74%	64.29%	76.67%	50.16%
recall@2	38.69%	49.34%	18.75%	73.08%	68.93%	82.43%	62.90%	90.16%	85.96%	89.09%	90.38%	89.13%	76.19%	86.67%	71.55%
recall@3	57.29%	68.42%	28.57%	88.46%	79.61%	85.14%	69.35%	90.16%	92.98%	90.91%	90.38%	91.30%	78.57%	90.00%	78.65%
recall@4	73.87%	75.00%	38.39%	91.35%	82.52%	86.49%	72.58%	90.16%	94.74%	90.91%	92.31%	91.30%	83.33%	90.00%	82.35%
recall@5	86.93%	78.95%	48.21%	93.27%	85.44%	89.19%	72.58%	91.80%	94.74%	90.91%	96.15%	91.30%	85.71%	93.33%	85.61%
f1-score@1	32.07%	38.94%	16.40%	53.52%	53.90%	66.07%	64.00%	75.51%	77.89%	78.26%	83.14%	78.57%	66.67%	67.65%	64.96%
f1-score@2	55.79%	65.50%	31.58%	83.98%	78.89%	80.79%	56.11%	80.88%	73.68%	75.38%	74.02%	67.22%	53.34%	48.60%	71.94%
f1-score@3	72.38%	77.90%	44.44%	83.64%	74.89%	66.32%	48.59%	63.22%	61.99%	59.88%	57.31%	52.50%	41.25%	36.99%	66.20%
f1-score@4	83.05%	74.51%	55.48%	73.36%	65.89%	55.90%	41.67%	51.88%	51.68%	48.78%	47.53%	42.21%	35.17%	29.19%	59.96%
f1-score@5	88.04%	69.57%	65.06%	65.10%	59.26%	49.25%	35.30%	44.80%	43.72%	41.32%	41.84%	35.44%	30.12%	25.12%	55.21%
MAP@1	100.00%	96.48%	100.00%	100.00%	100.00%	95.96%	82.71%	100.00%	97.23%	95.08%	100.00%	85.46%	58.20%	55.38%	90.46%
MAP@2	100.00%	95.65%	100.00%	98.29%	91.73%	76.55%	47.44%	72.10%	61.67%	63.19%	61.68%	50.95%	32.35%	29.23%	70.06%
MAP@3	97.72%	88.06%	100.00%	78.07%	68.13%	51.89%	33.28%	47.85%	43.17%	42.87%	41.30%	34.43%	21.70%	19.68%	54.87%
MAP@4	93.84%	71.41%	100.00%	59.73%	52.20%	39.13%	25.26%	35.81%	32.66%	32.01%	31.07%	25.65%	16.66%	14.73%	45.01%
MAP@5	87.43%	59.08%	100.00%	48.36%	42.46%	31.64%	20.16%	28.78%	26.13%	25.68%	25.24%	20.55%	13.38%	11.92%	38.63%