Additional Results for Kiez Benchmark

1 Time and Memory

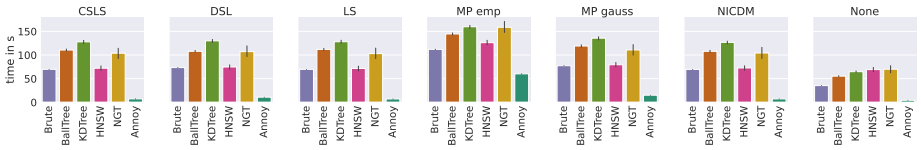

Figure 1: Time in seconds on 15K datasets

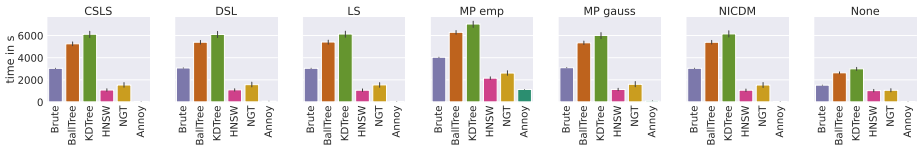

Figure 2: Time in seconds on 100K datasets

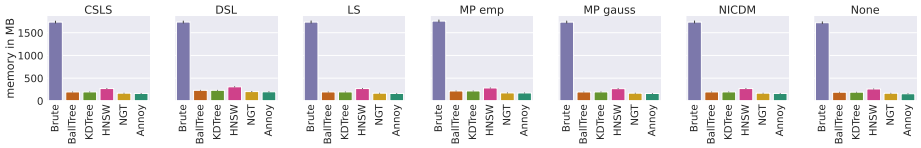

Figure 3: Peak memory consumption on 15K datasets

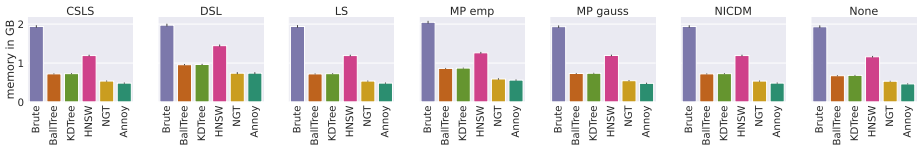

Figure 4: Peak memory consumption on 100K datasets

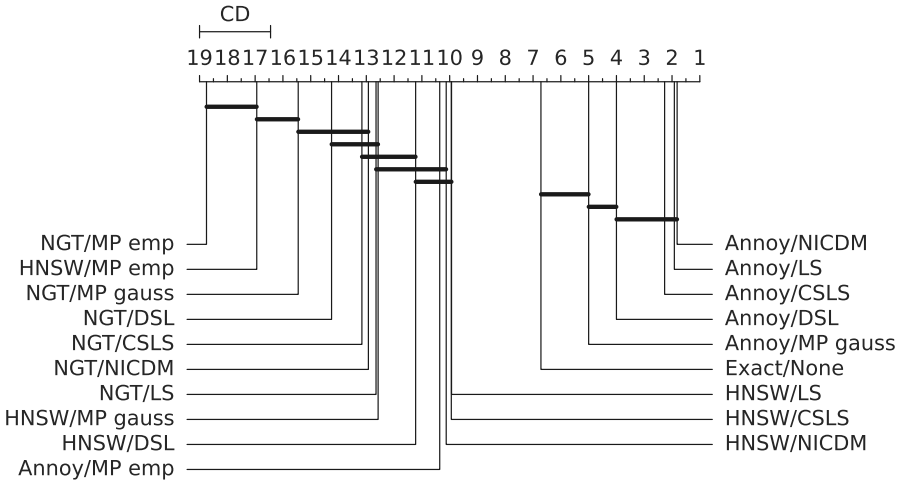

Figure 5: Critical distance diagram showing differences between hubness reduction techniques for ANN and baseline with regards to execution time on small datasets

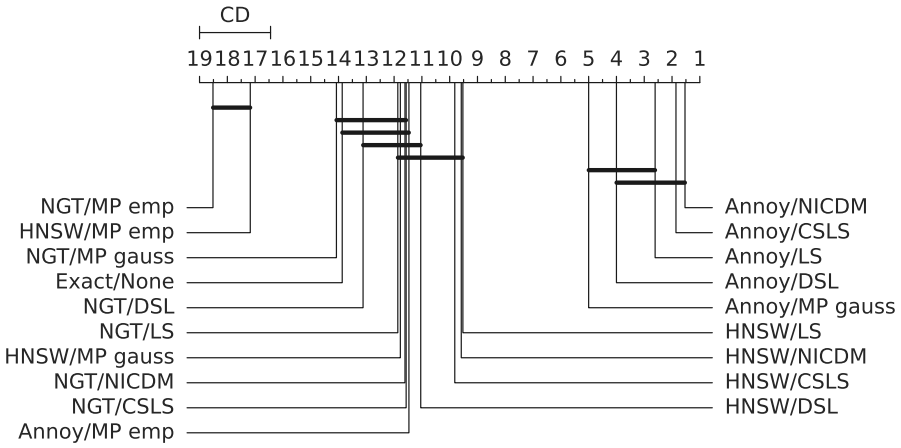

Figure 6: Critical distance diagram showing differences between hubness reduction techniques for ANN and baseline with regards to execution time on large datasets

2 Results for hits@1

2.1 General

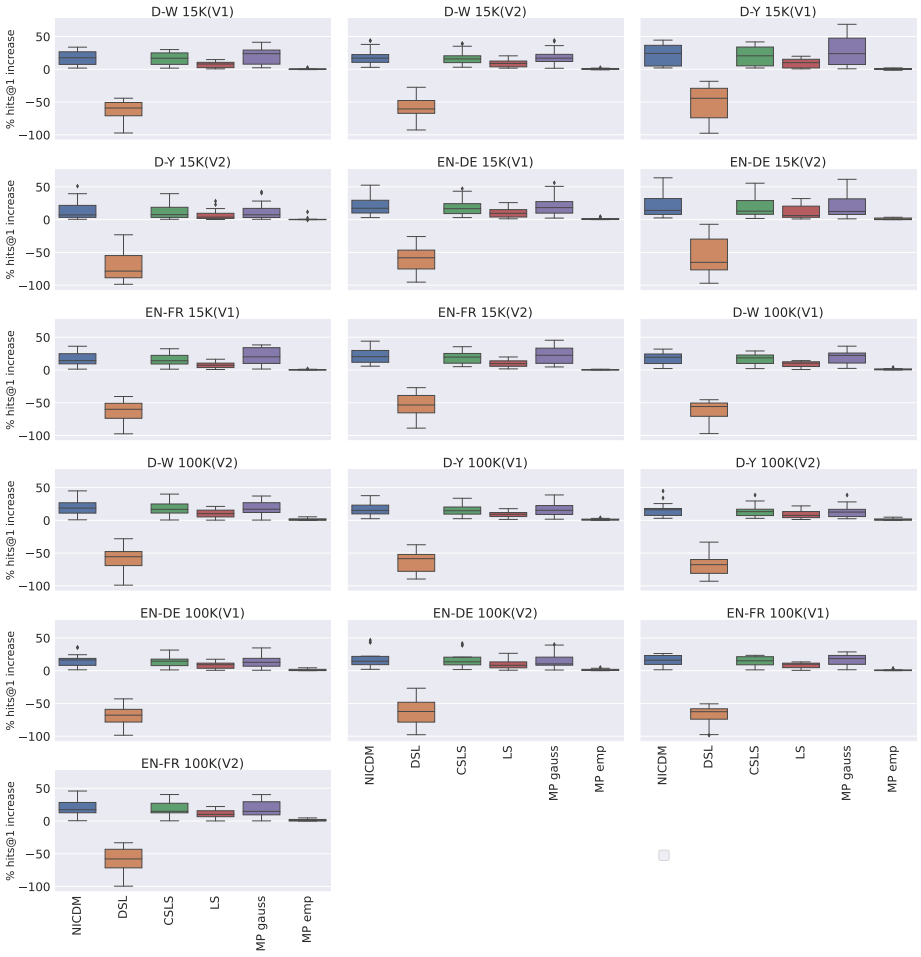

Figure 7: Exact NN improvement over baseline (exact NN without hubness reduction) for hits@1

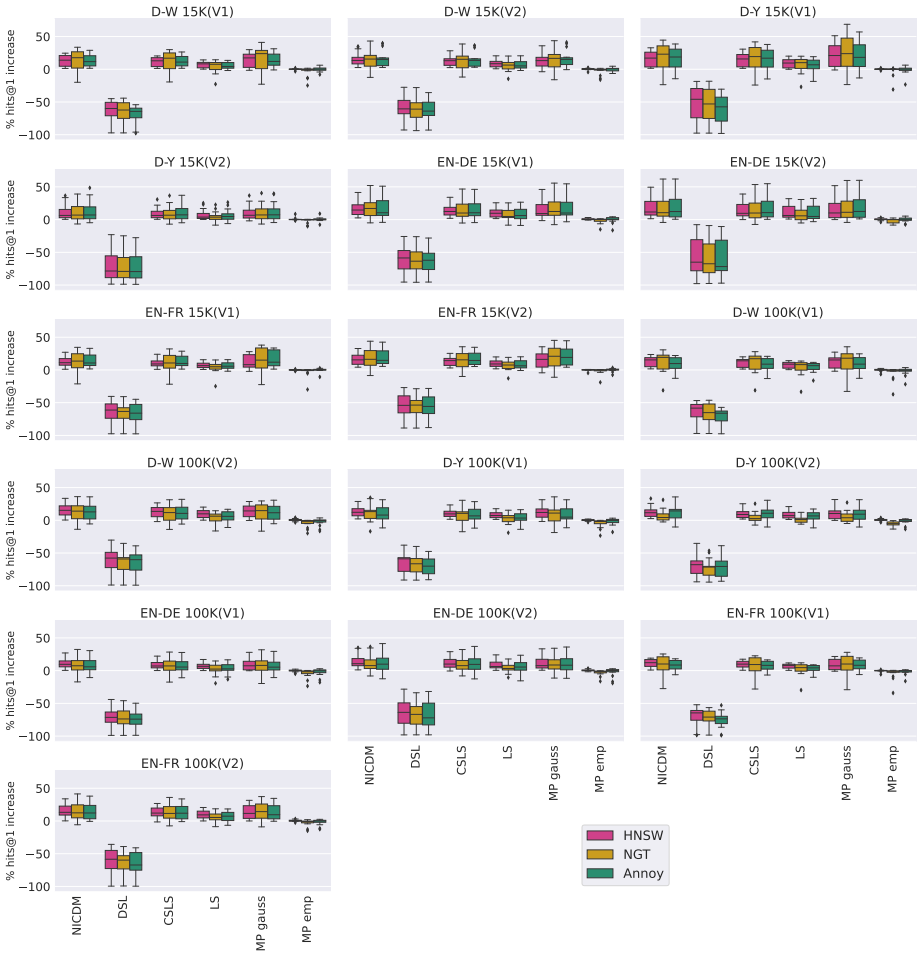

Figure 8: ANN improvement over baseline (exact NN without hubness reduction) for hits@1

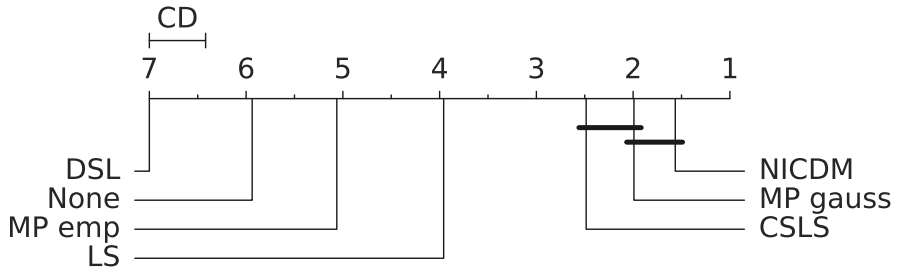

Figure 9: Critical distance diagram showing differences between hubness reduction techniques for exact NN with regards to hits@1

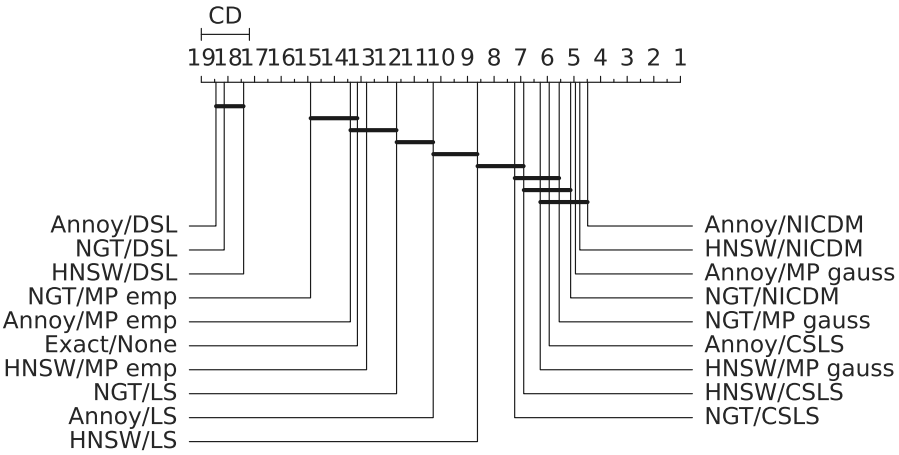

Figure 10: Critical distance diagram showing differences between hubness reduction techniques for ANN and baseline with regards to hits@1

2.2 Individual embedding approaches

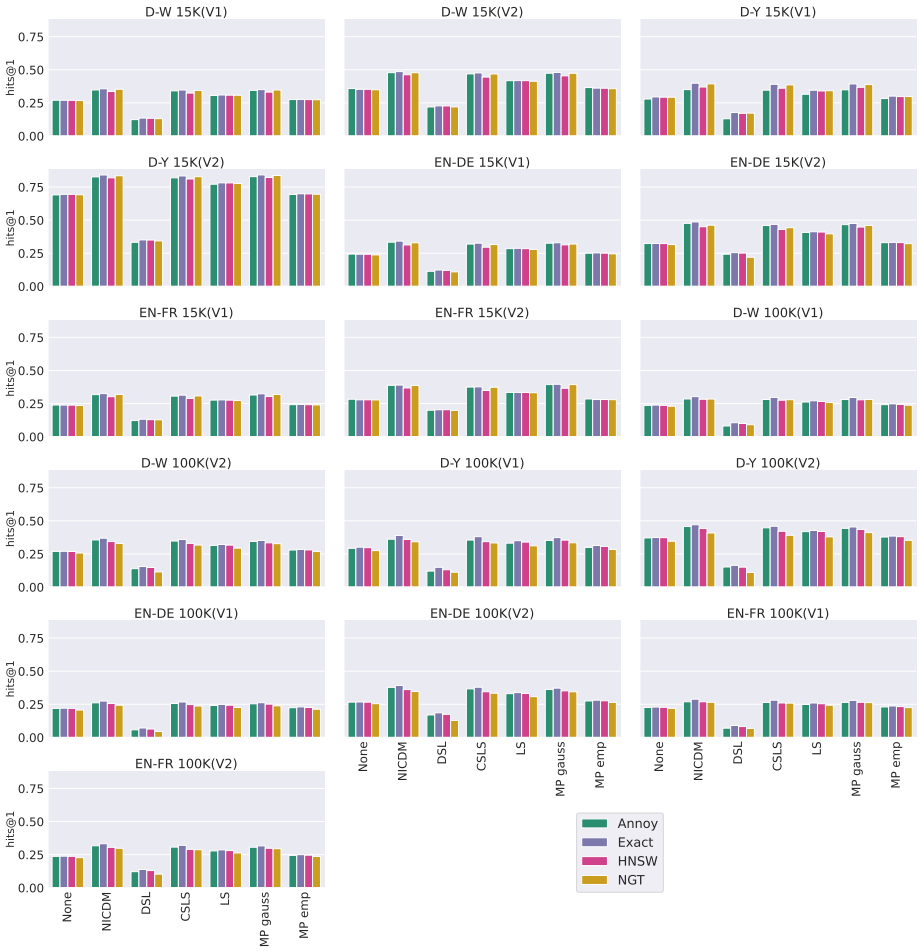

Figure 11: AttrE

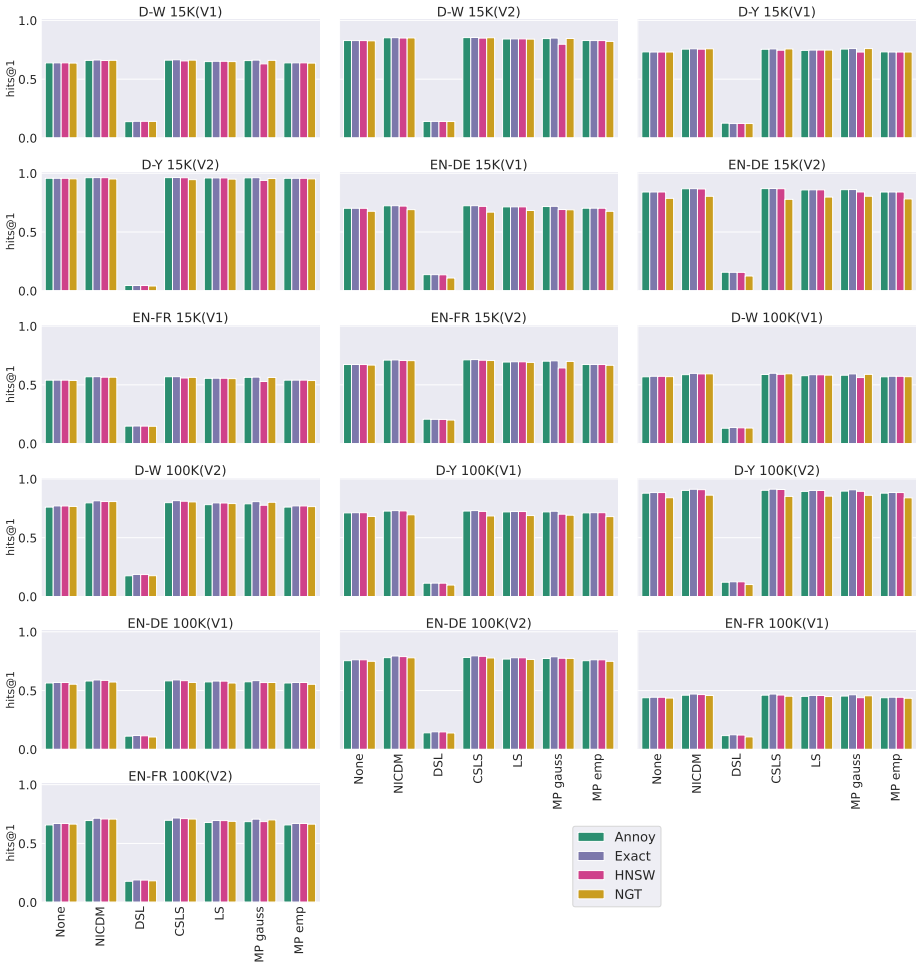

Figure 12: BootEA

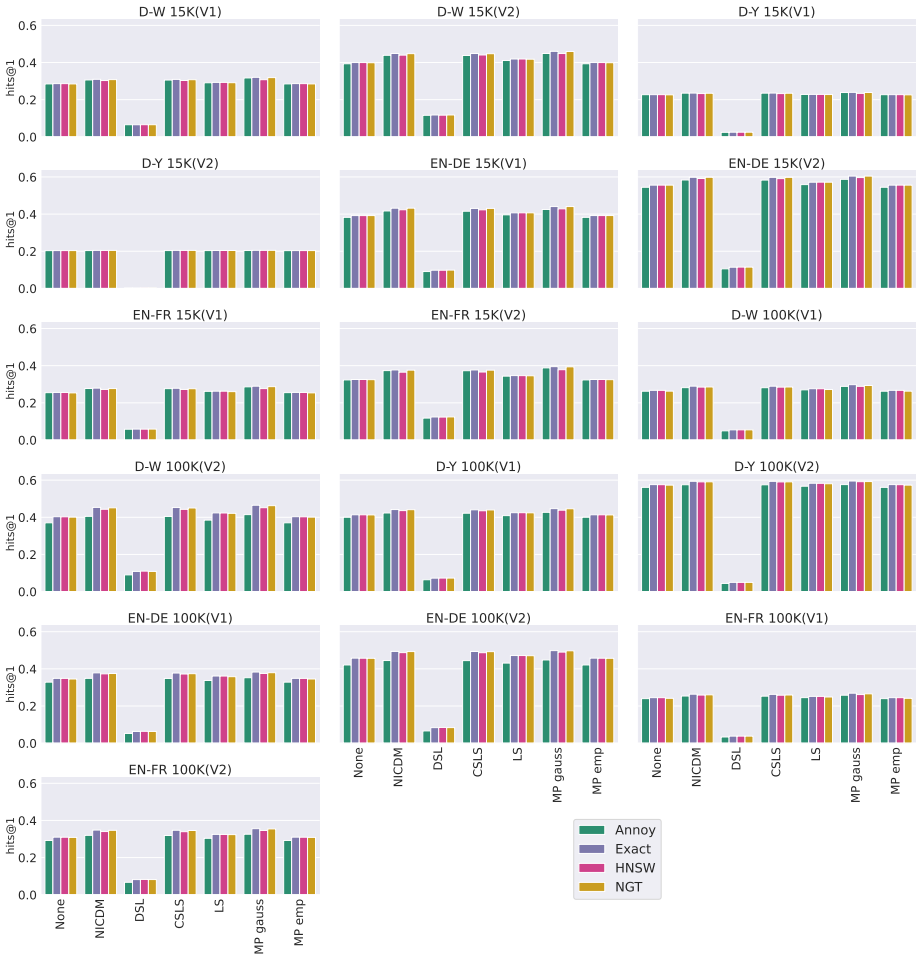

Figure 13: ConvE

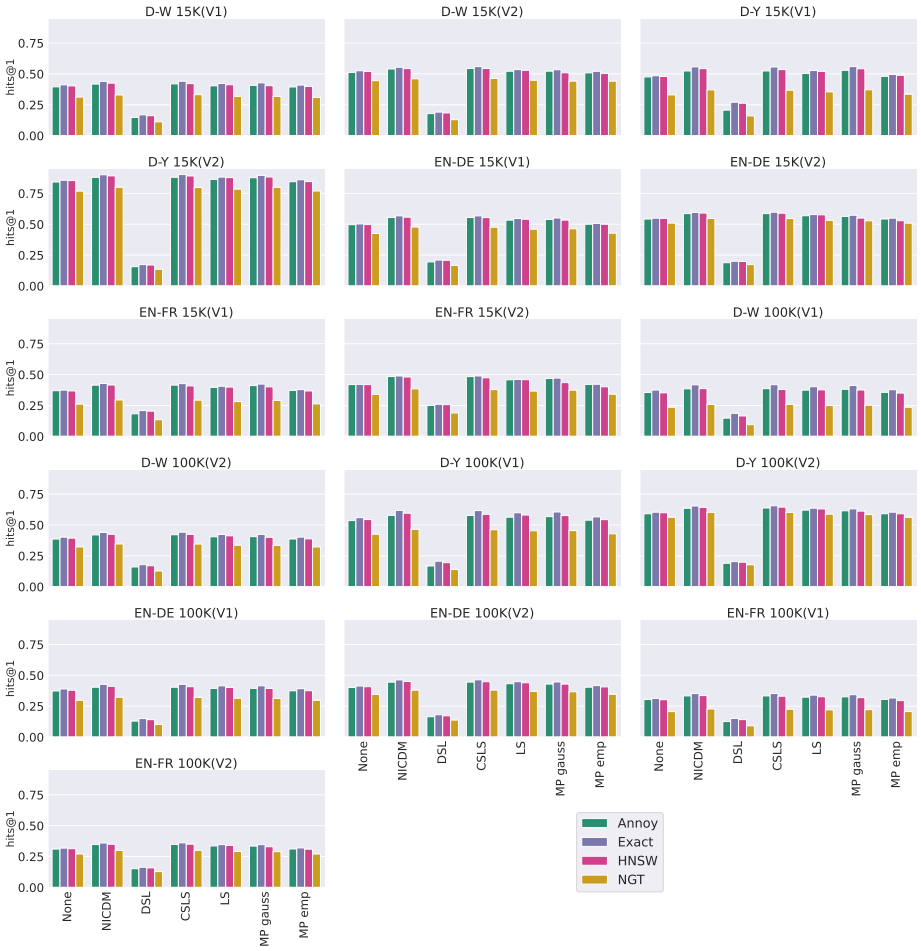

Figure 14: GCNAlign

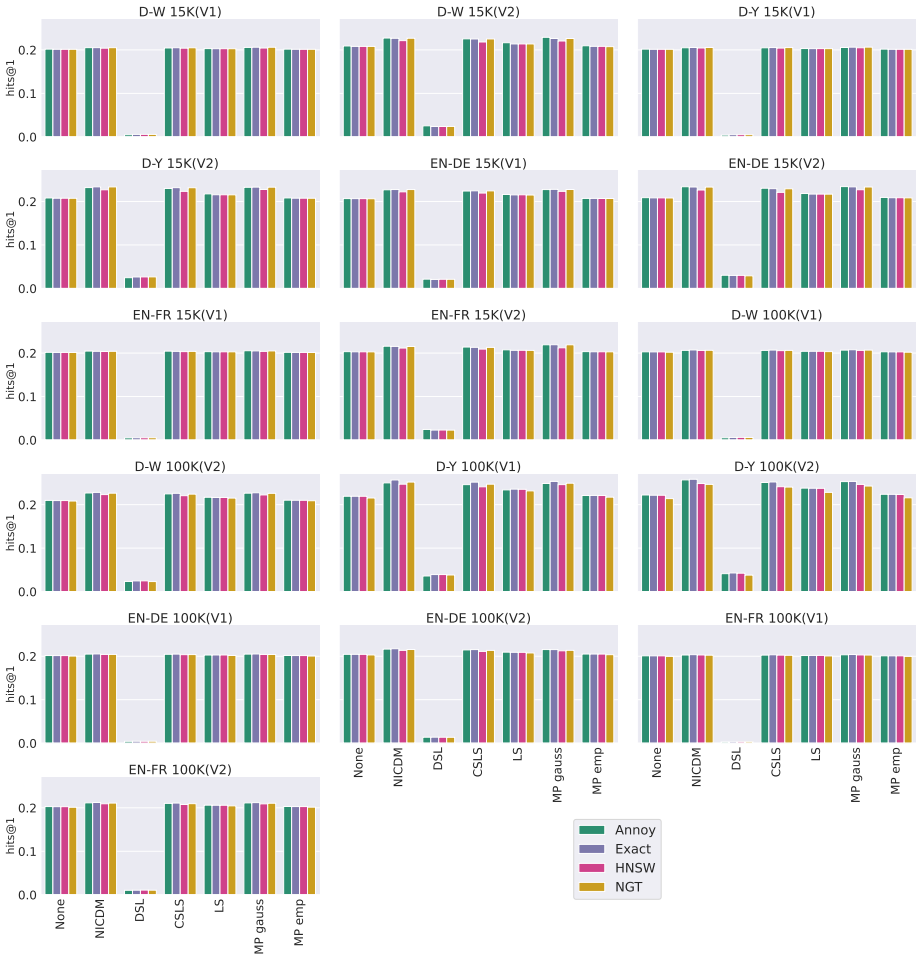

Figure 15: HolE

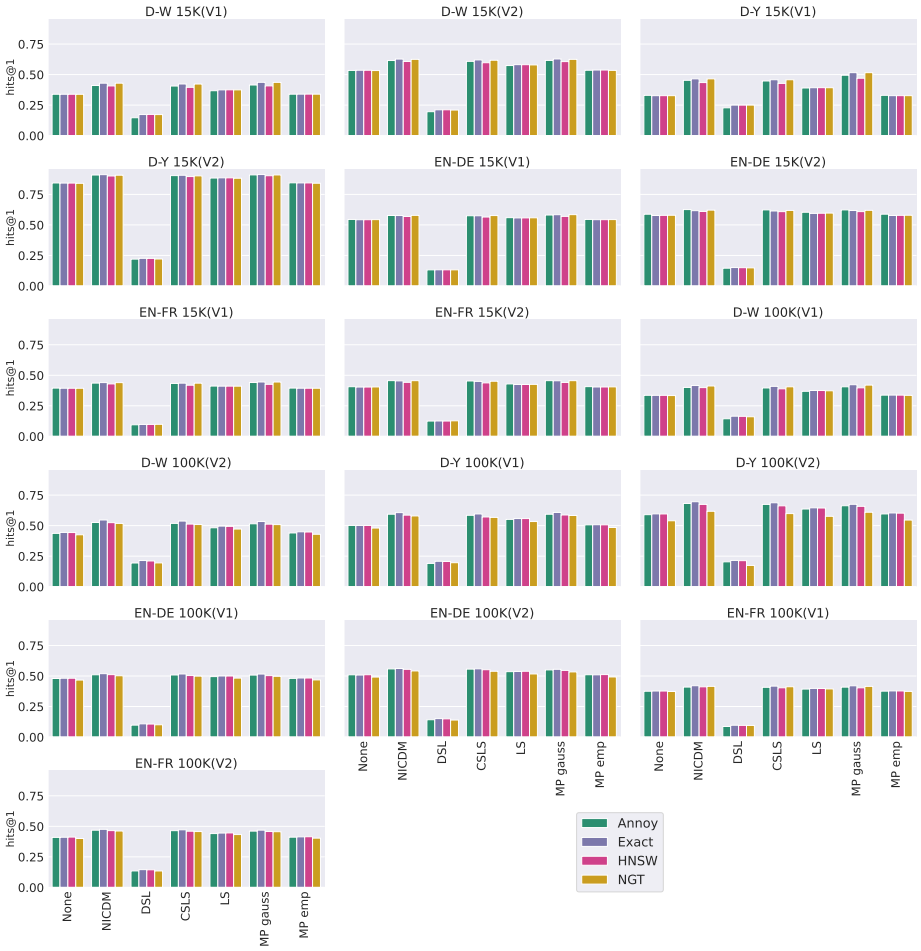

Figure 16: IMUSE

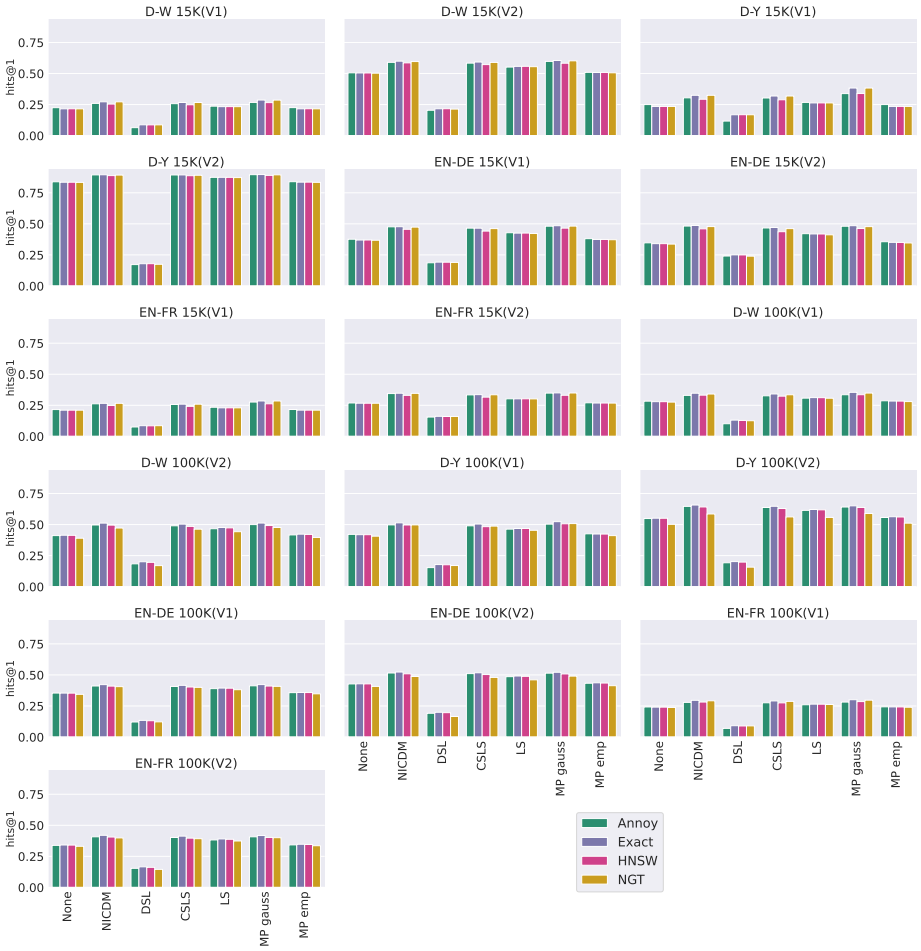

Figure 17: IPTransE

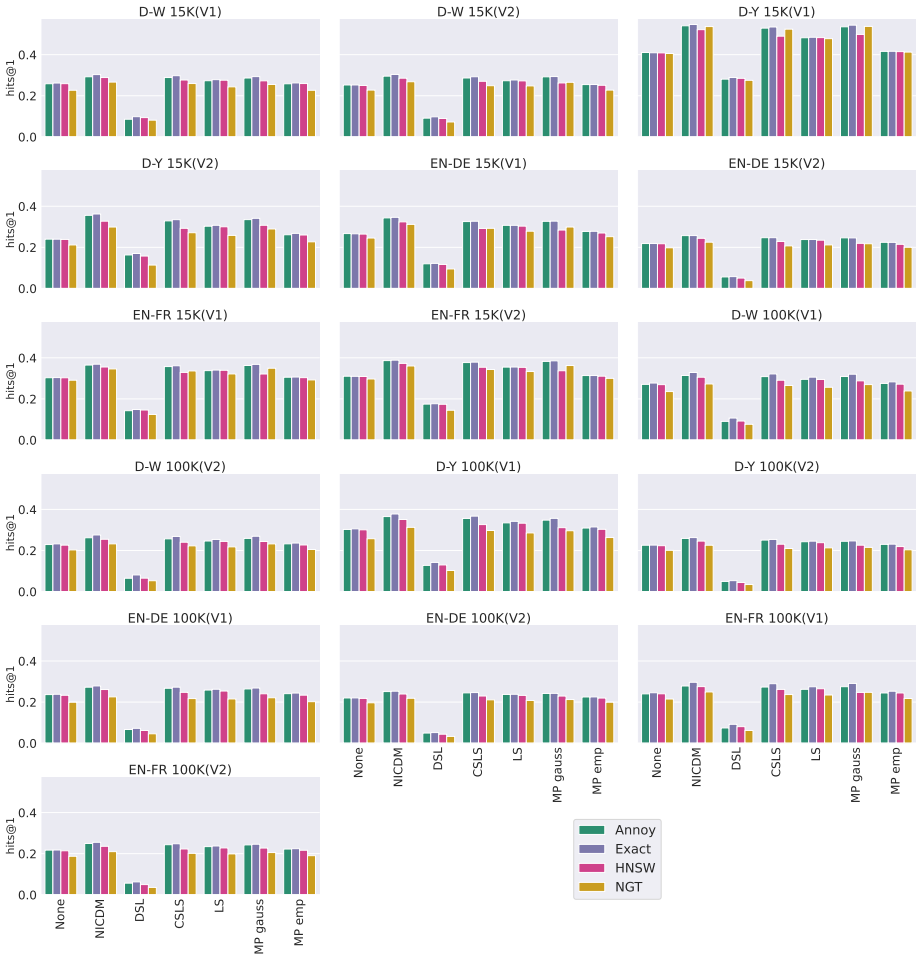

Figure 18: JAPE

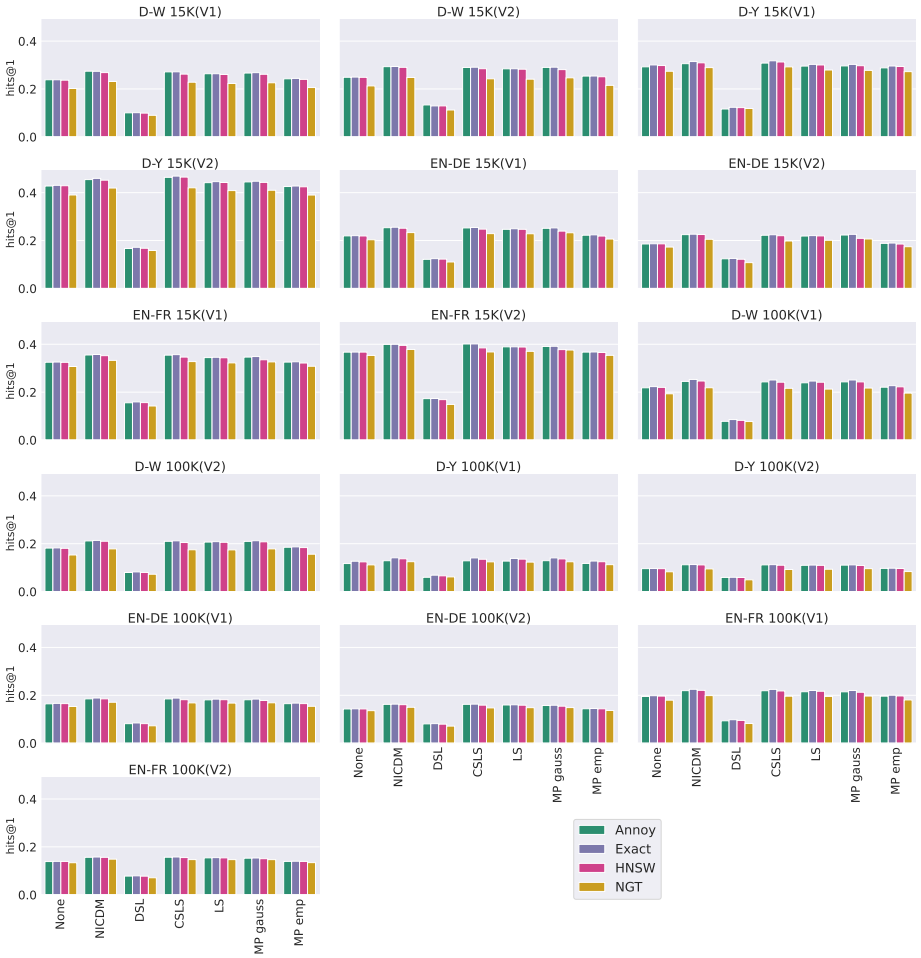

Figure 19: MultiKE

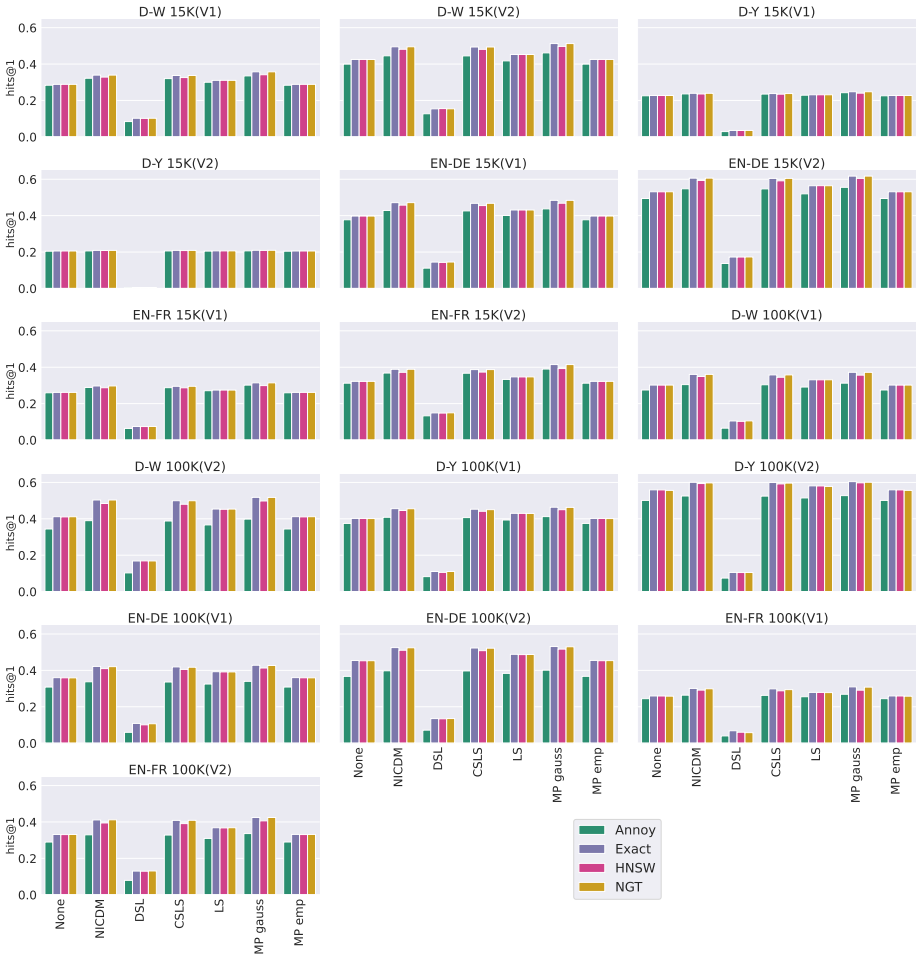

Figure 20: ProjE

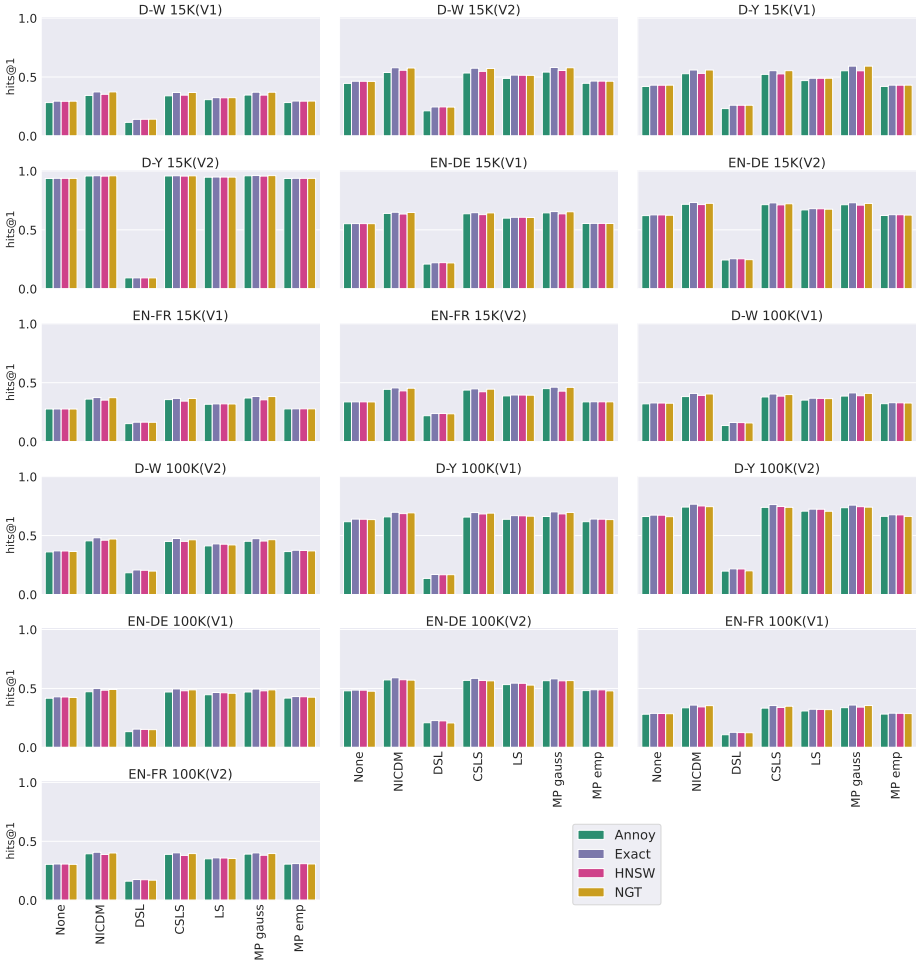

Figure 21: RotatE

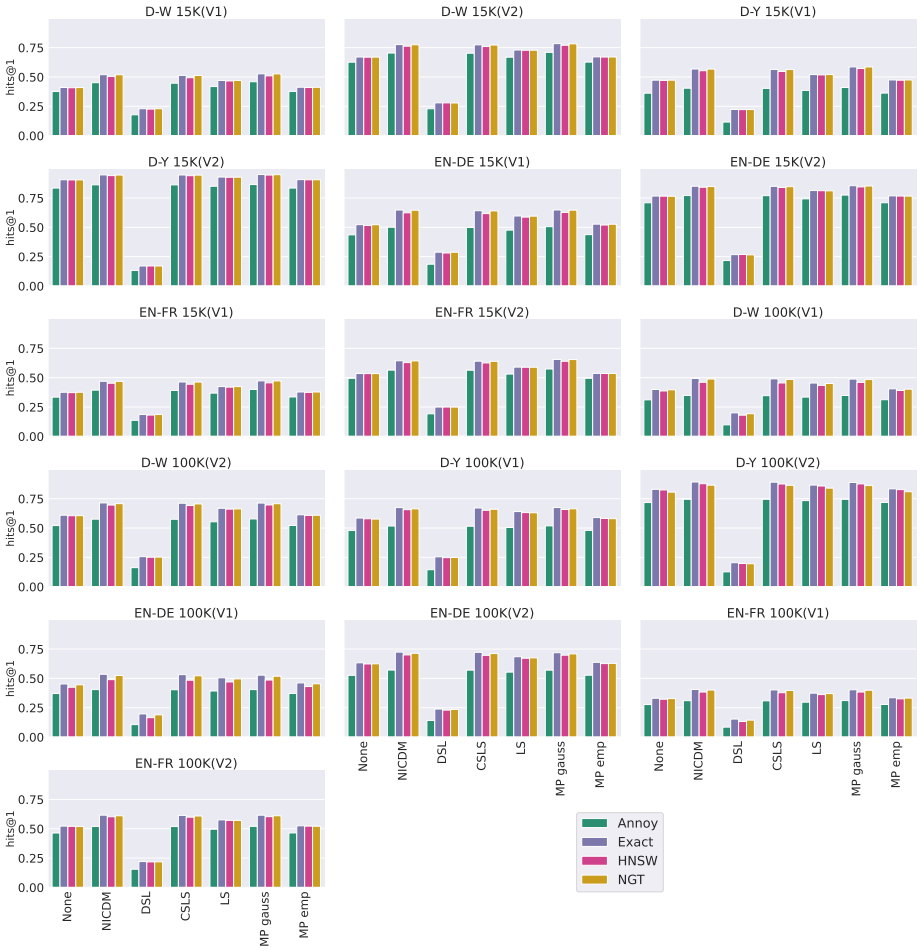

Figure 22: RSN4EA

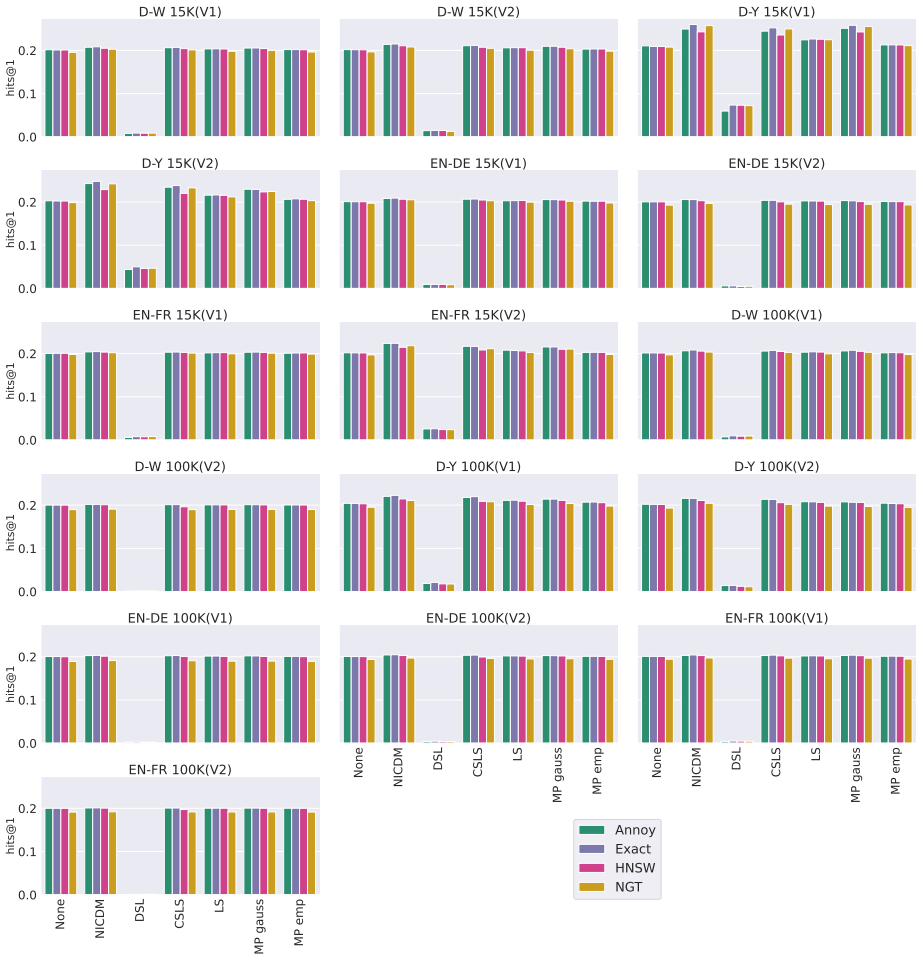

Figure 23: SimplE

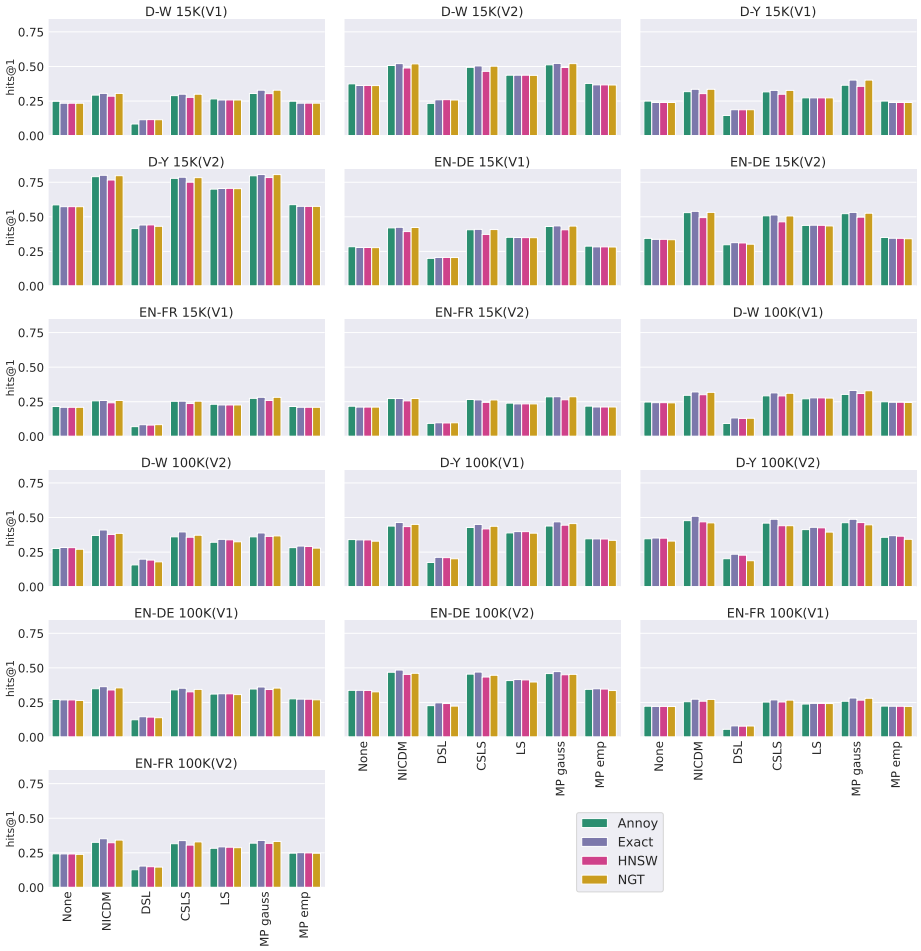

Figure 24: TransD

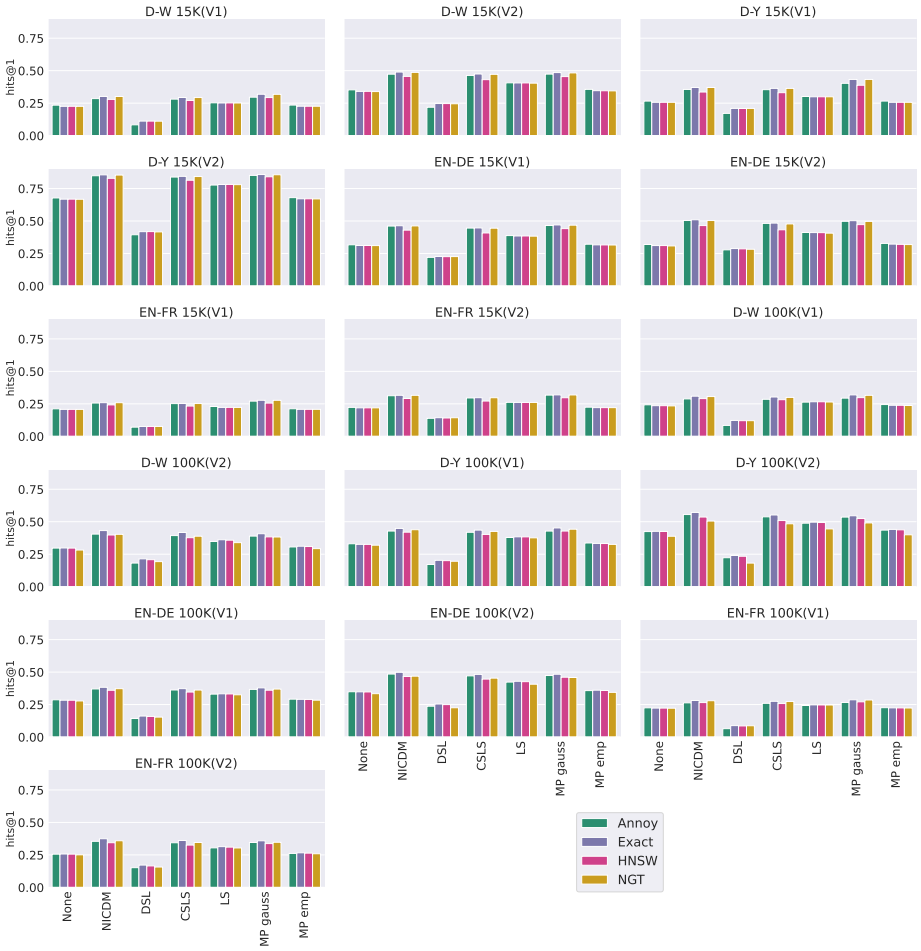

Figure 25: TransH

3 Results for hits@5

3.1 General

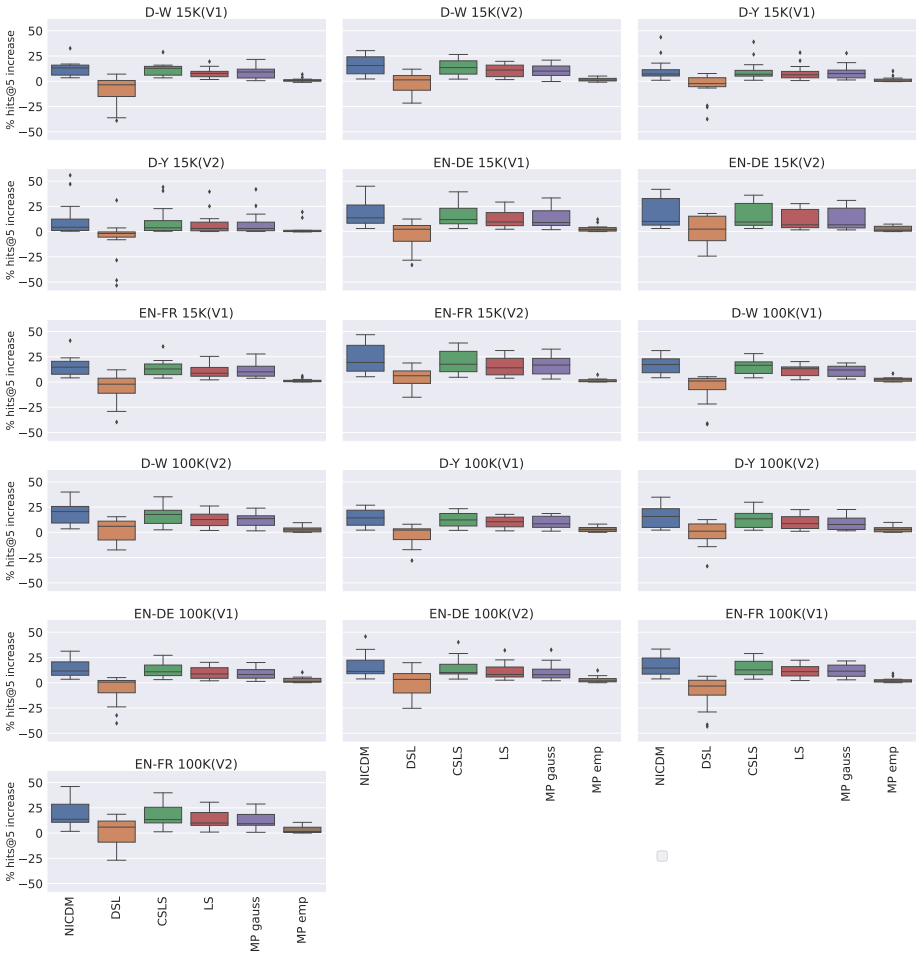

Figure 26: Exact NN improvement over baseline (exact NN without hubness reduction) for hits@5

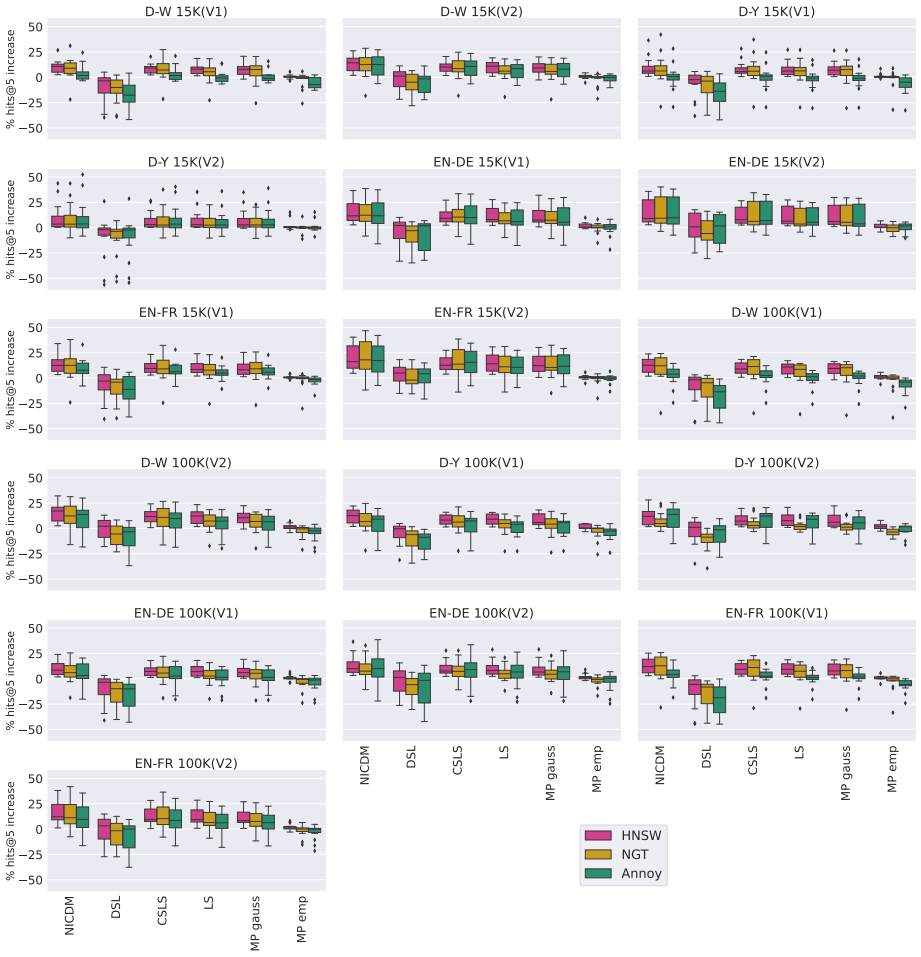

Figure 27: ANN improvement over baseline (exact NN without hubness reduction) for hits@5

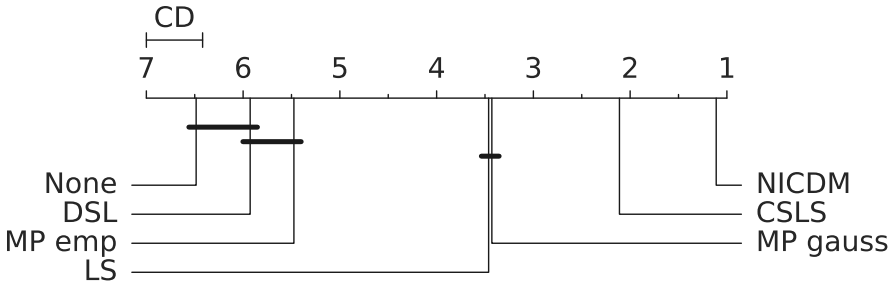

Figure 28: Critical distance diagram showing differences between hubness reduction techniques for exact NN with regards to hits@5

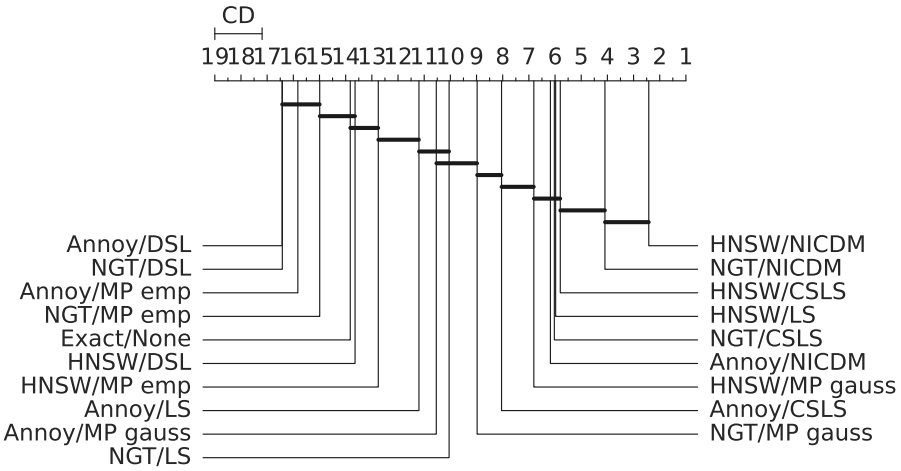

Figure 29: Critical distance diagram showing differences between hubness reduction techniques for ANN and baseline with regards to hits@5

3.2 Individual embedding approaches

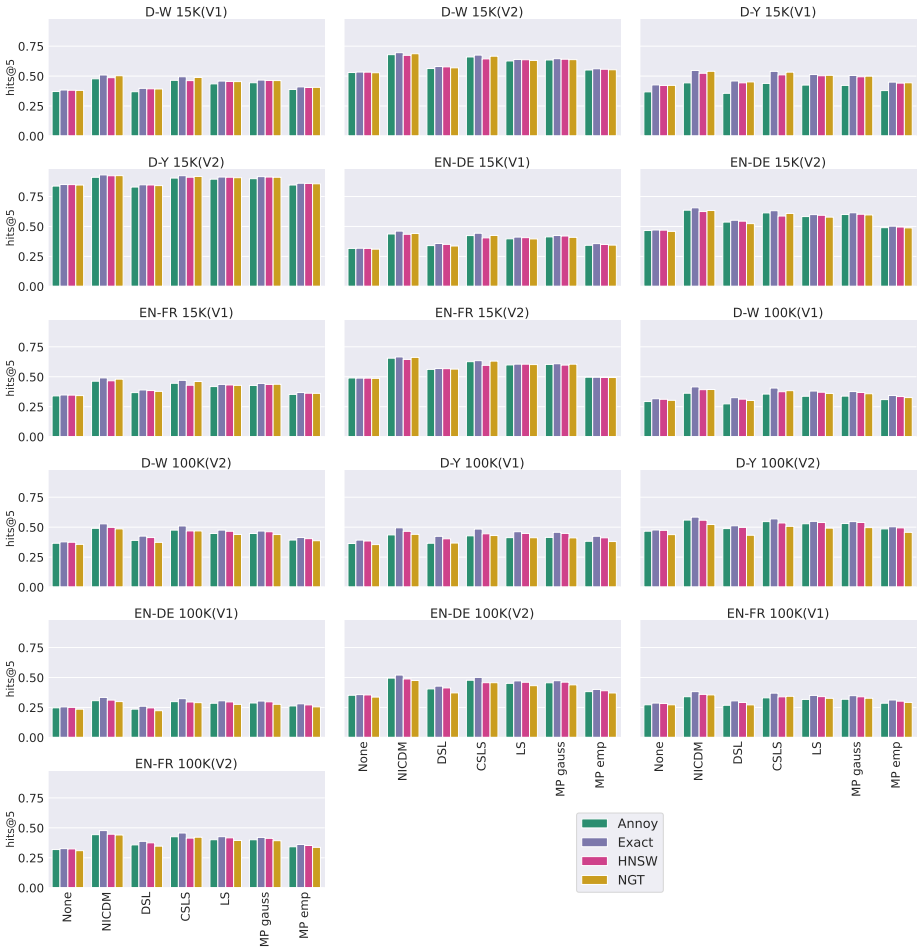

Figure 30: AttrE

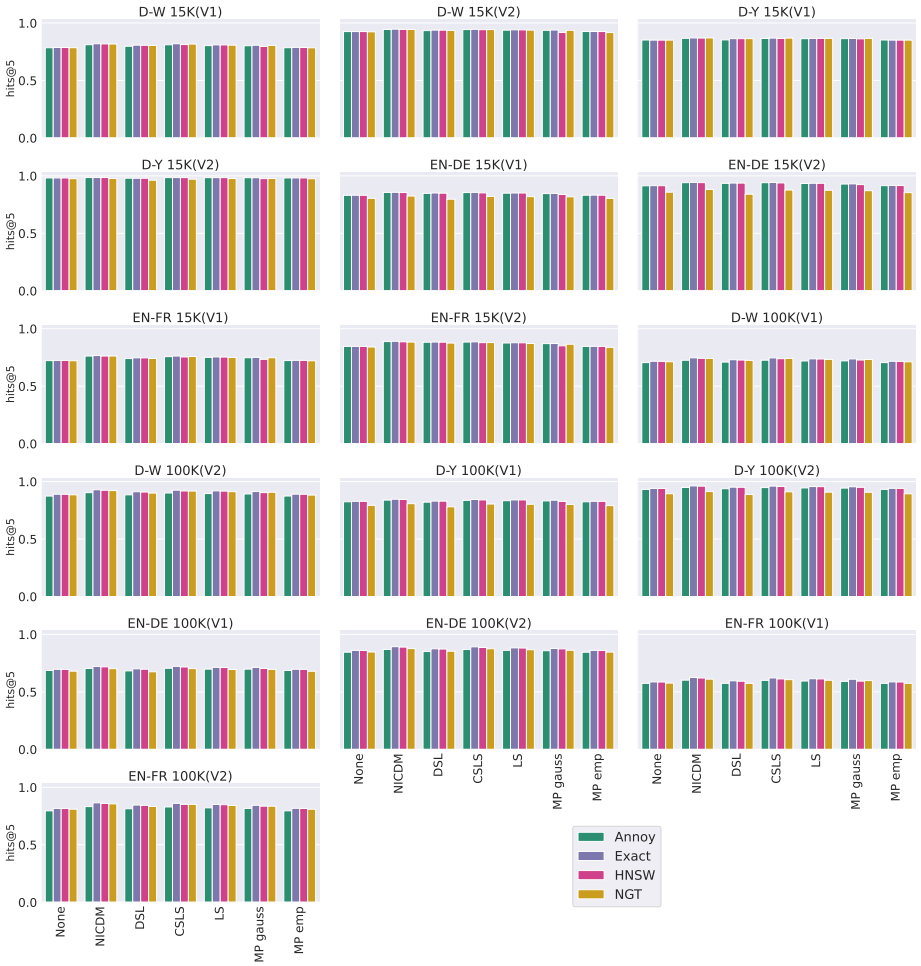

Figure 31: BootEA

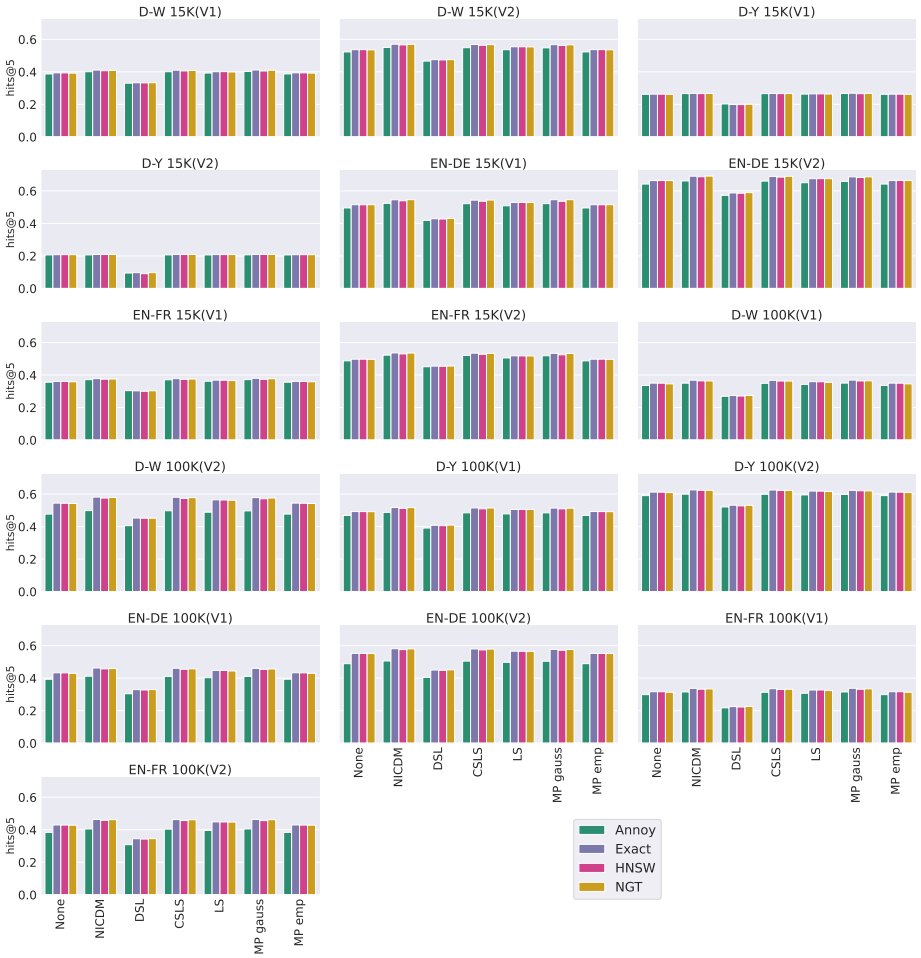

Figure 32: ConvE

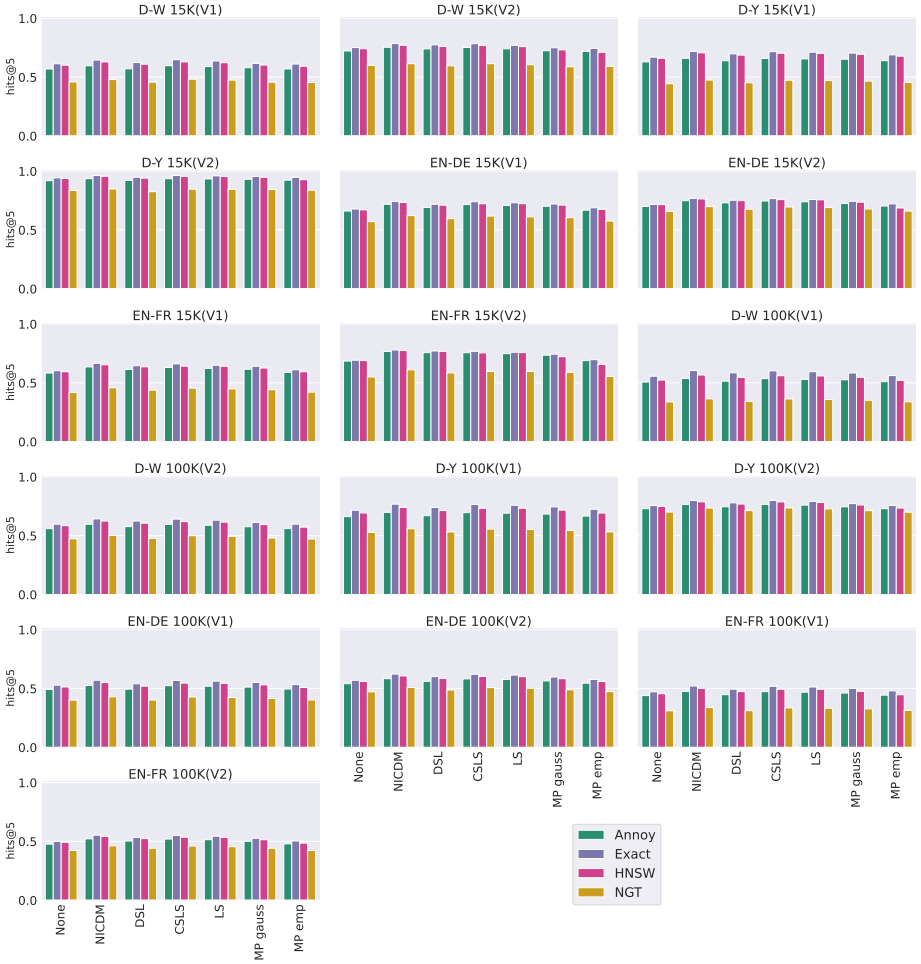

Figure 33: GCNAlign

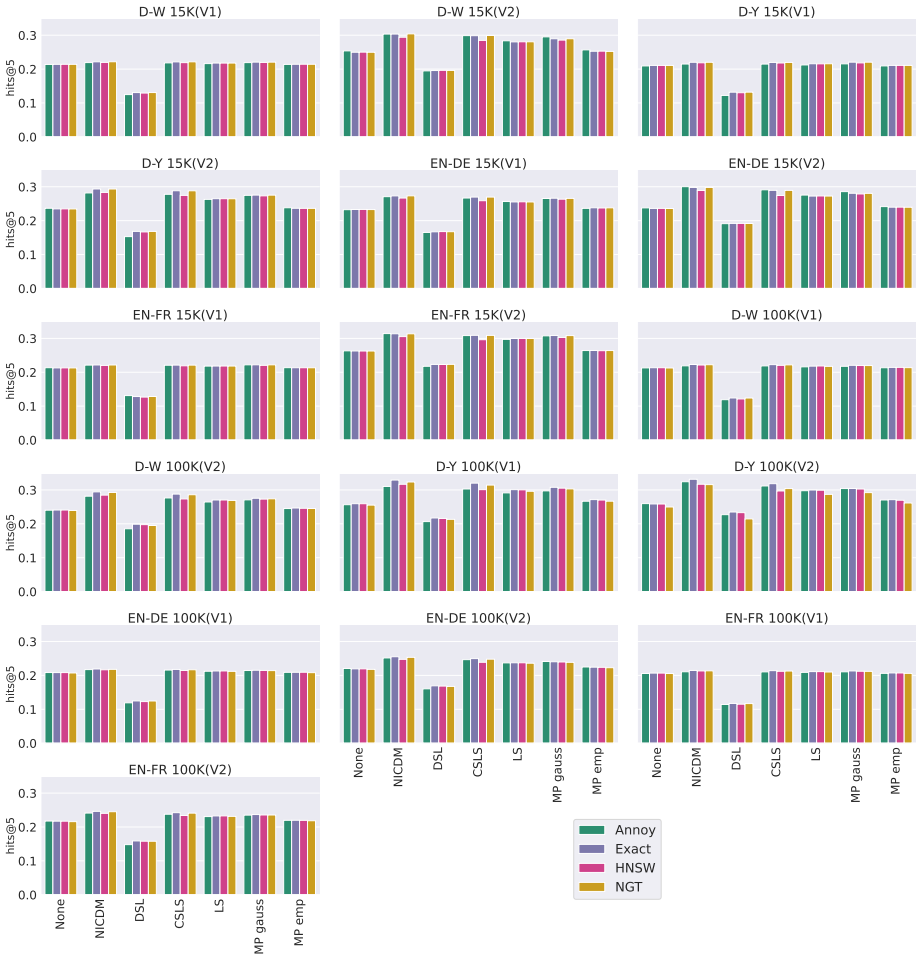

Figure 34: HolE

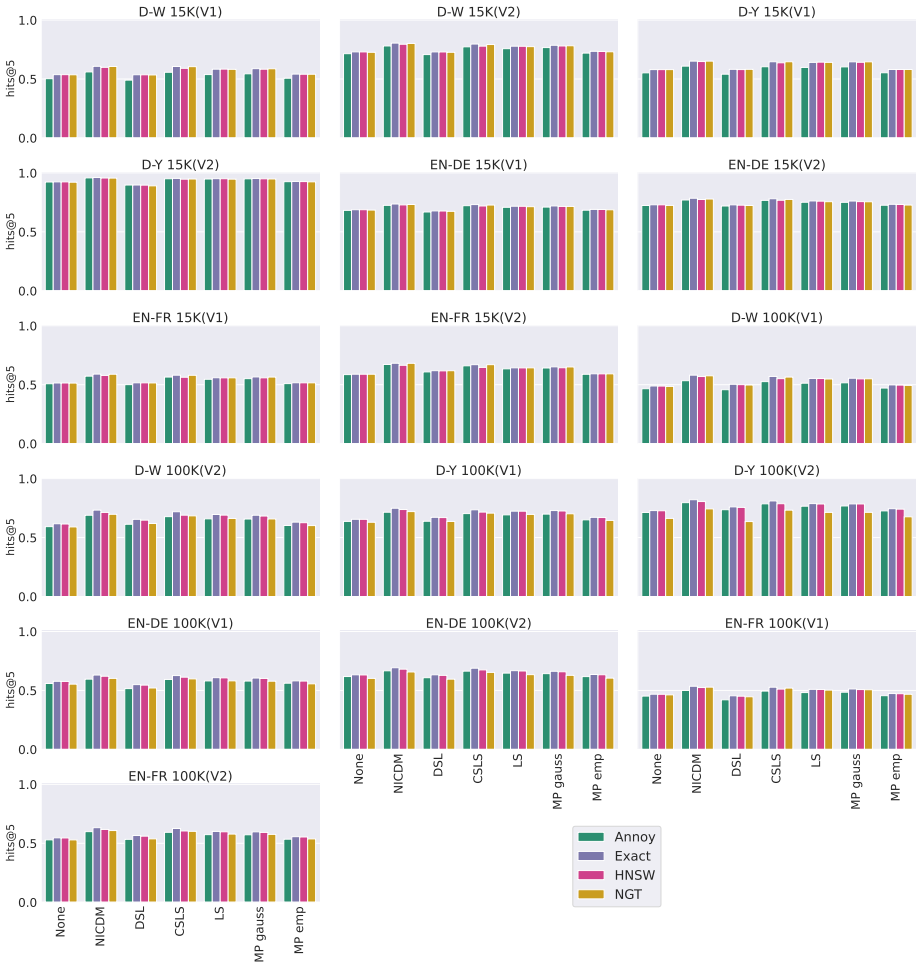

Figure 35: IMUSE

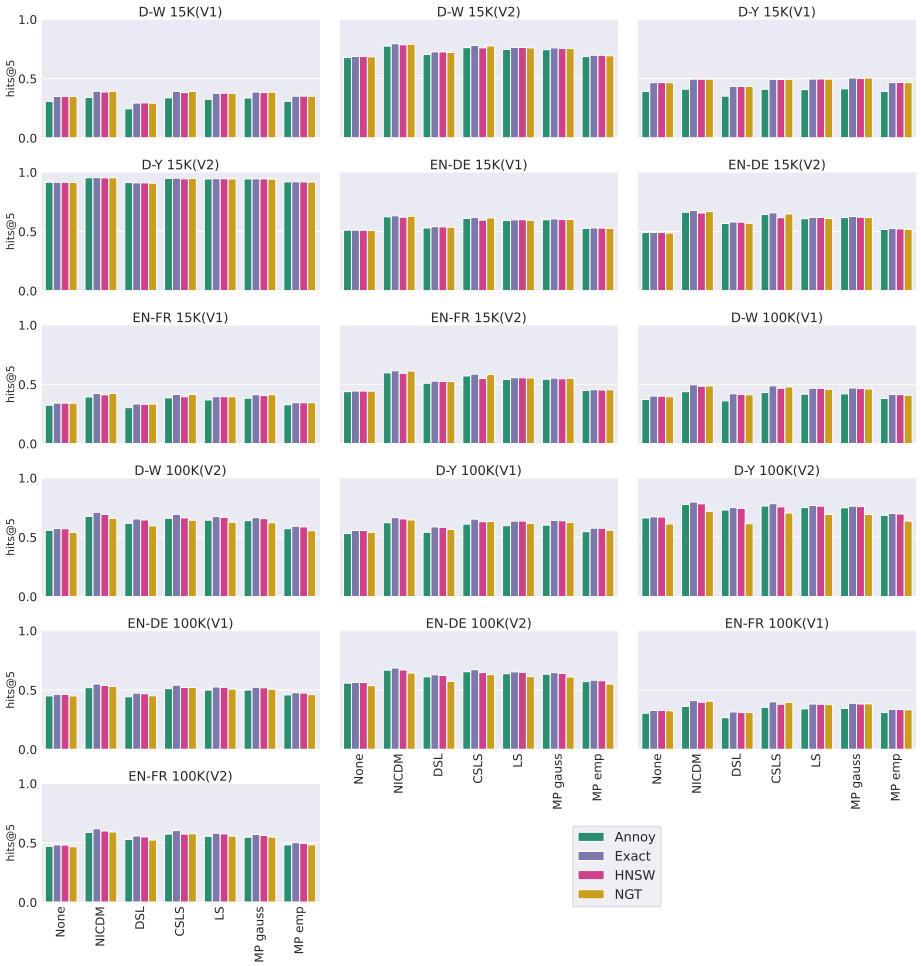

Figure 36: IPTransE

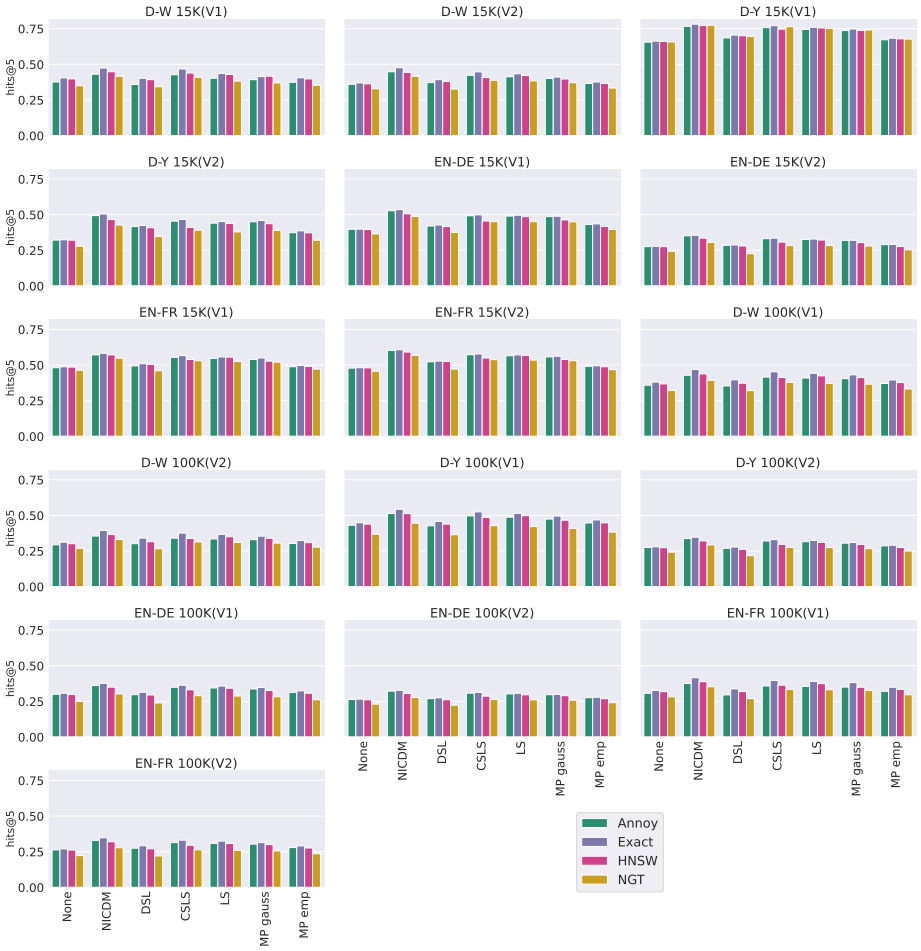

Figure 37: JAPE

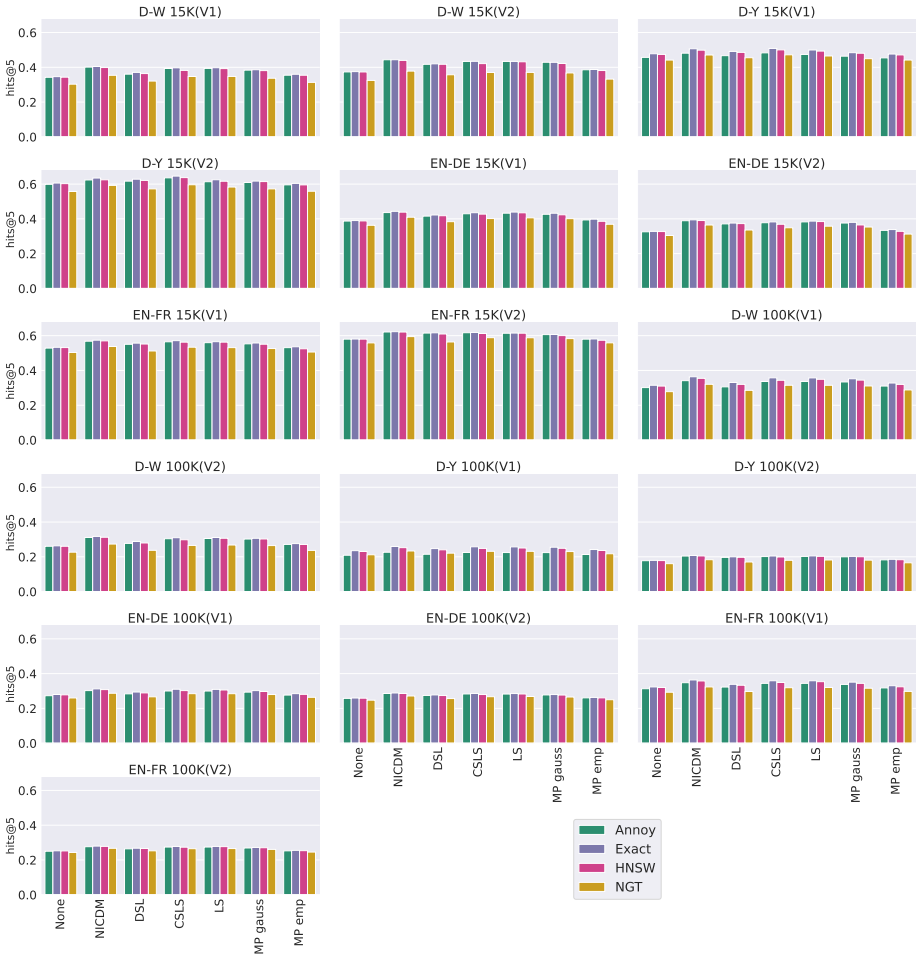

Figure 38: MultiKE

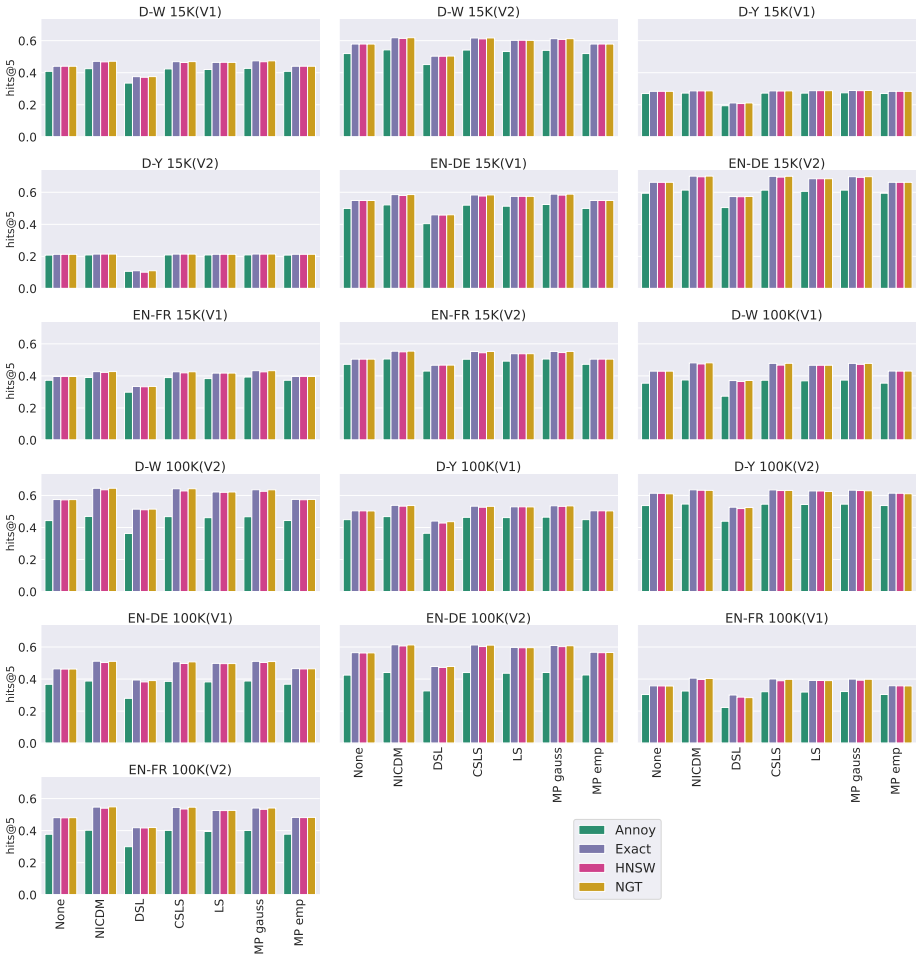

Figure 39: ProjE

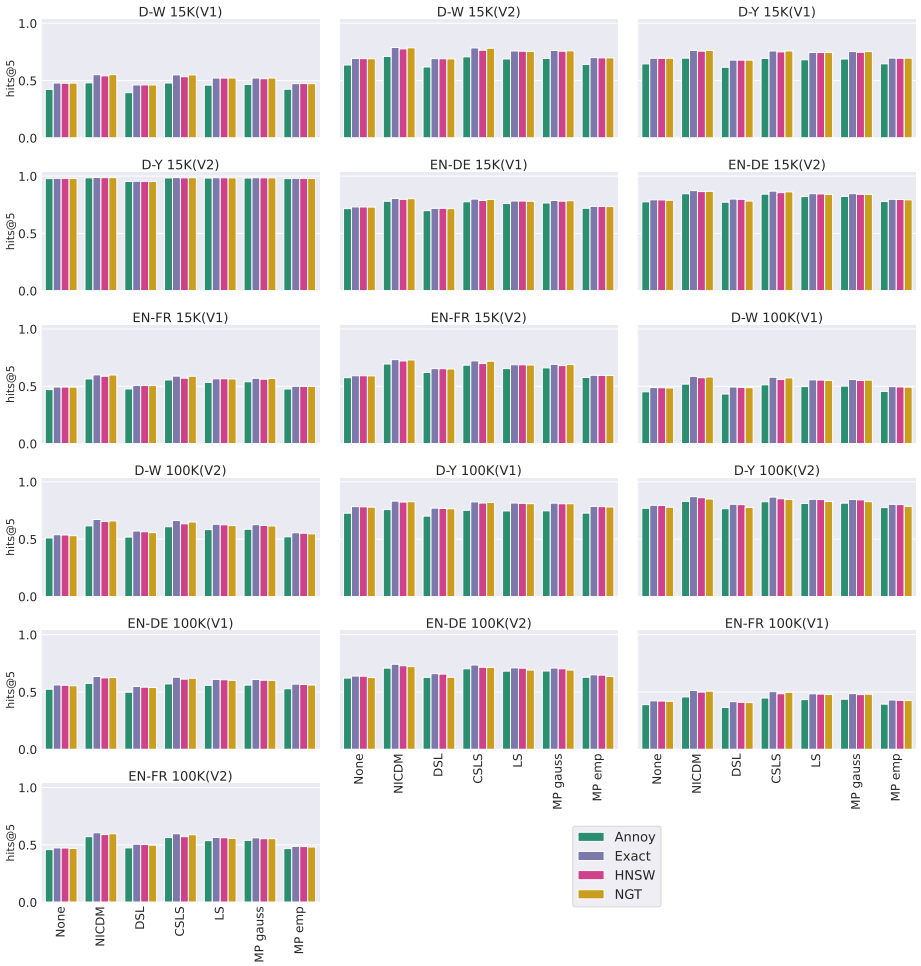

Figure 40: RotatE

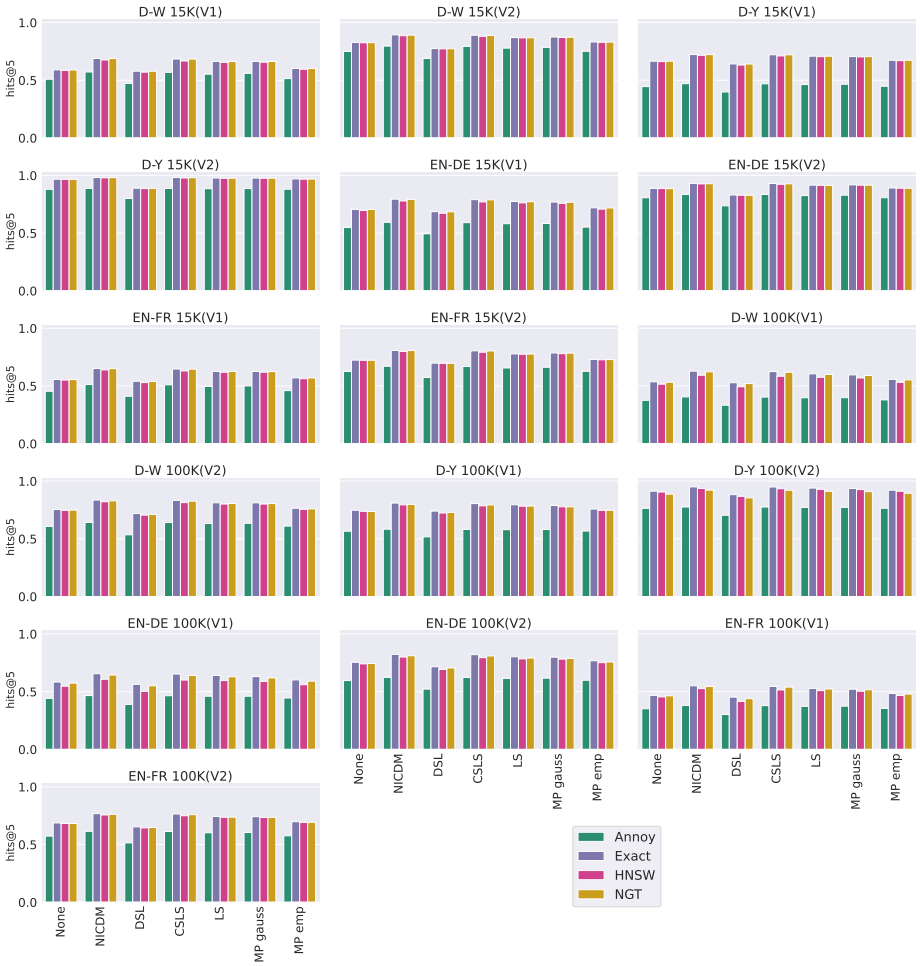

Figure 41: RSN4EA

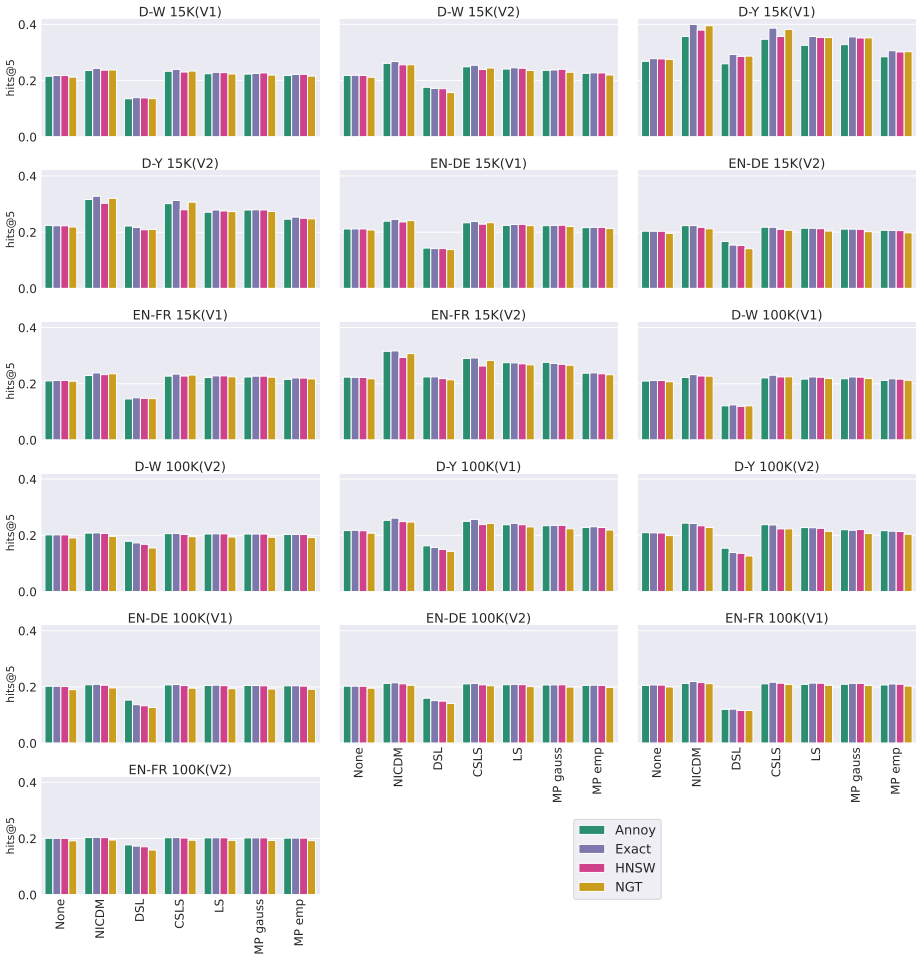

Figure 42: SimplE

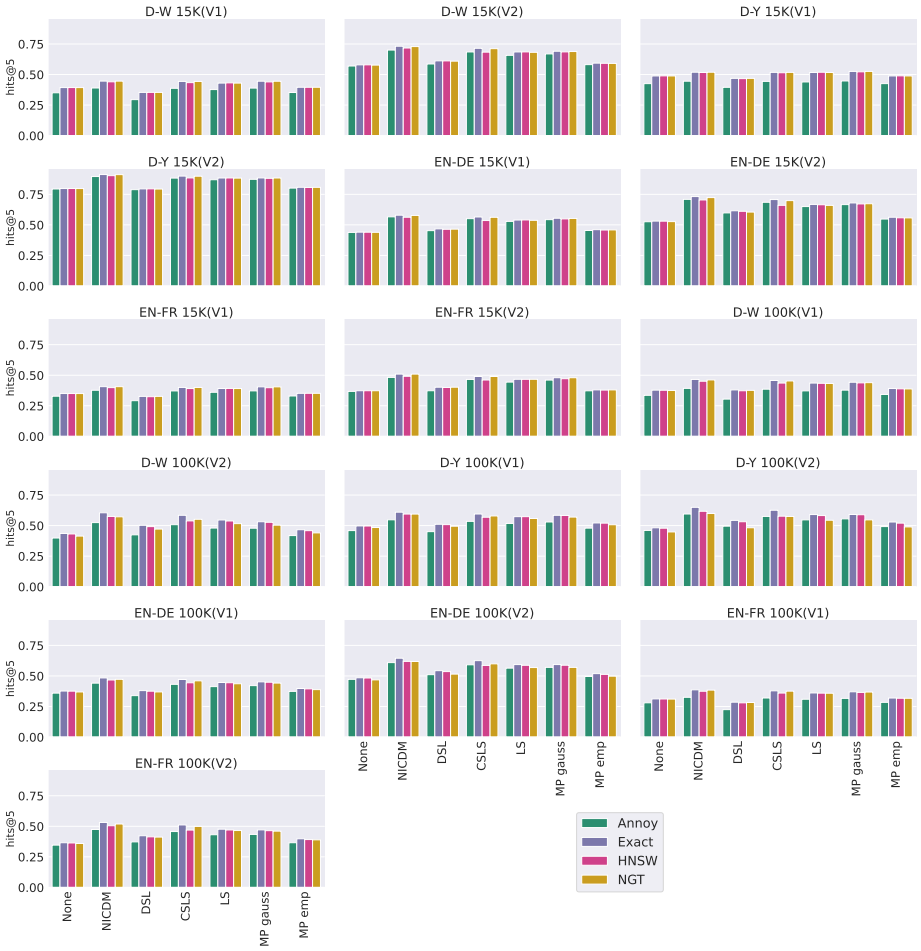

Figure 43: TransD

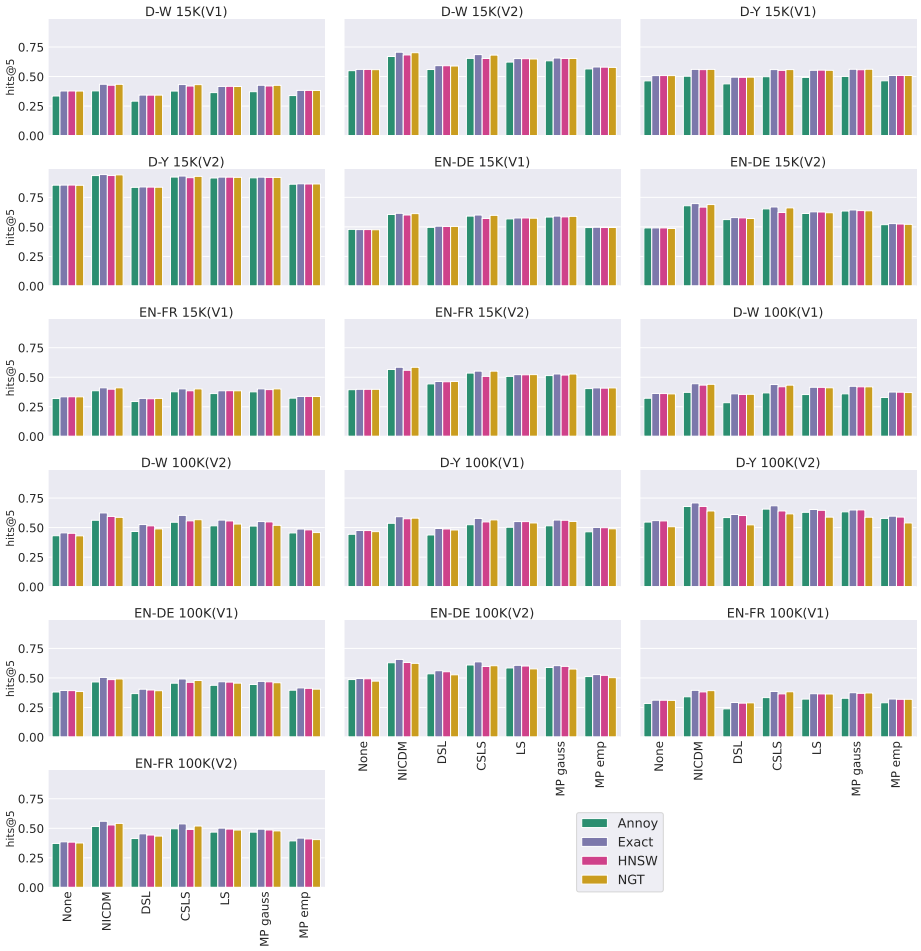

Figure 44: TransH

4 Results for hits@10

4.1 General

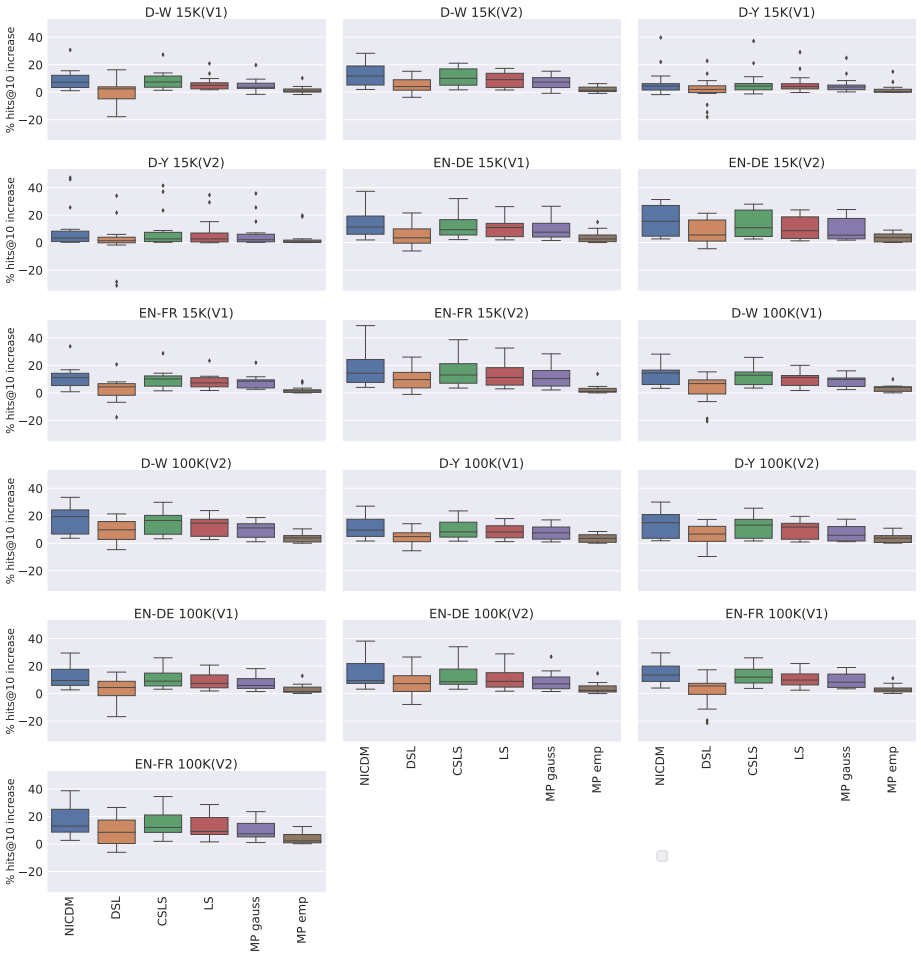

Figure 45: Exact NN improvement over baseline (exact NN without hubness reduction) for hits@10

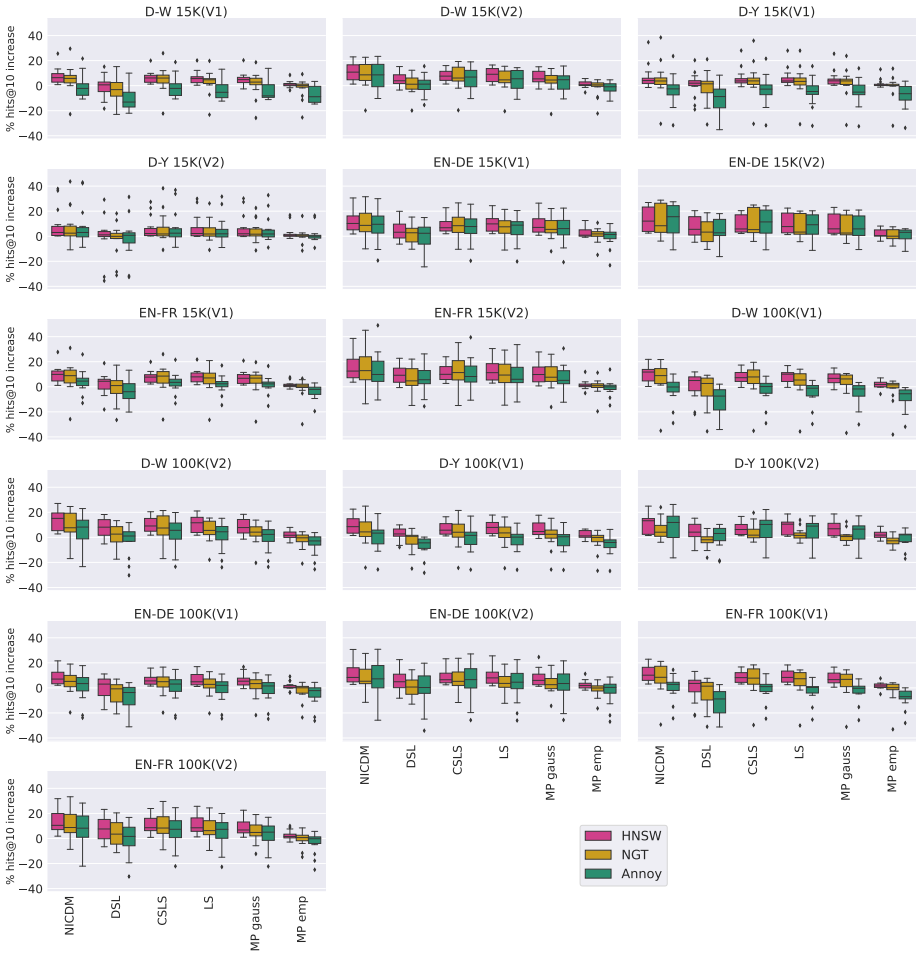

Figure 46: ANN improvement over baseline (exact NN without hubness reduction) for hits@10

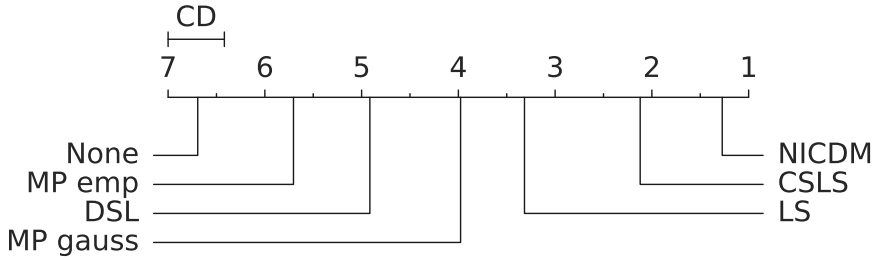

Figure 47: Critical distance diagram showing differences between hubness reduction techniques for exact NN with regards to hits@10

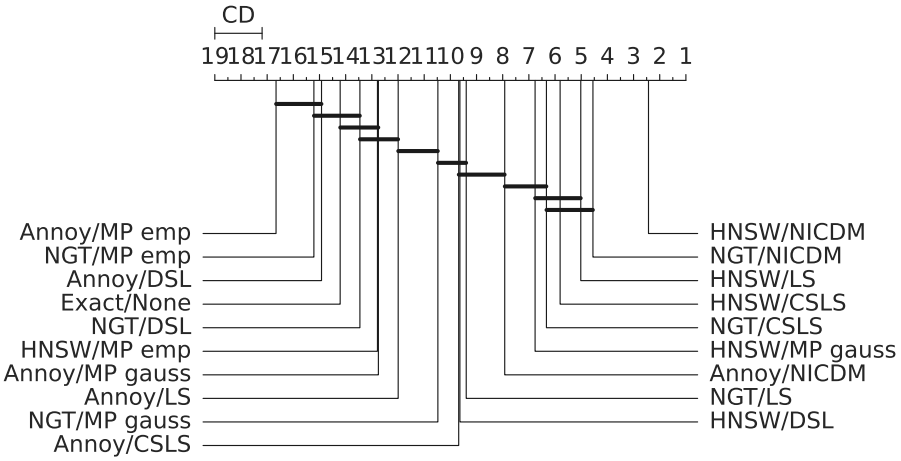

Figure 48: Critical distance diagram showing differences between hubness reduction techniques for ANN and baseline with regards to hits@10

4.2 Individual embedding approaches

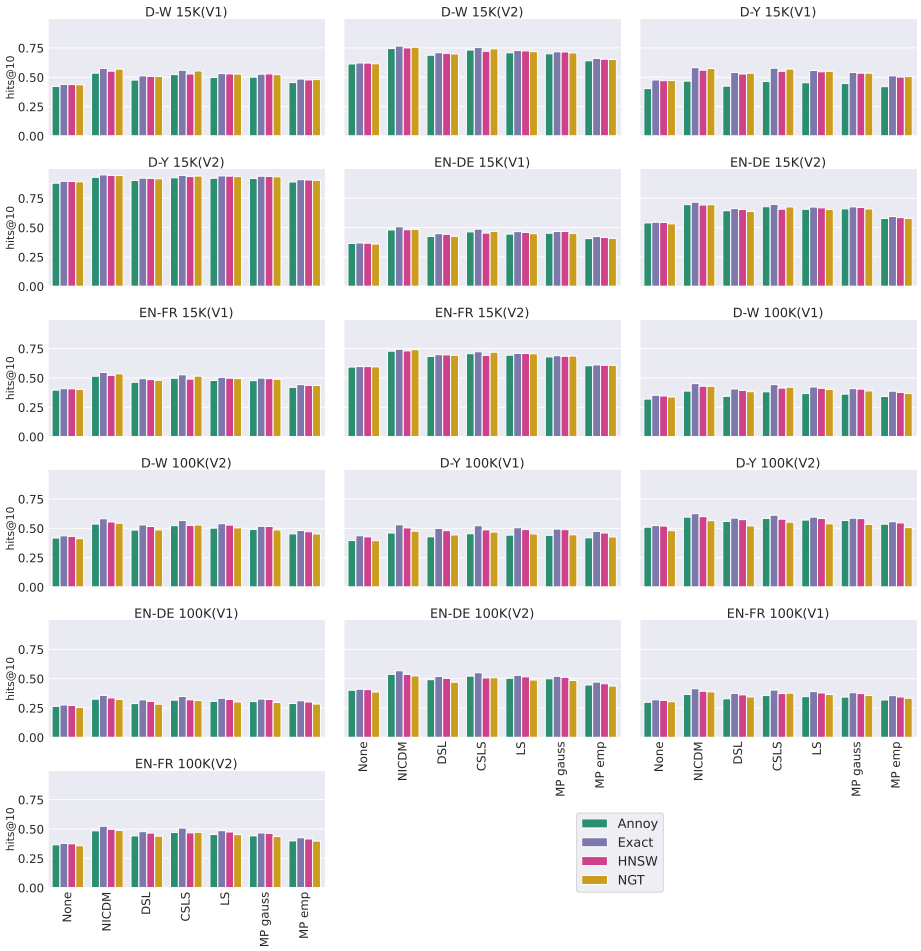

Figure 49: AttrE

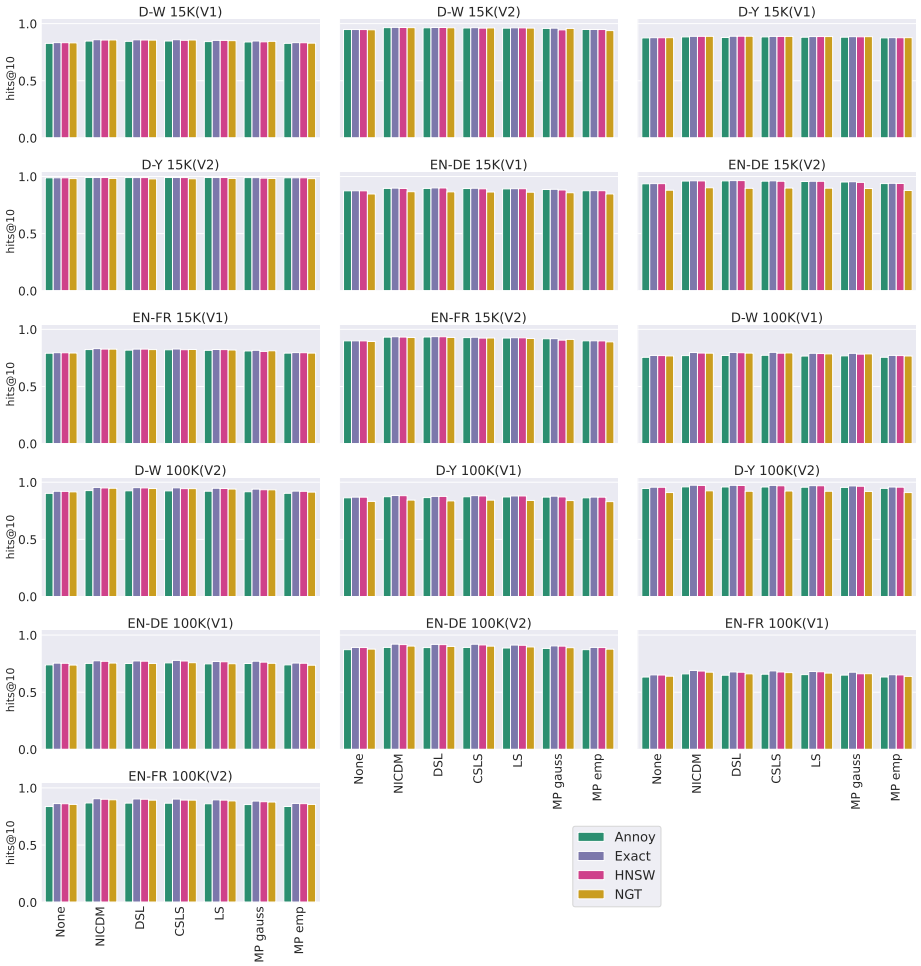

Figure 50: BootEA

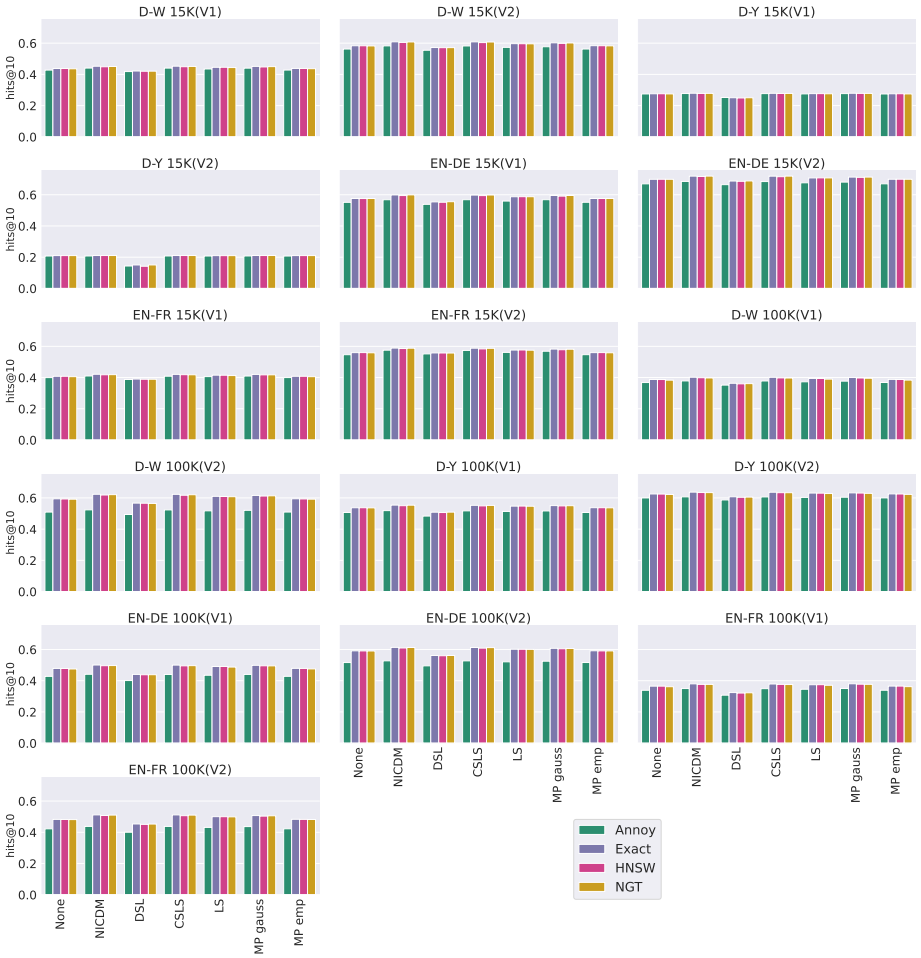

Figure 51: ConvE

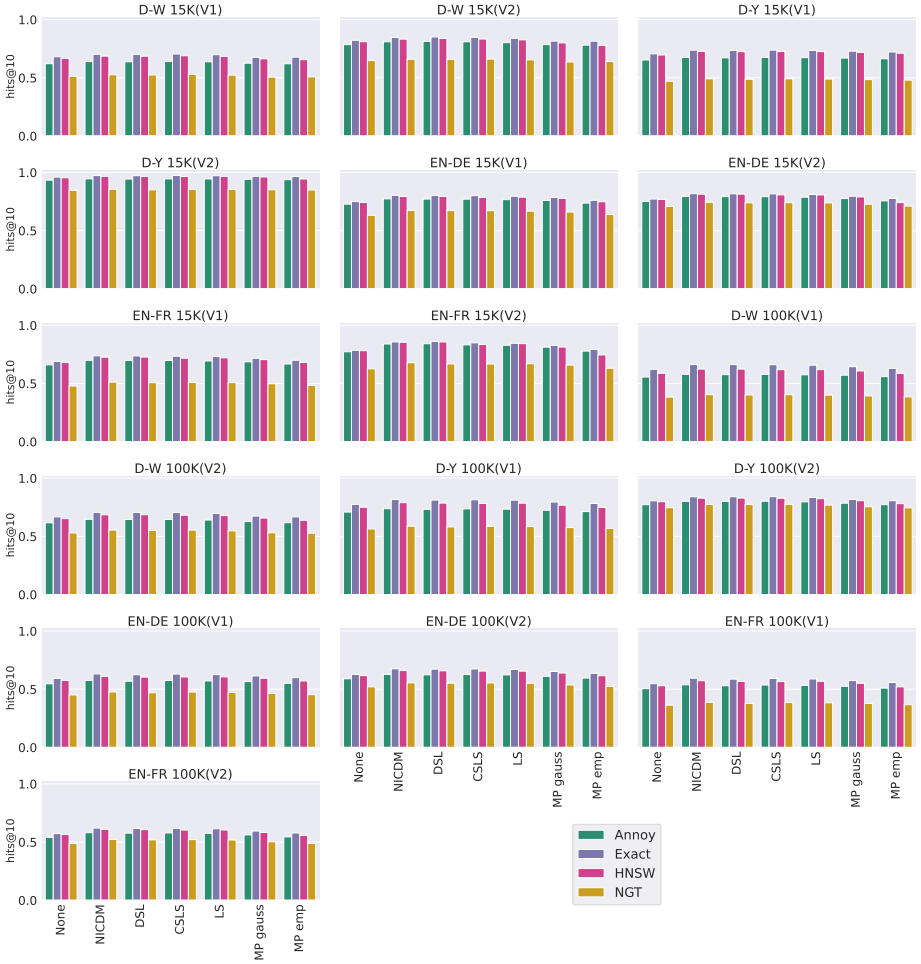

Figure 52: GCNAlign

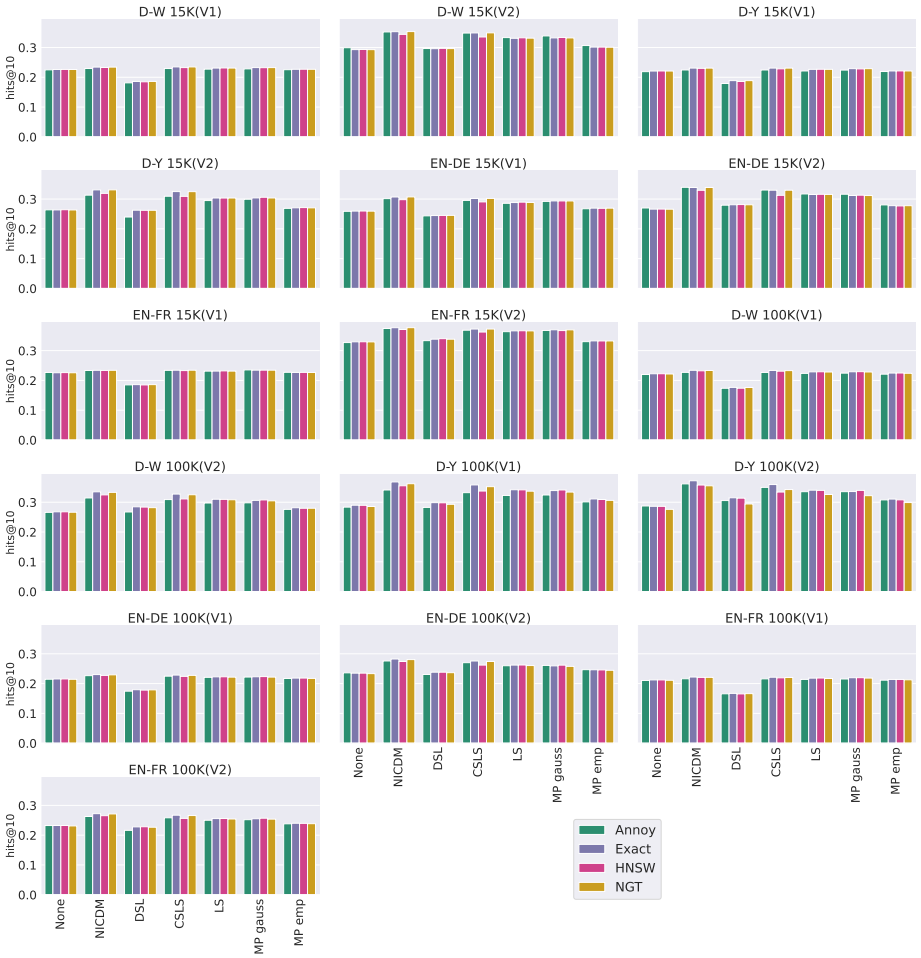

Figure 53: HolE

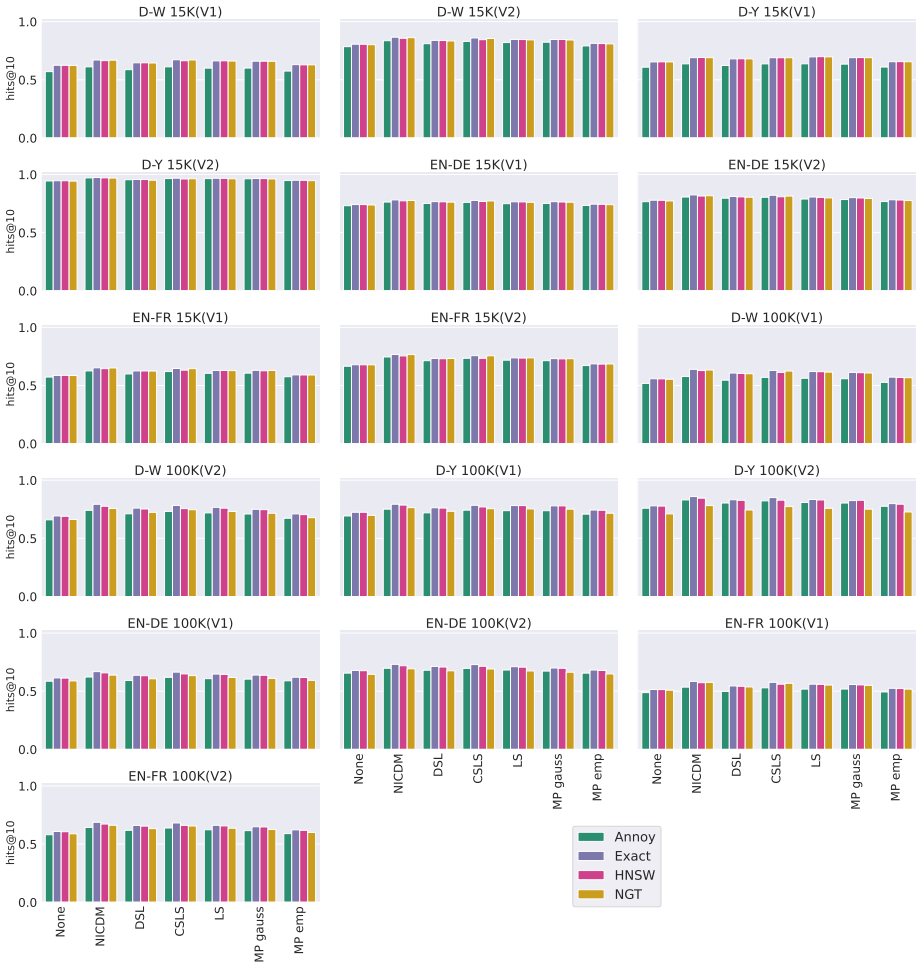

Figure 54: IMUSE

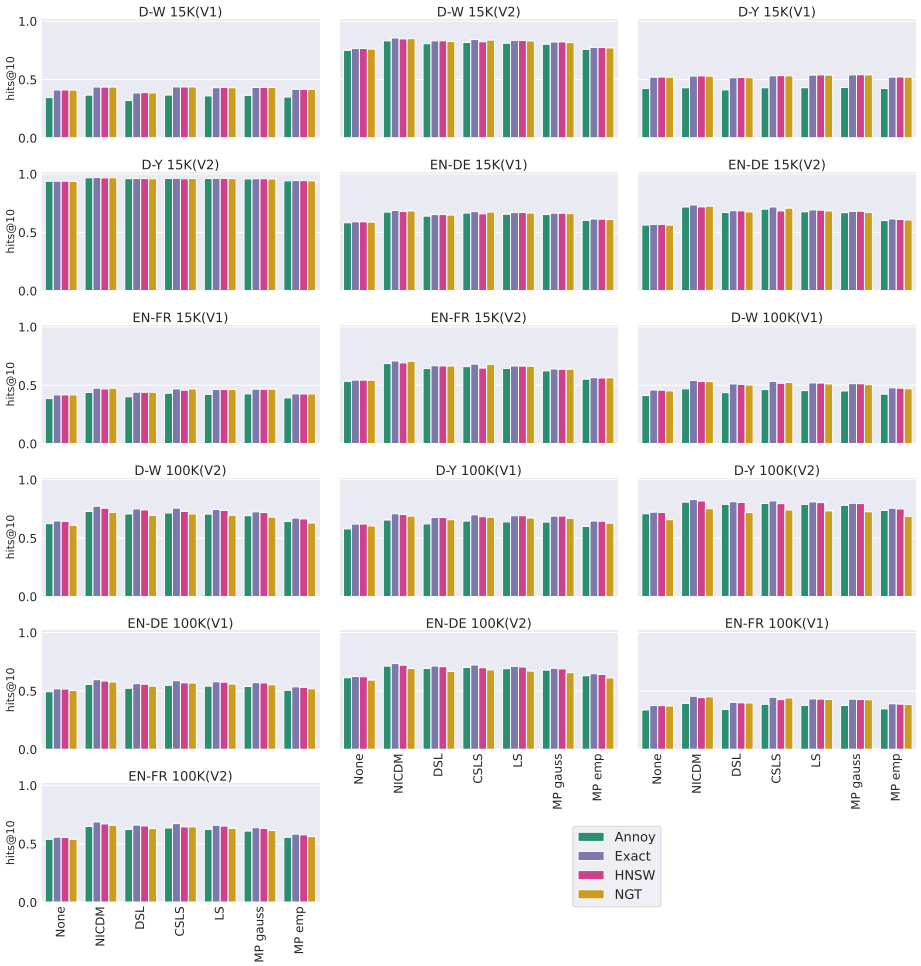

Figure 55: IPTransE

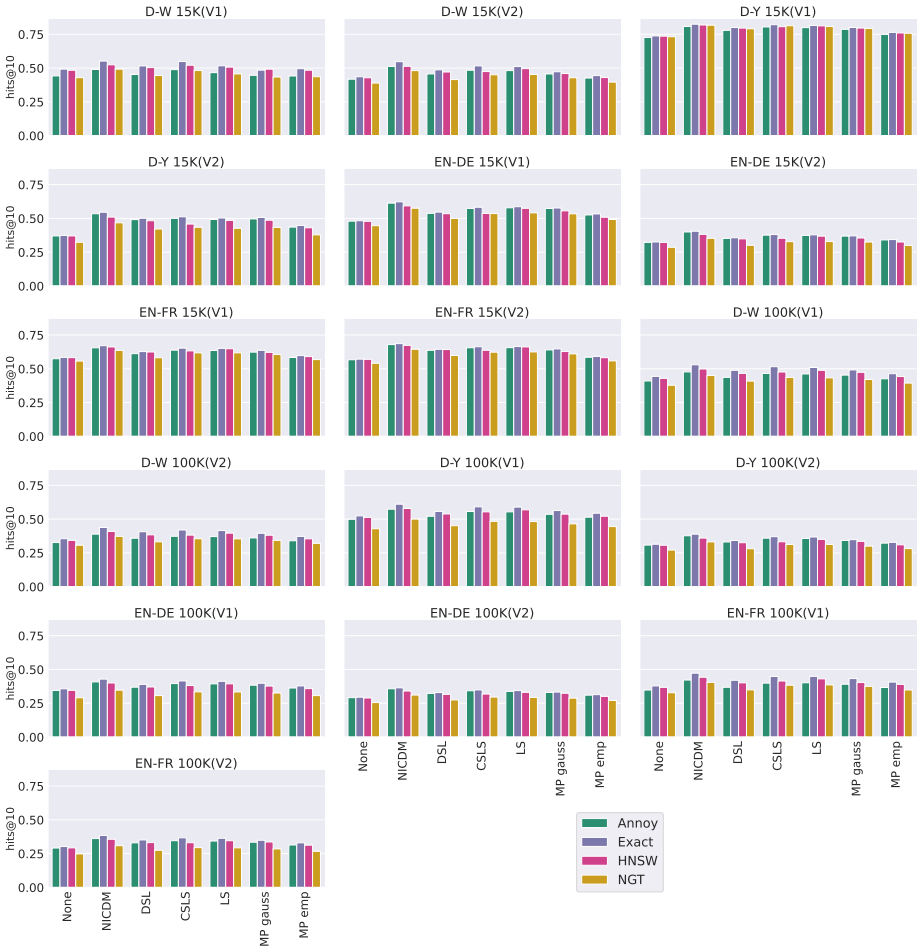

Figure 56: JAPE

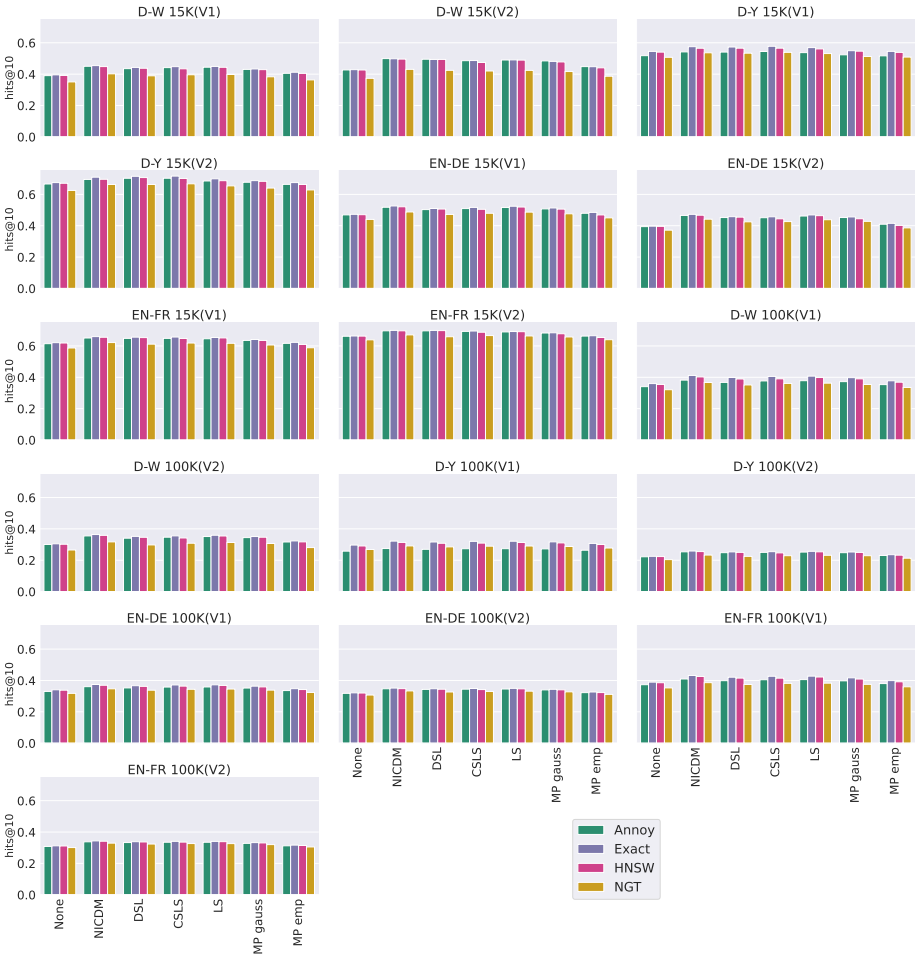

Figure 57: MultiKE

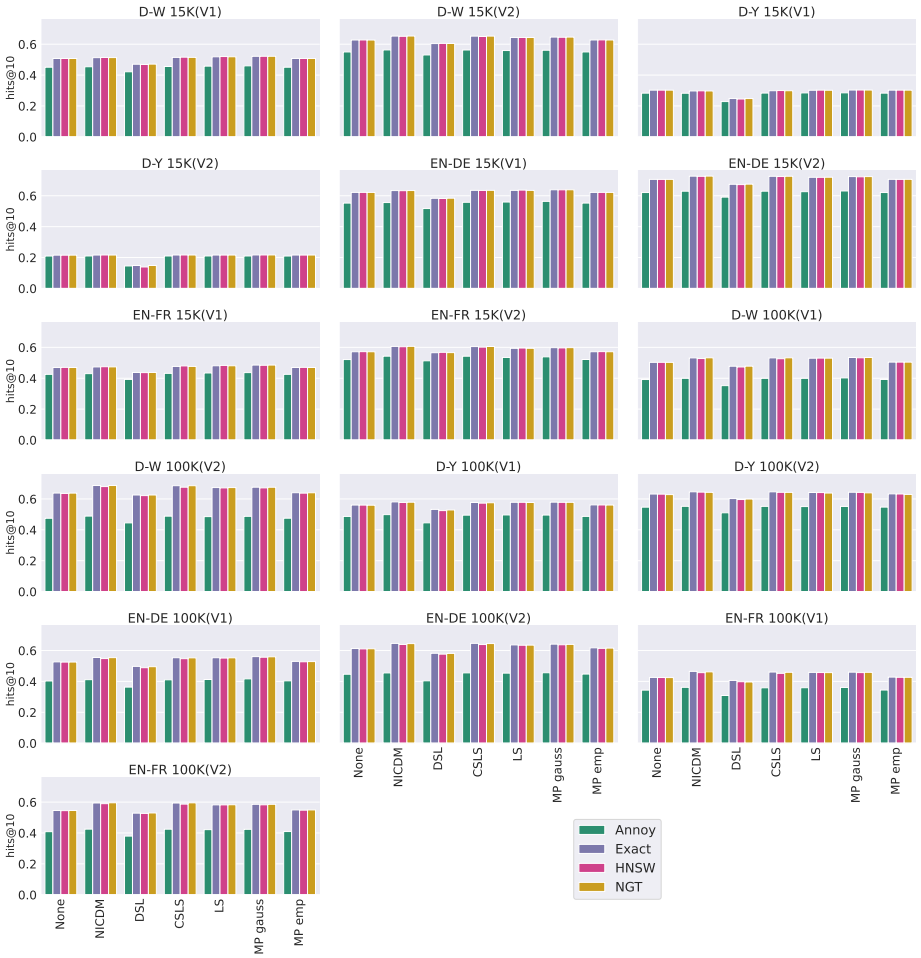

Figure 58: ProjE

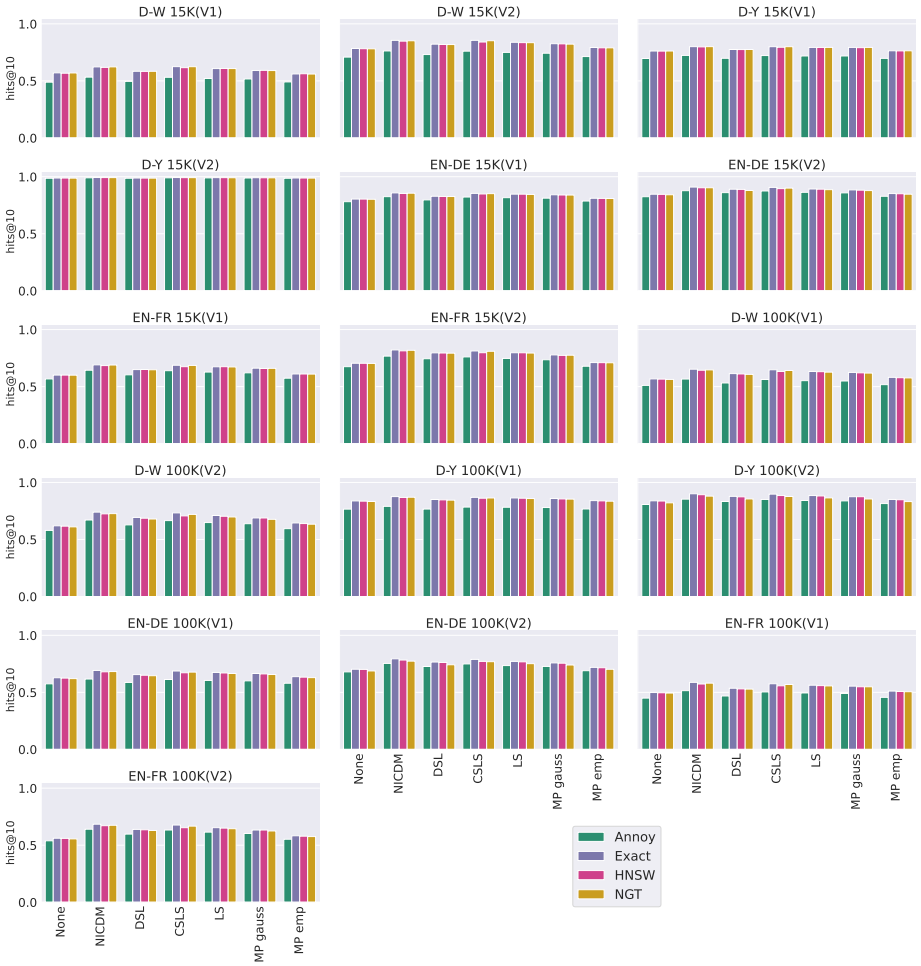

Figure 59: RotatE

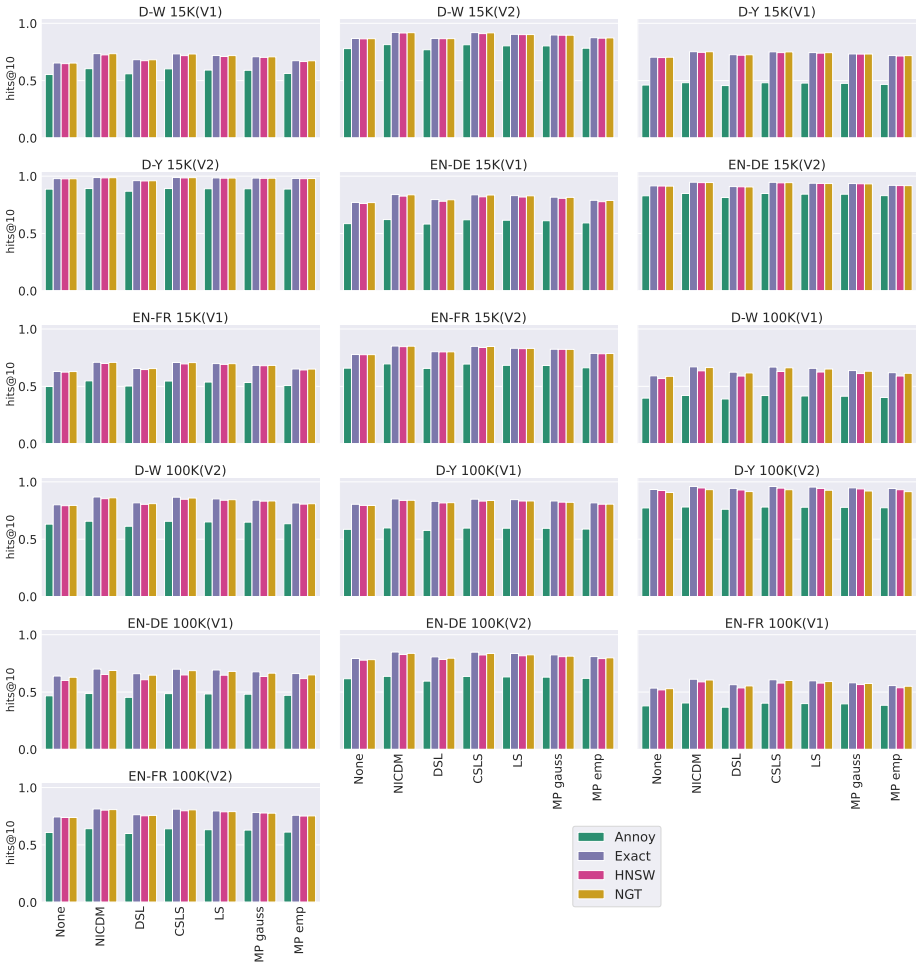

Figure 60: RSN4EA

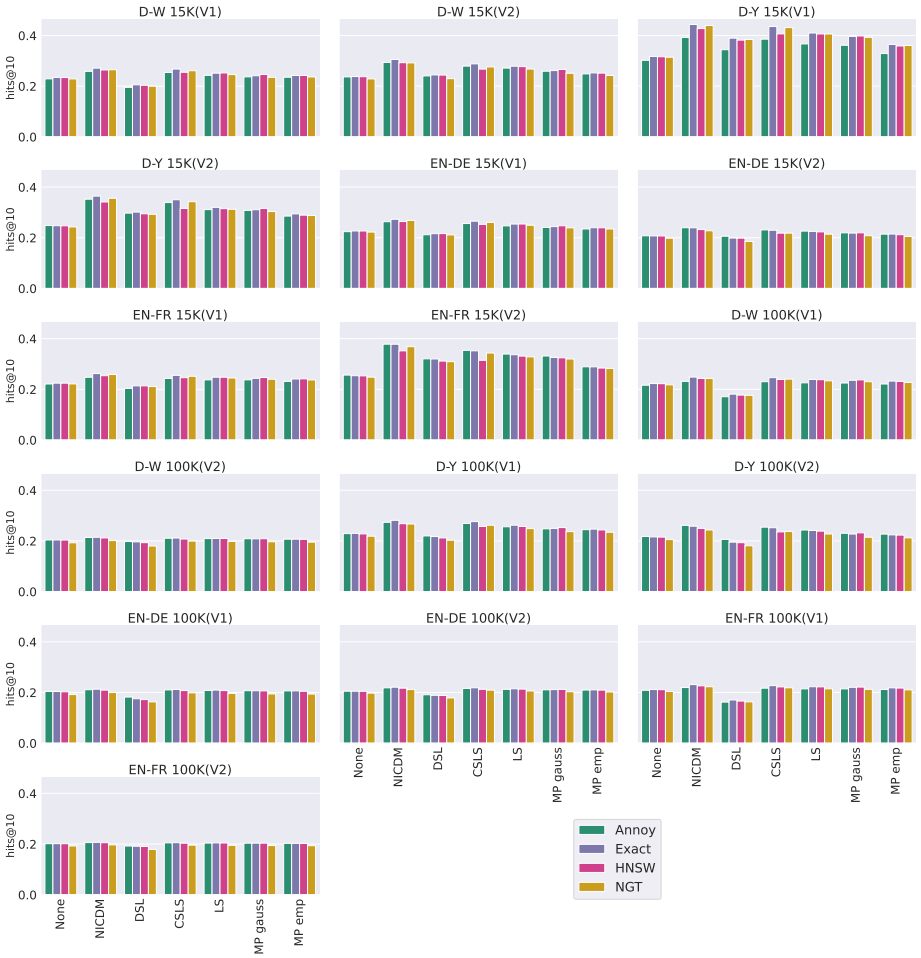

Figure 61: SimplE

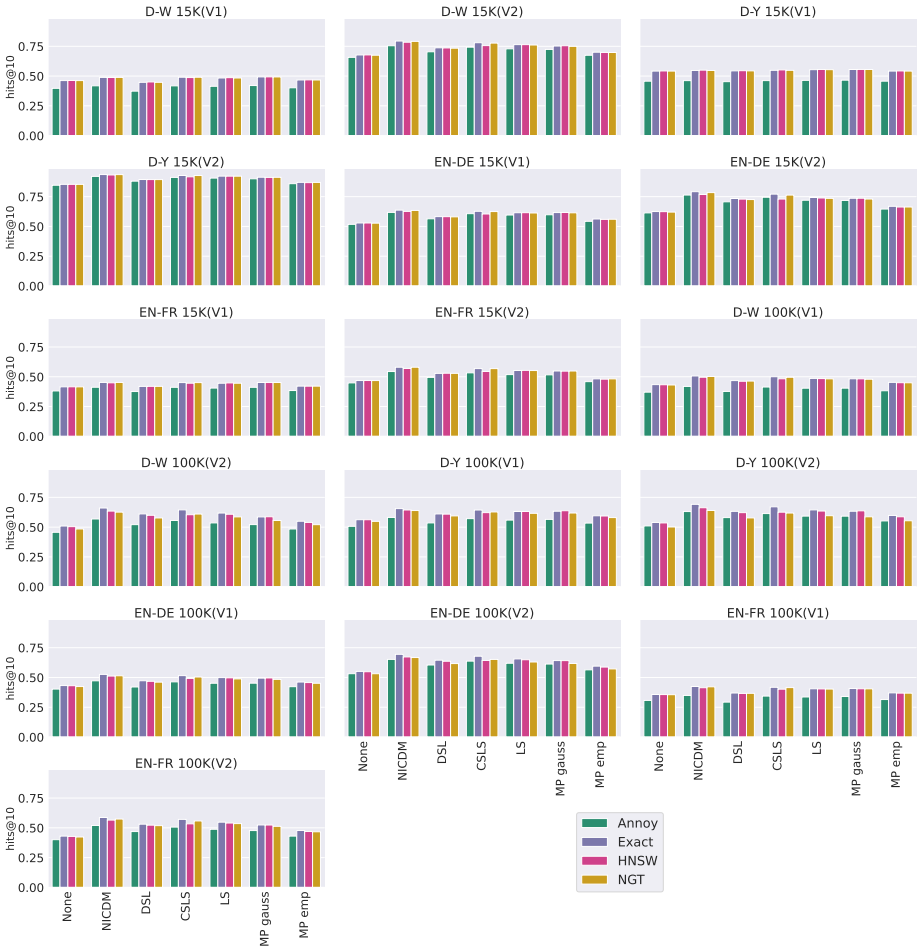

Figure 62: TransD

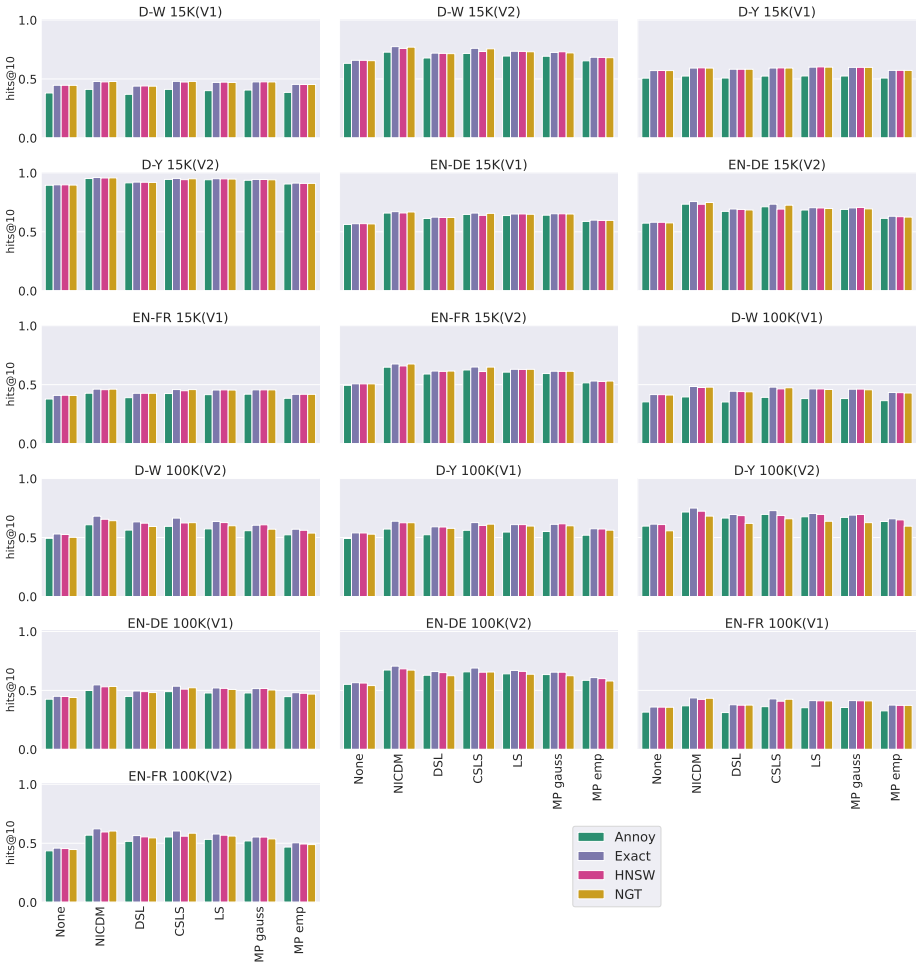

Figure 63: TransH

5 Results for hits@25

5.1 General

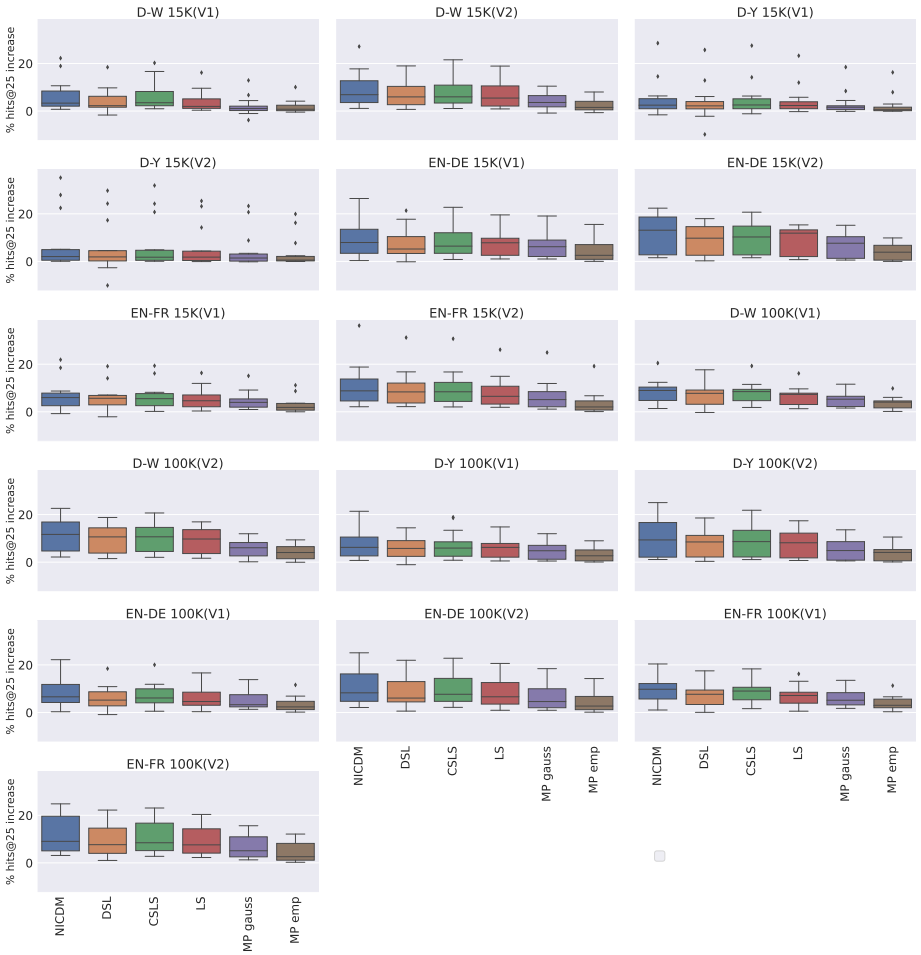

Figure 64: Exact NN improvement over baseline (exact NN without hubness reduction) for hits@25

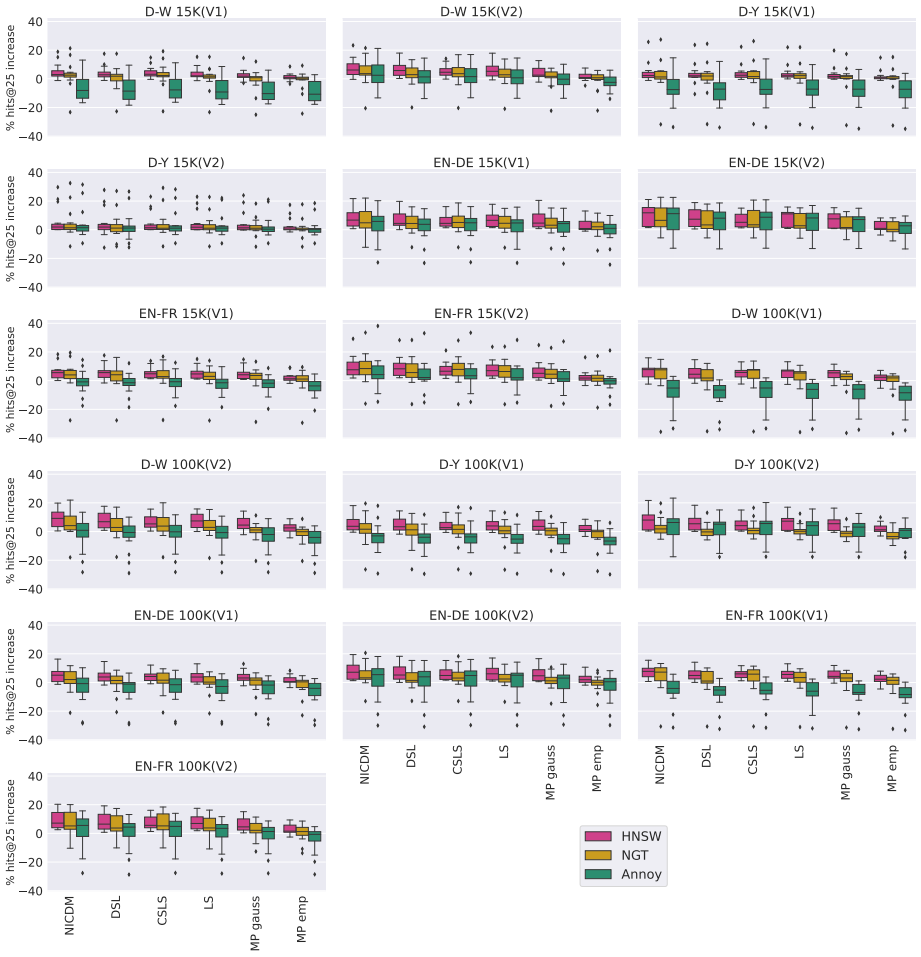

Figure 65: ANN improvement over baseline (exact NN without hubness reduction) for hits@25

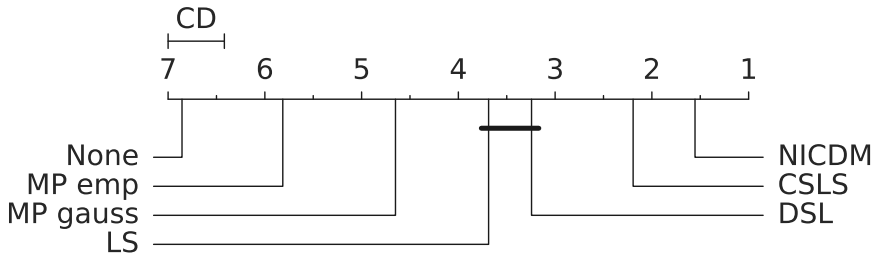

Figure 66: Critical distance diagram showing differences between hubness reduction techniques for exact NN with regards to hits@25

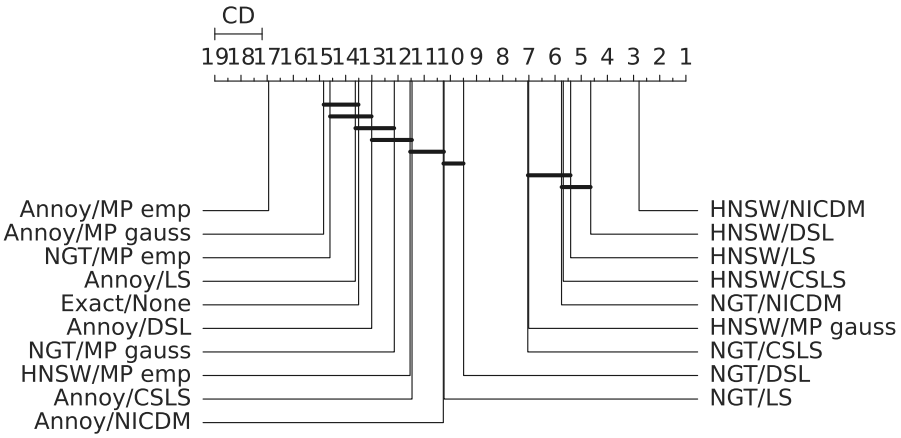

Figure 67: Critical distance diagram showing differences between hubness reduction techniques for ANN and baseline with regards to hits@25

5.2 Individual embedding approaches

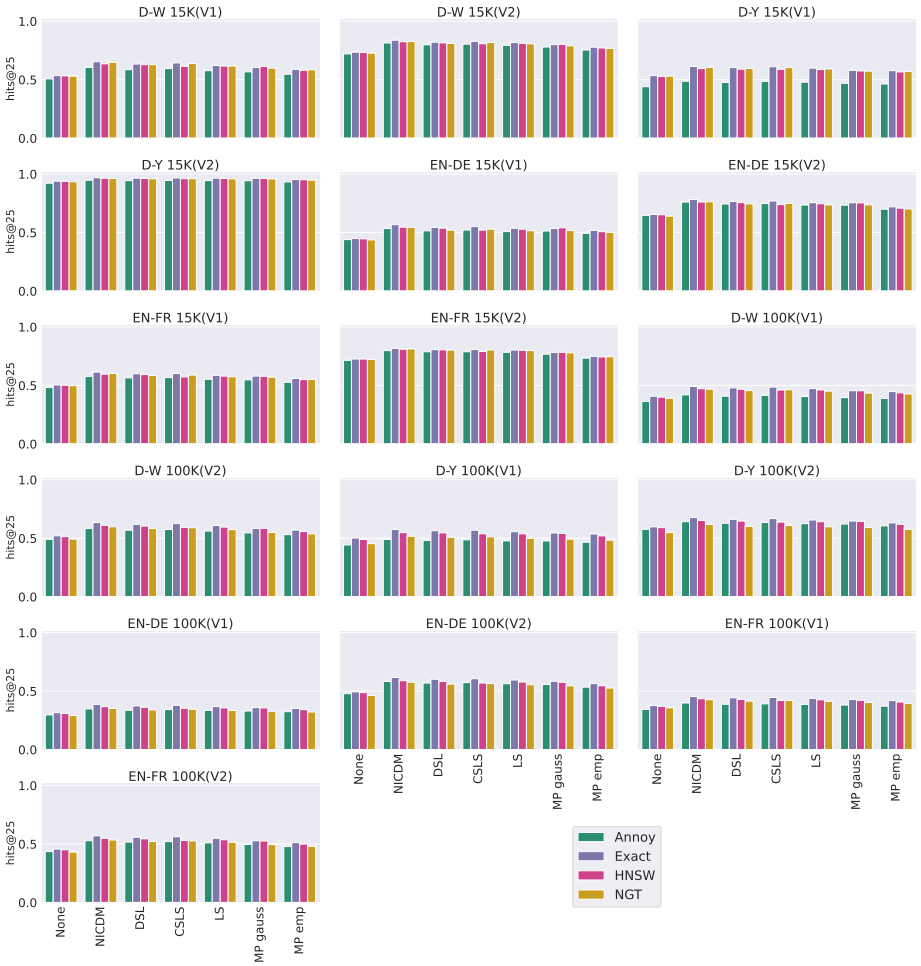

Figure 68: AttrE

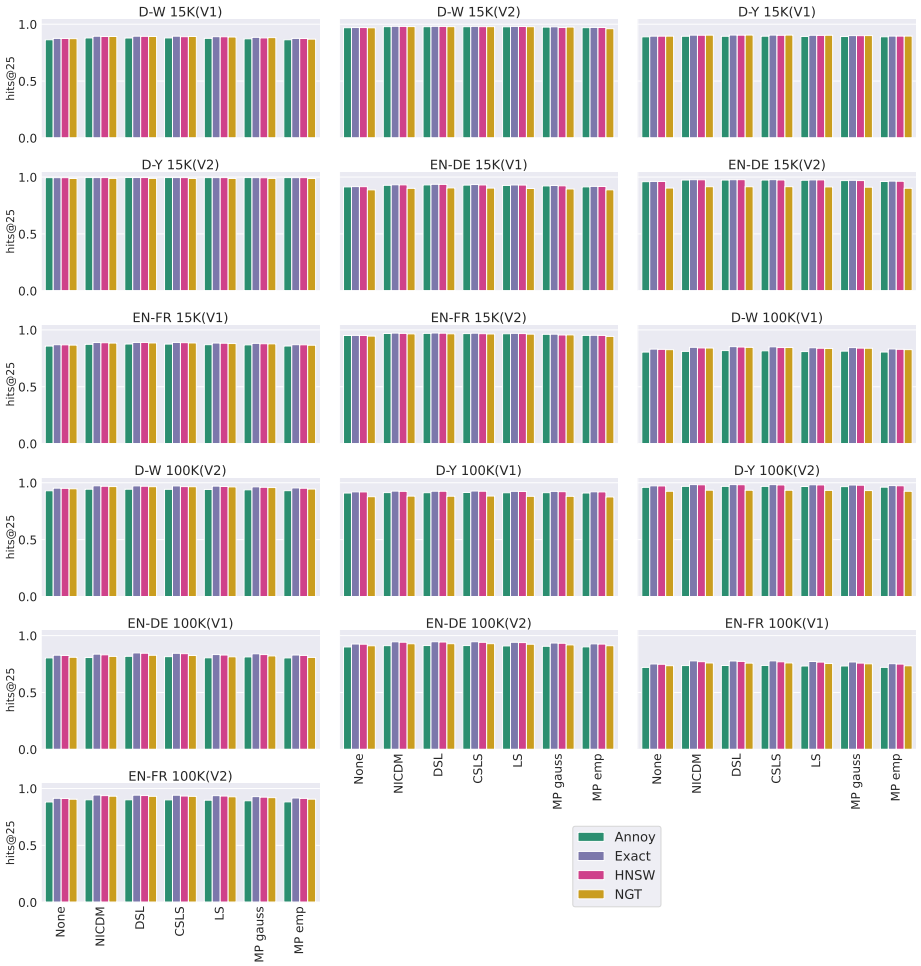

Figure 69: BootEA

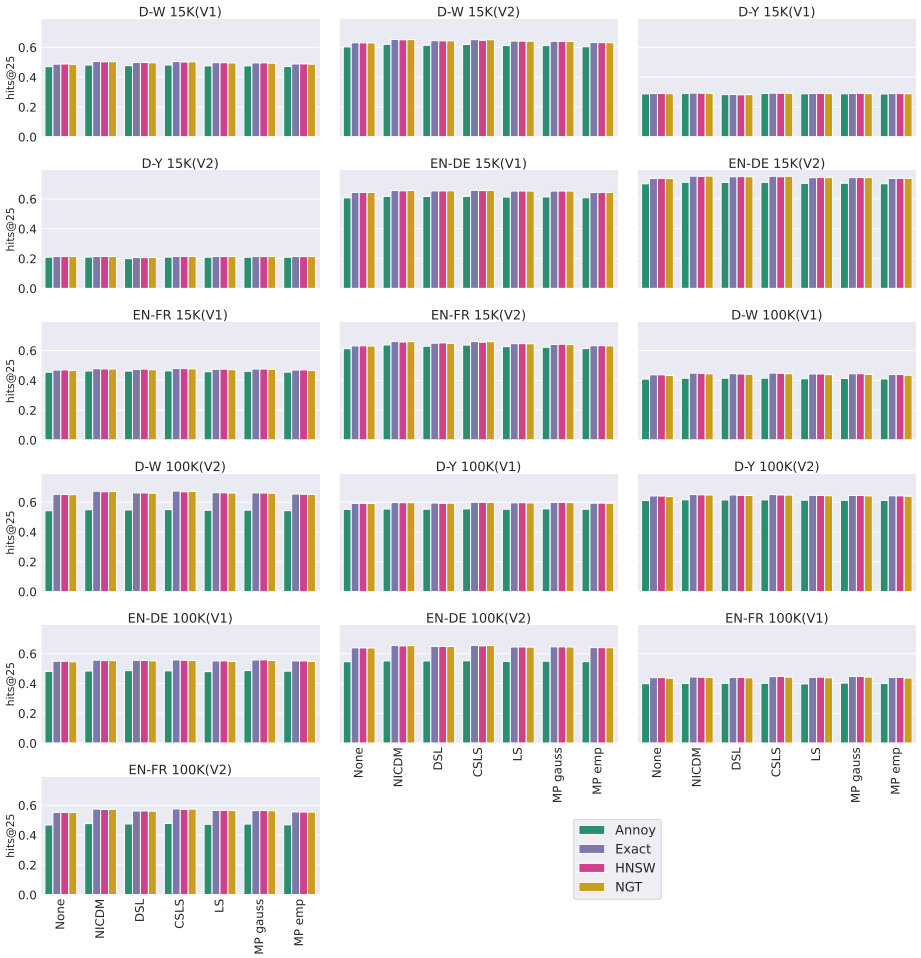

Figure 70: ConvE

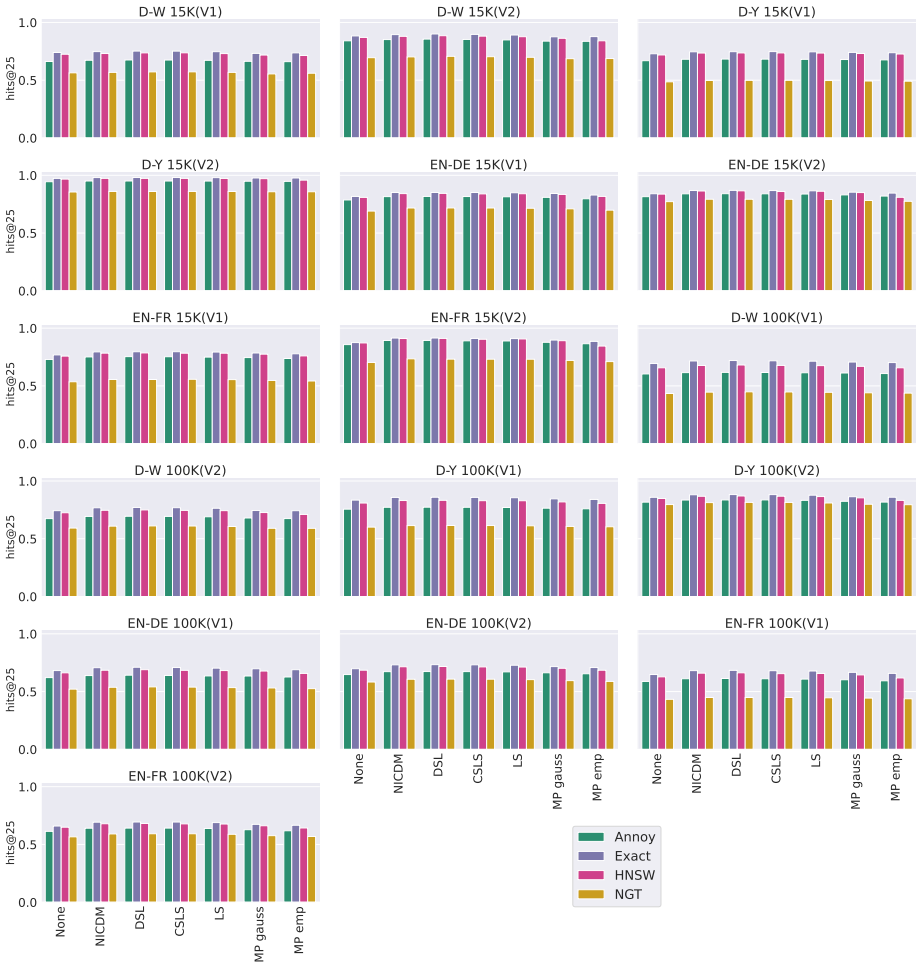

Figure 71: GCNAlign

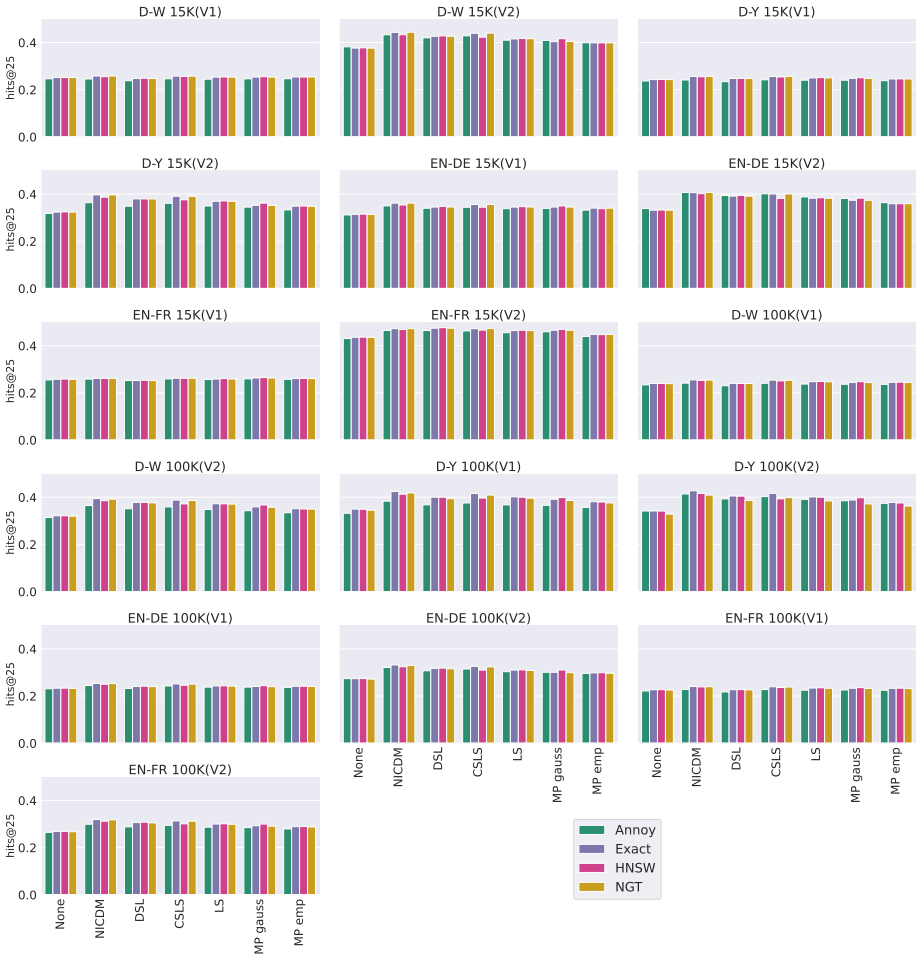

Figure 72: HolE

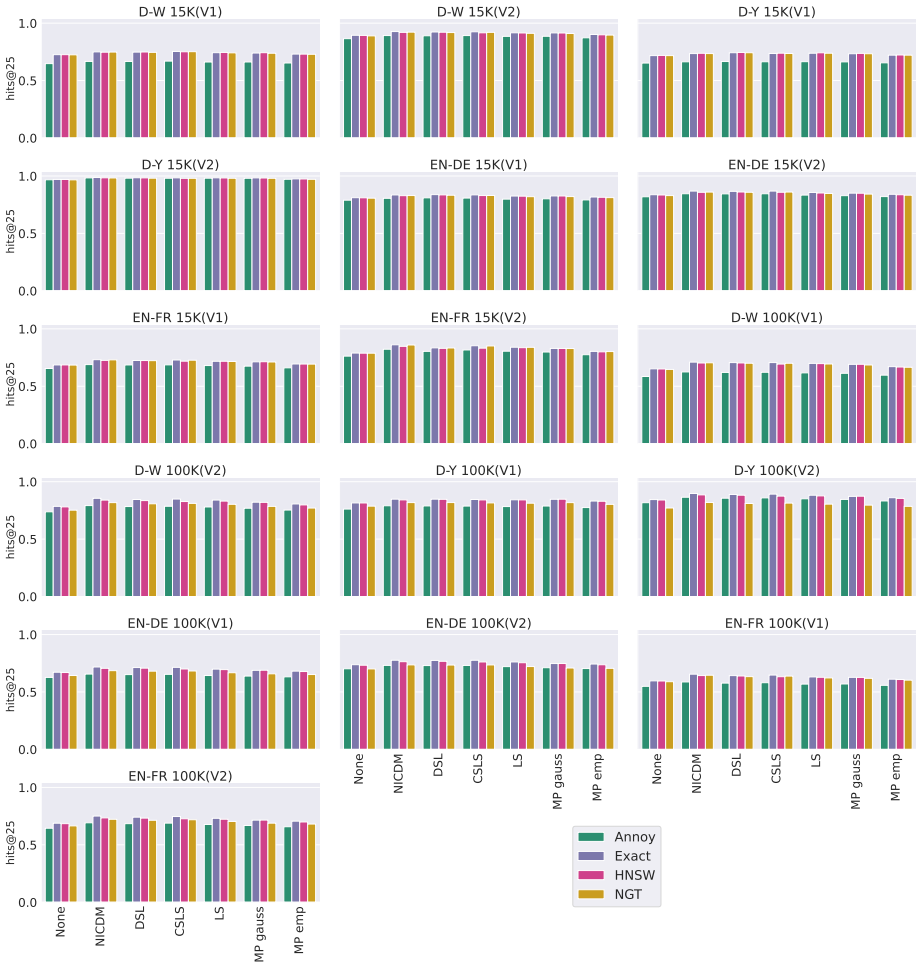

Figure 73: IMUSE

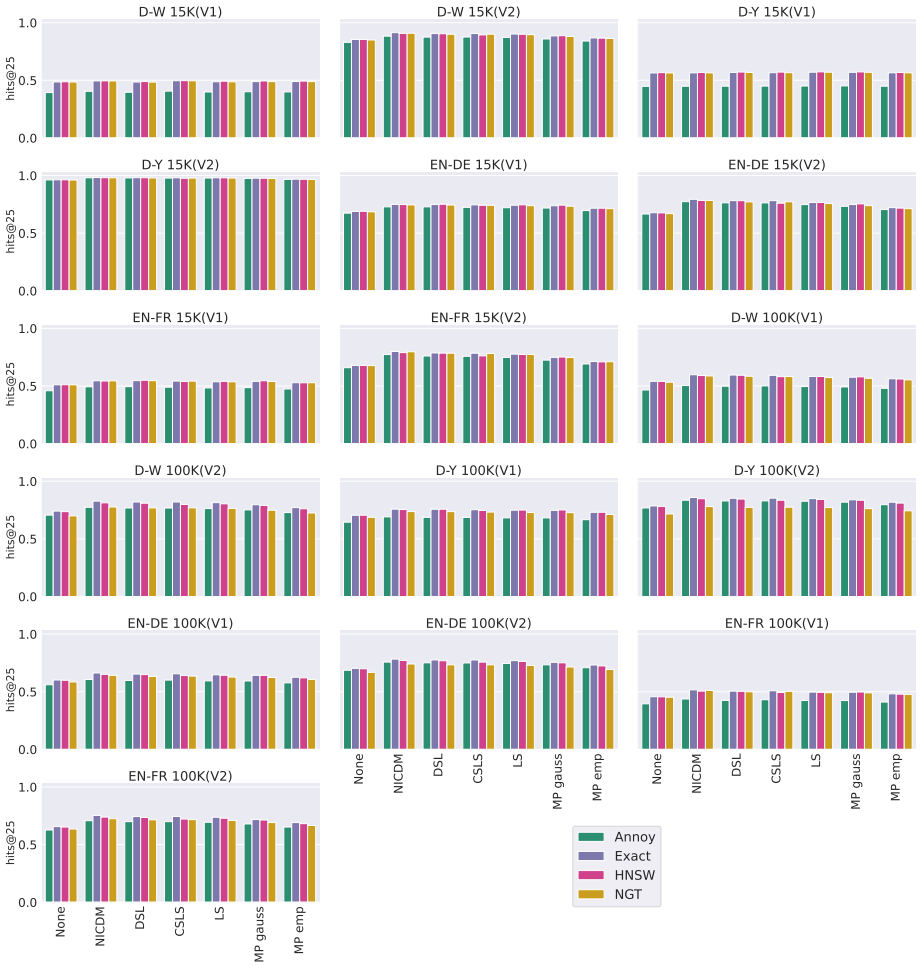

Figure 74: IPTransE

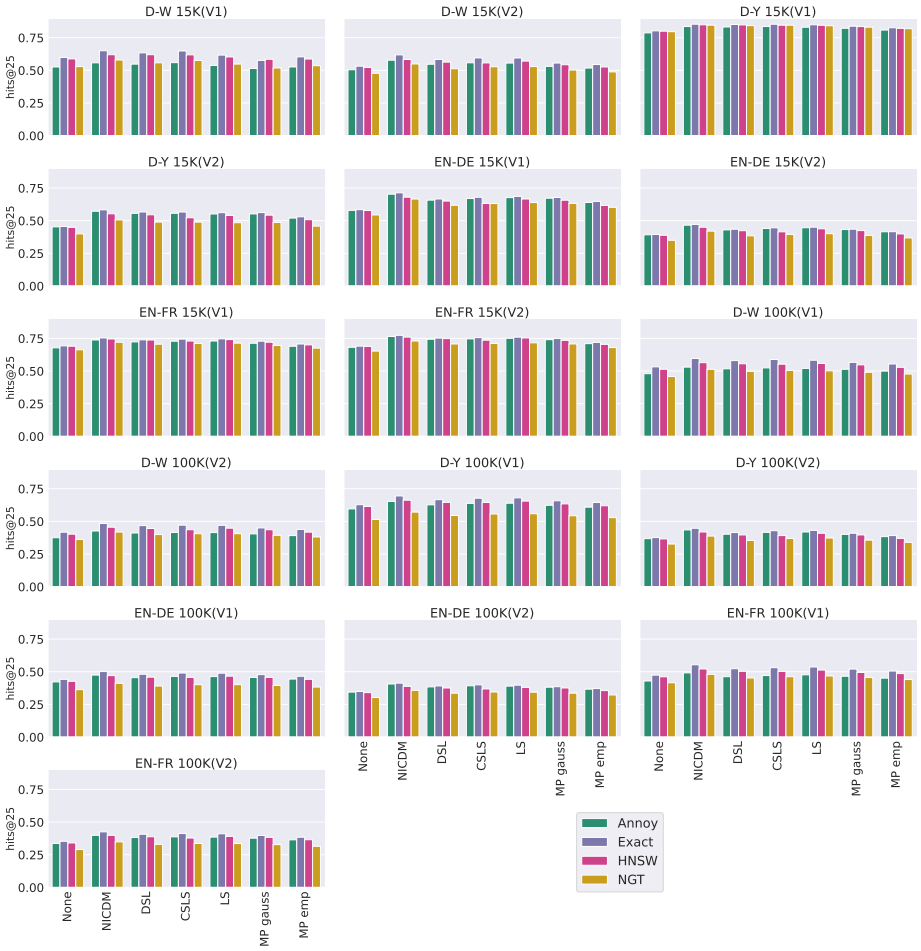

Figure 75: JAPE

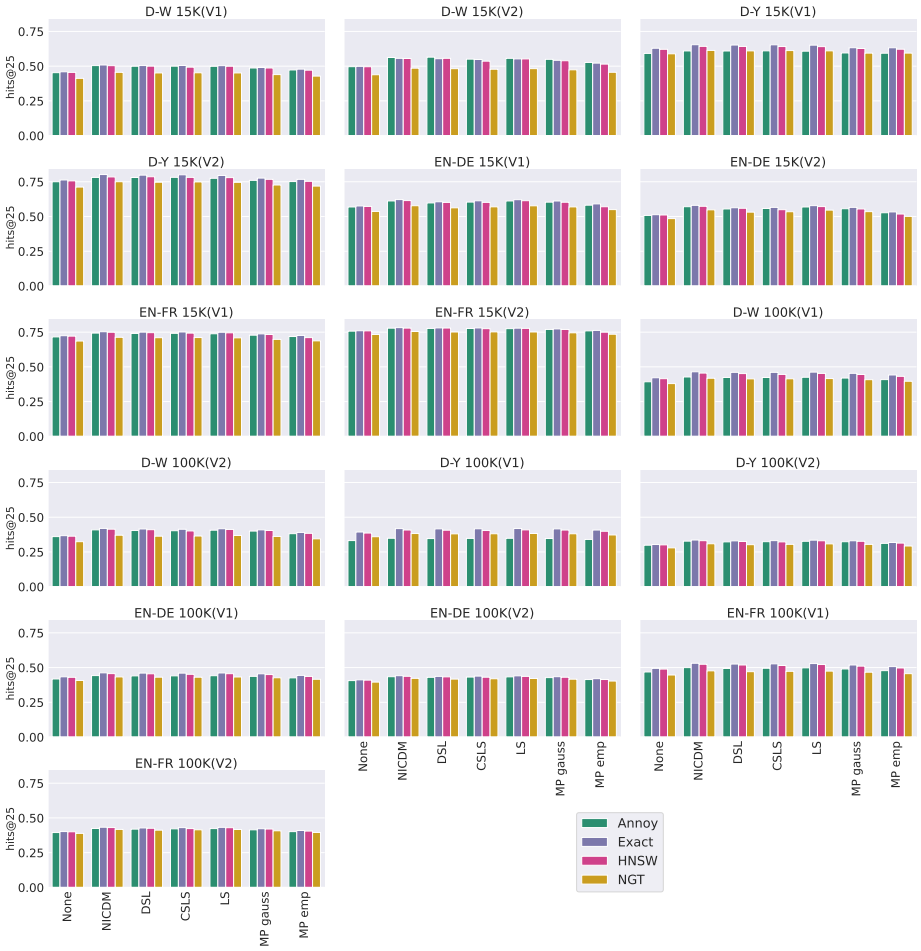

Figure 76: MultiKE

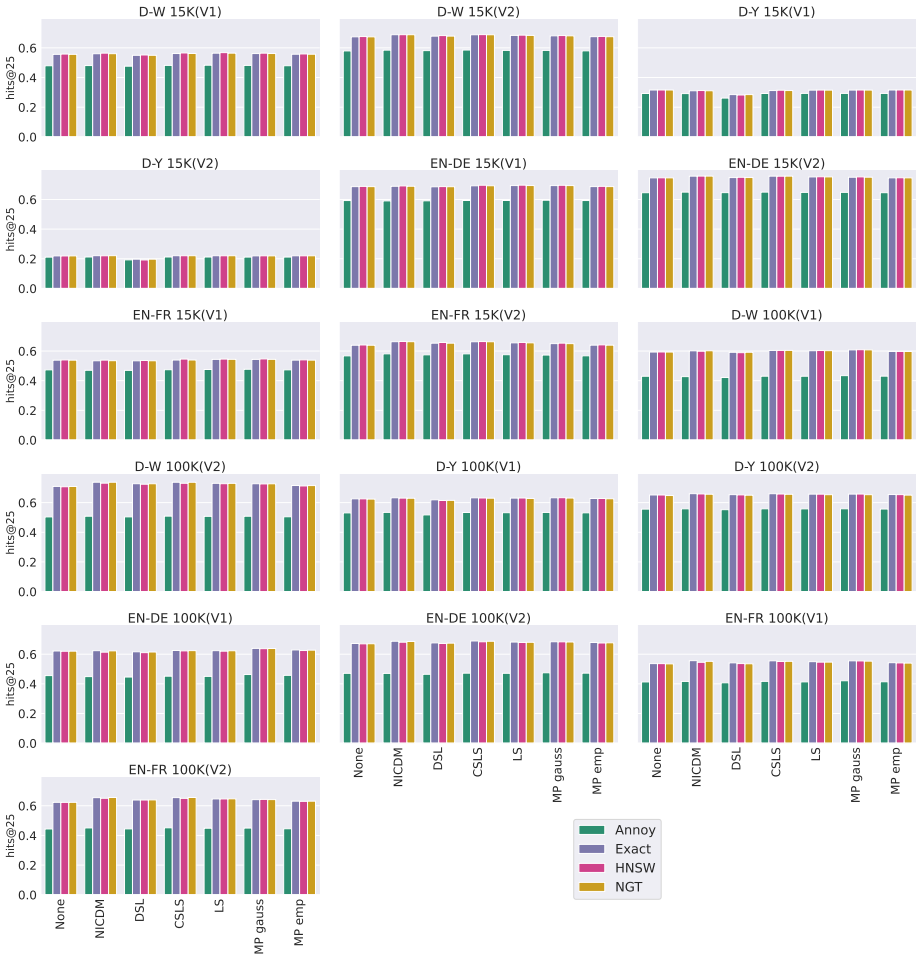

Figure 77: ProjE

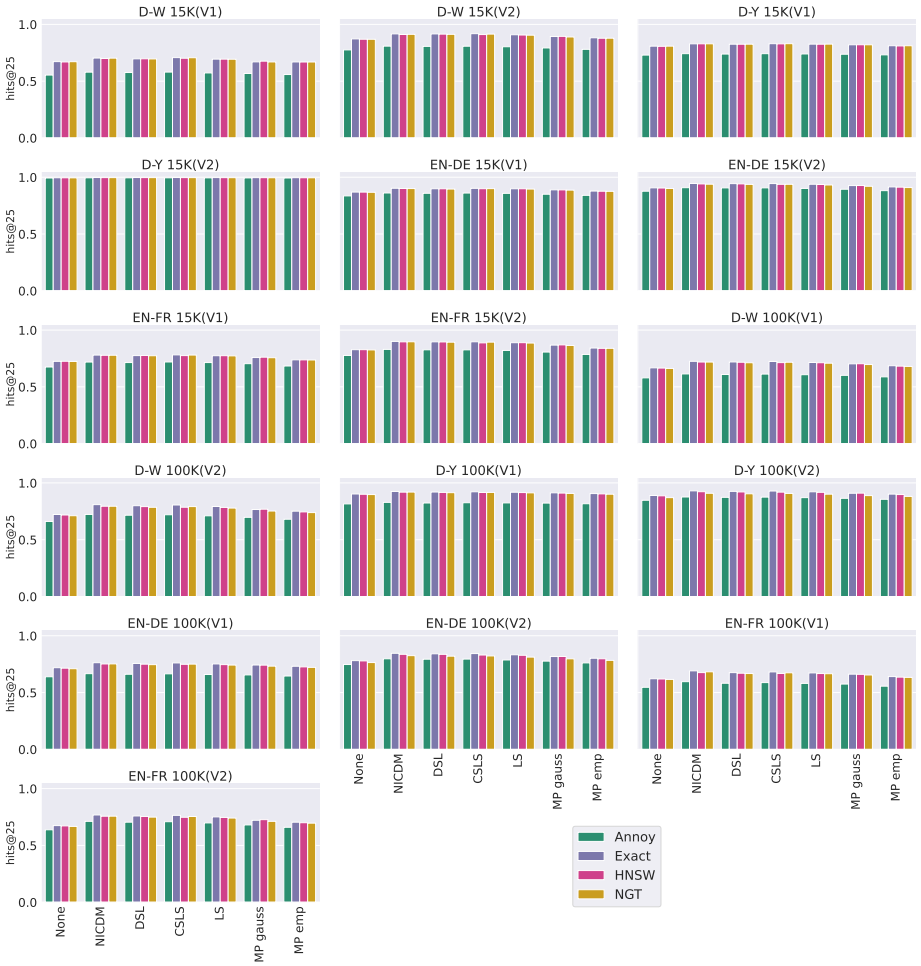

Figure 78: RotatE

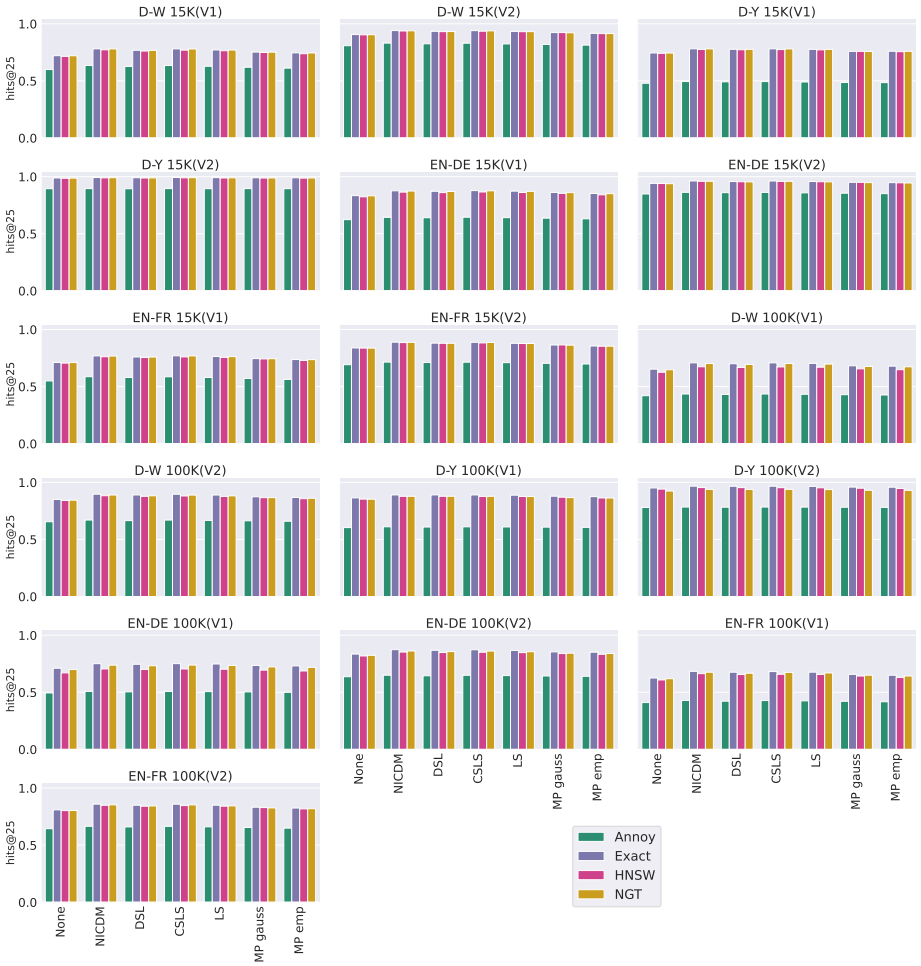

Figure 79: RSN4EA

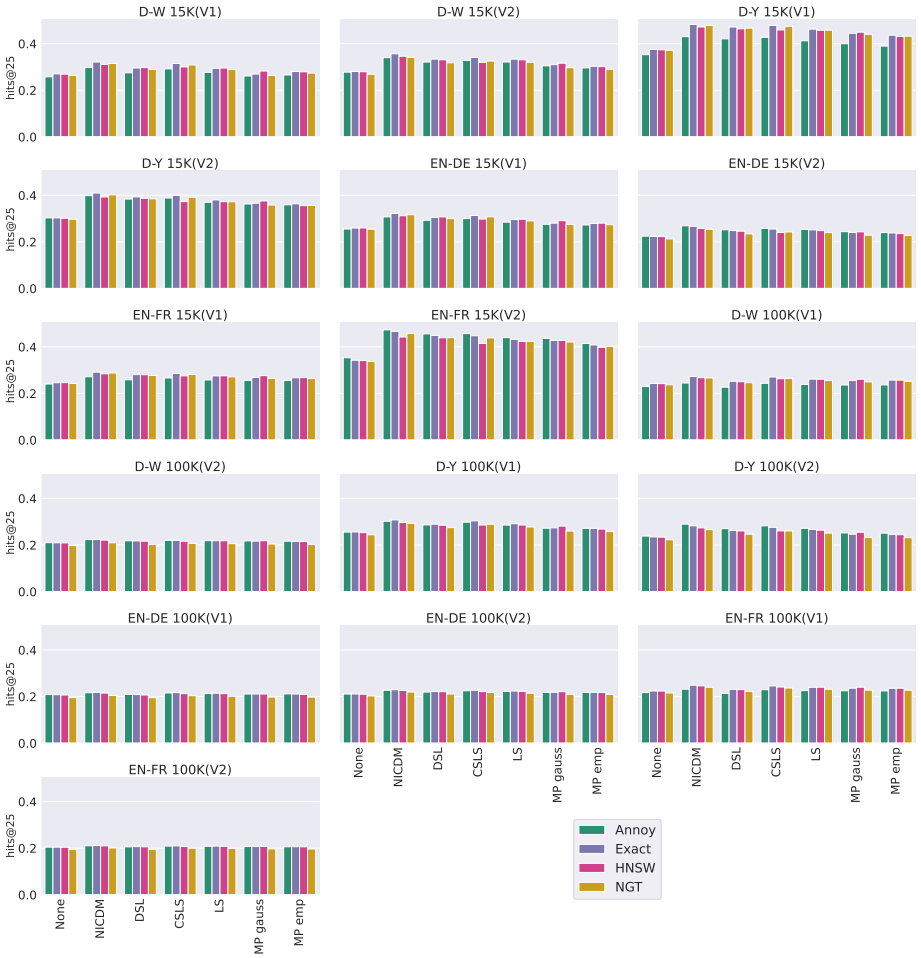

Figure 80: SimplE

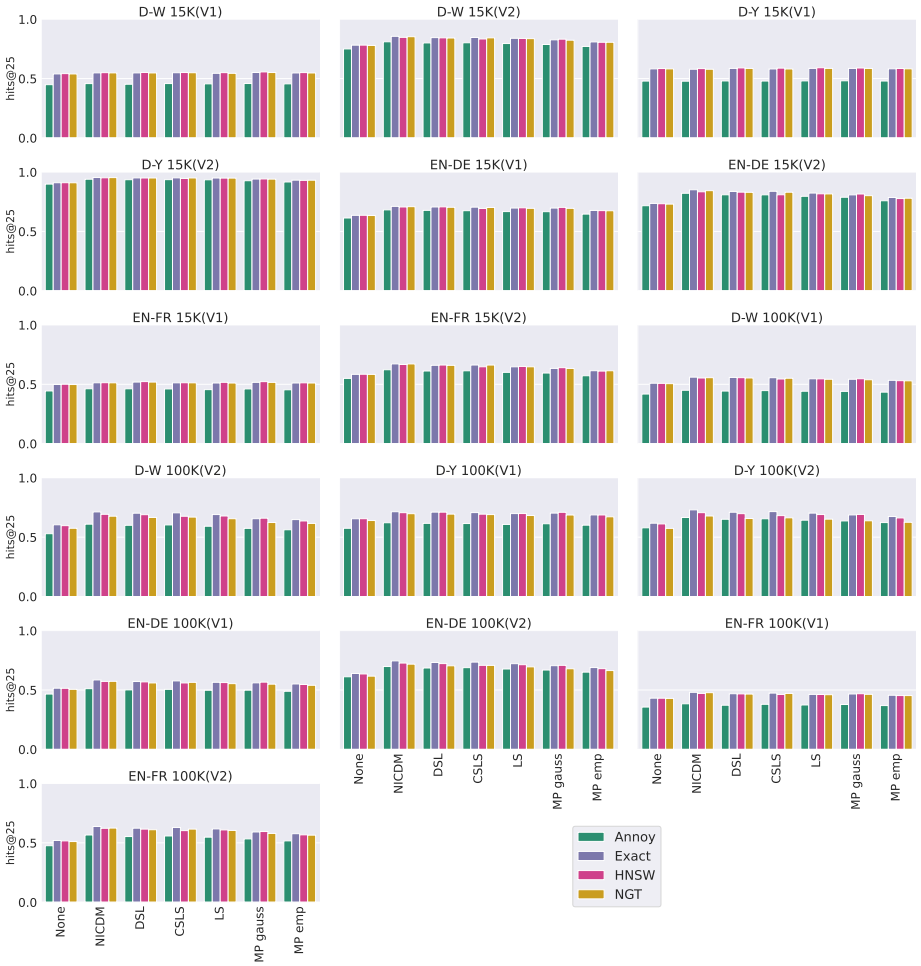

Figure 81: TransD

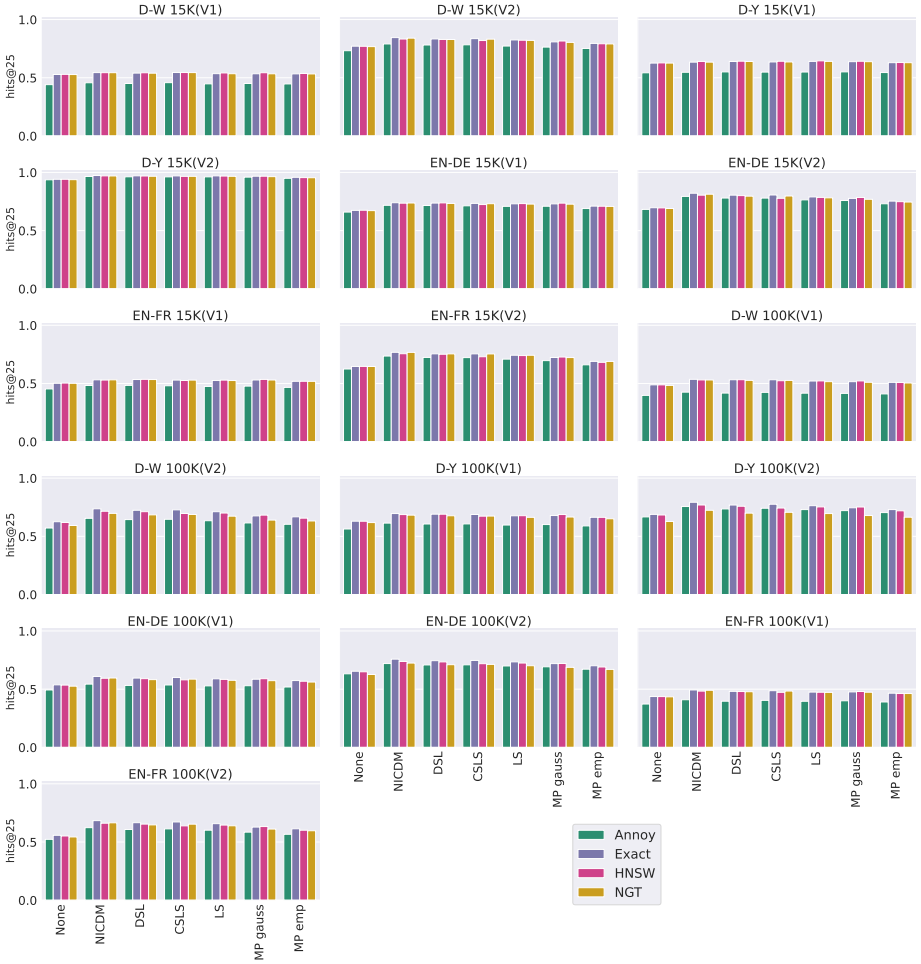

Figure 82: TransH

6 Results for hits@50

6.1 General

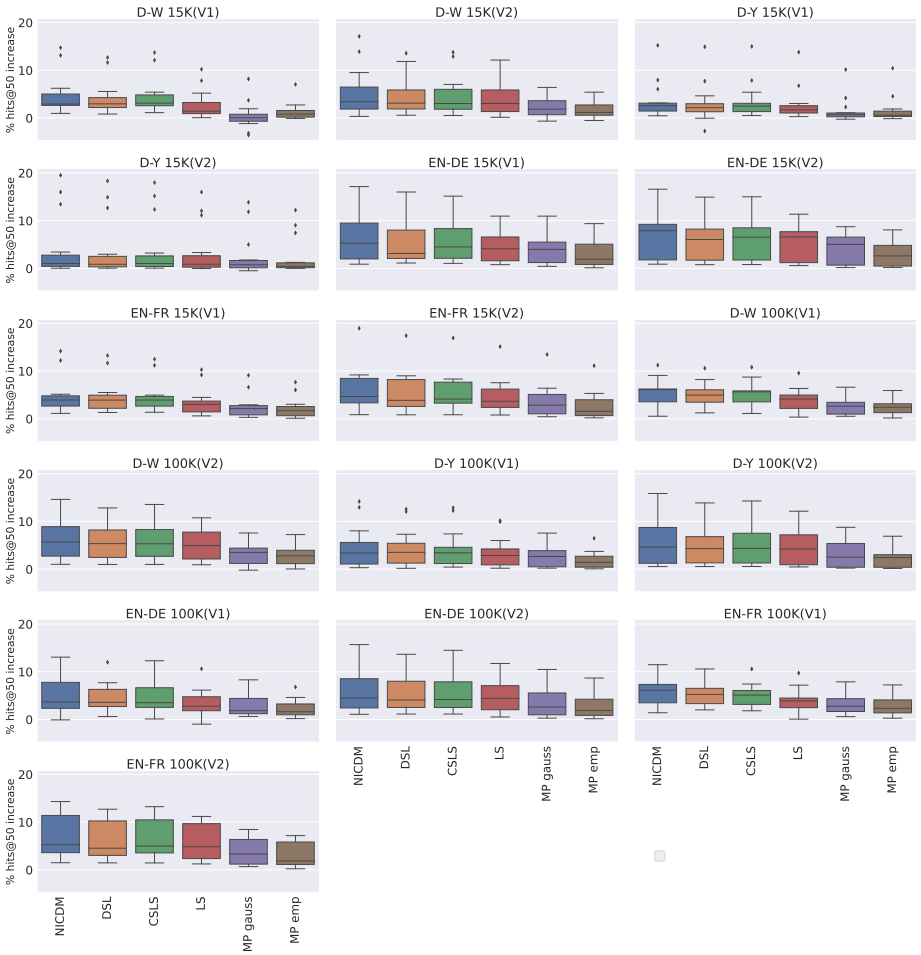

Figure 83: Exact NN improvement over baseline (exact NN without hubness reduction) for hits@50

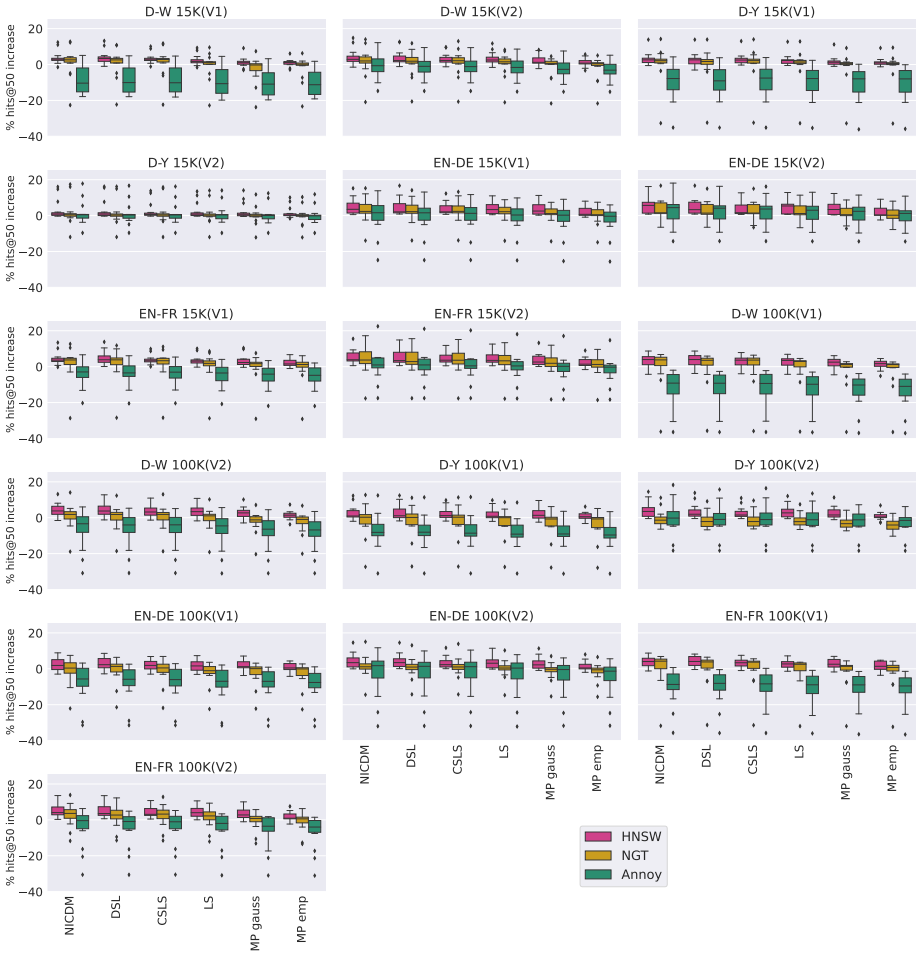

Figure 84: ANN improvement over baseline (exact NN without hubness reduction) for hits@50

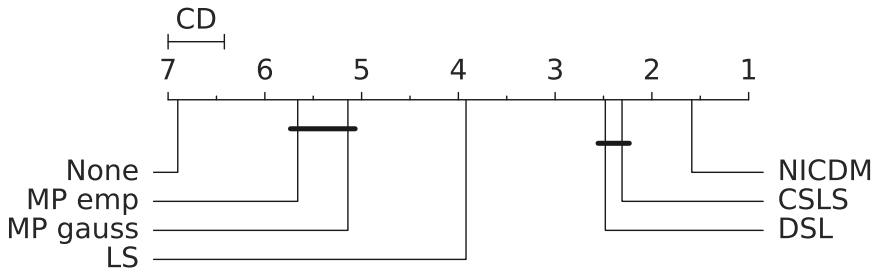

Figure 85: Critical distance diagram showing differences between hubness reduction techniques for exact NN with regards to hits@50

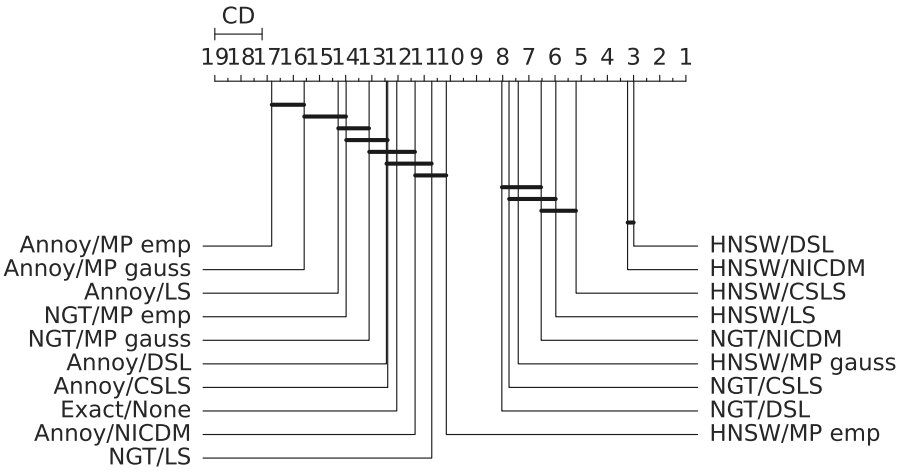

Figure 86: Critical distance diagram showing differences between hubness reduction techniques for ANN and baseline with regards to hits@50

6.2 Individual embedding approaches

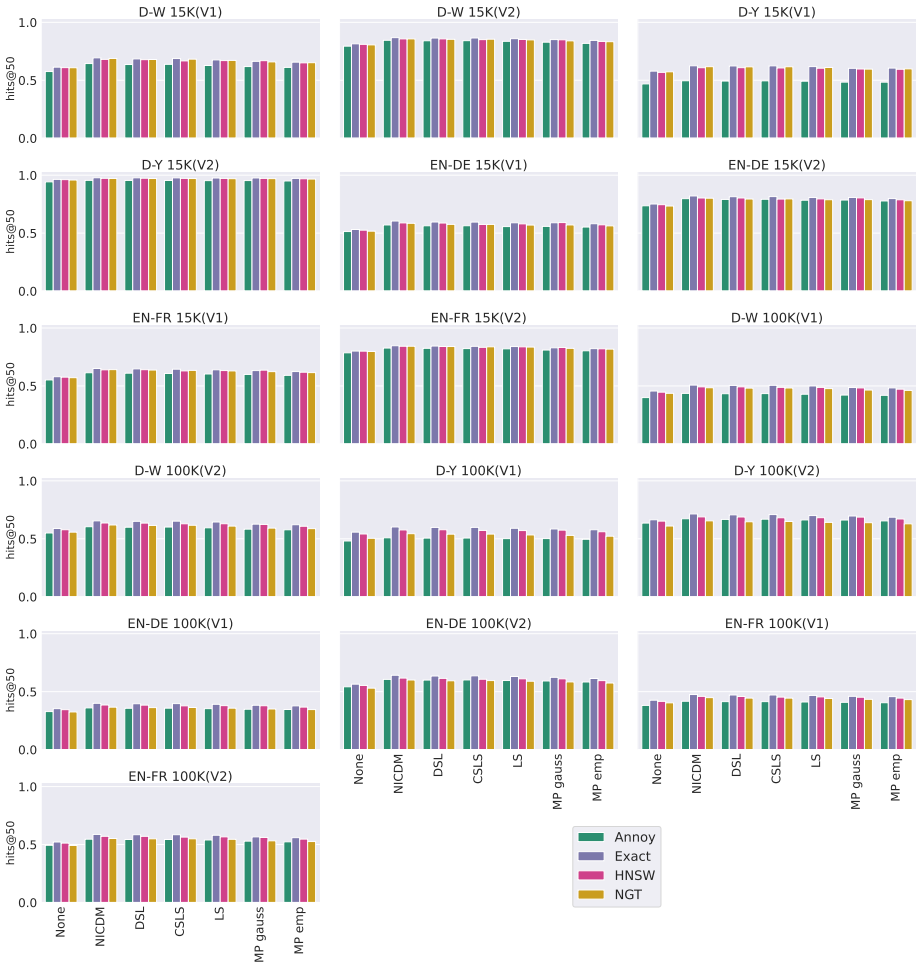

Figure 87: AttrE

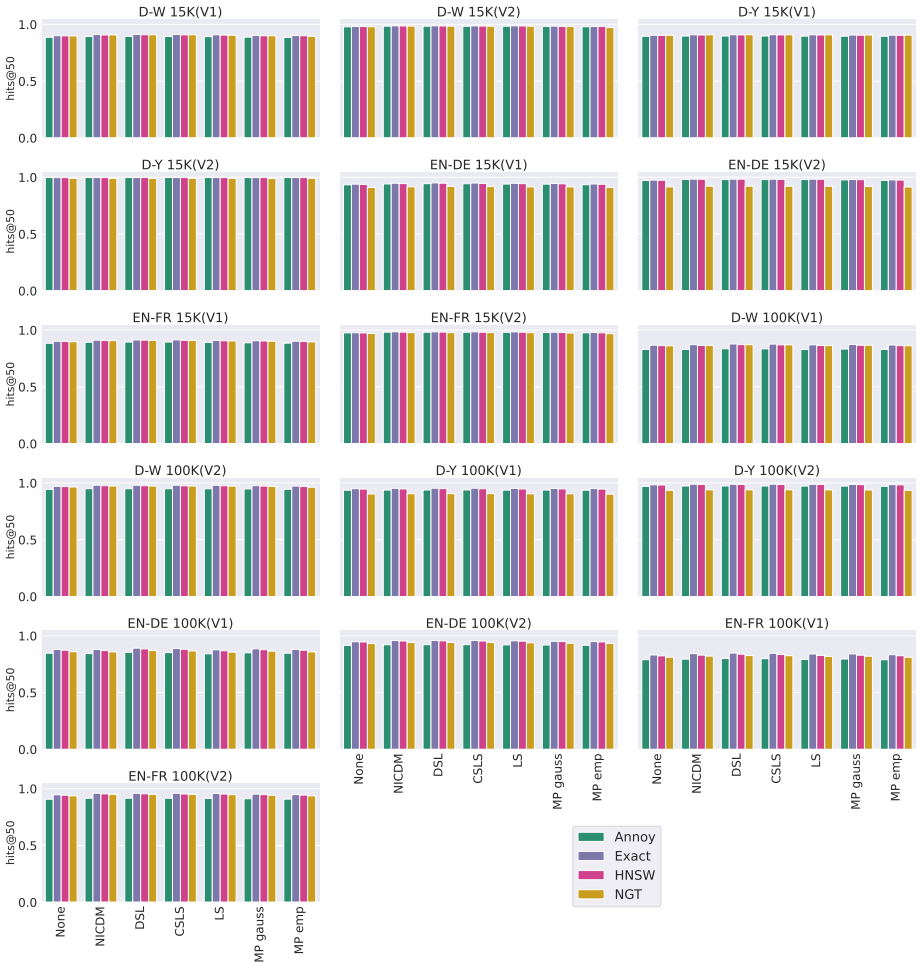

Figure 88: BootEA

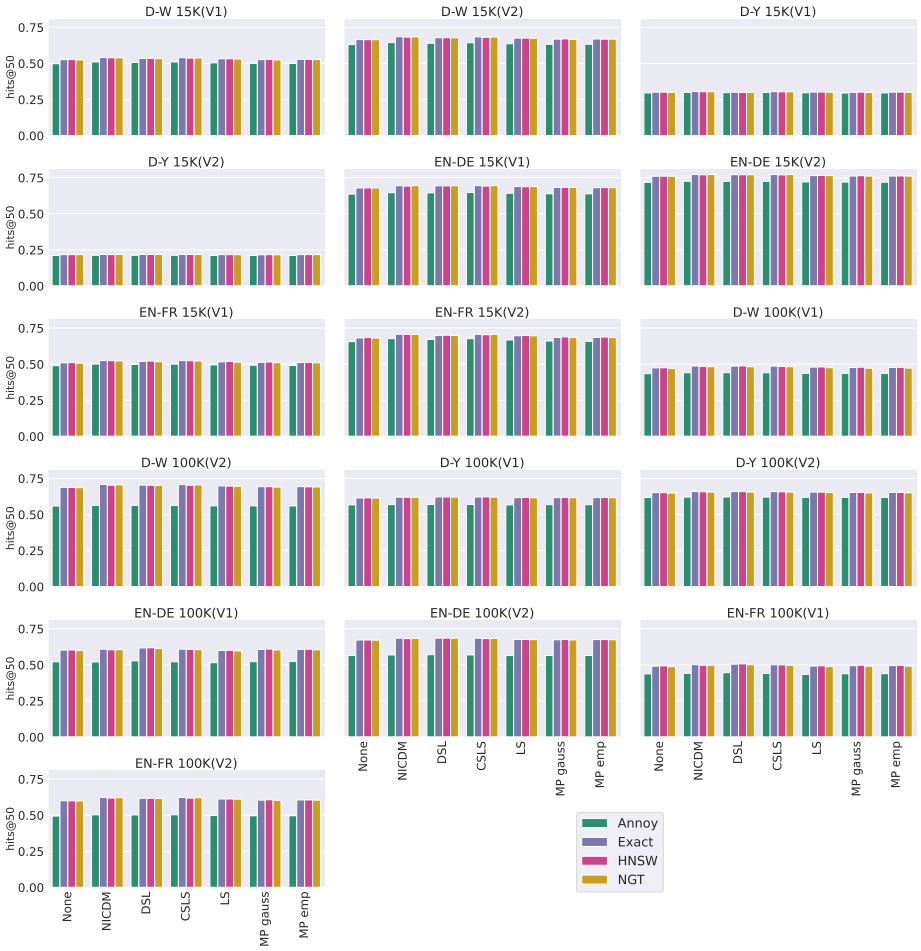

Figure 89: ConvE

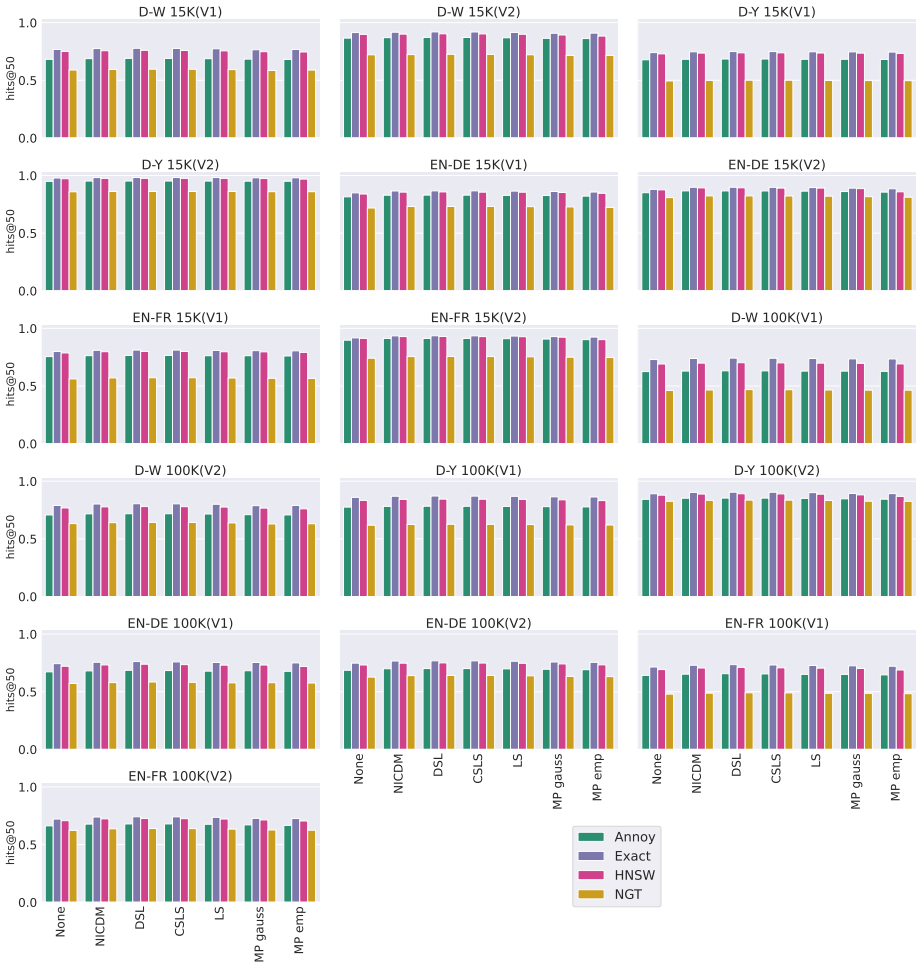

Figure 90: GCNAlign

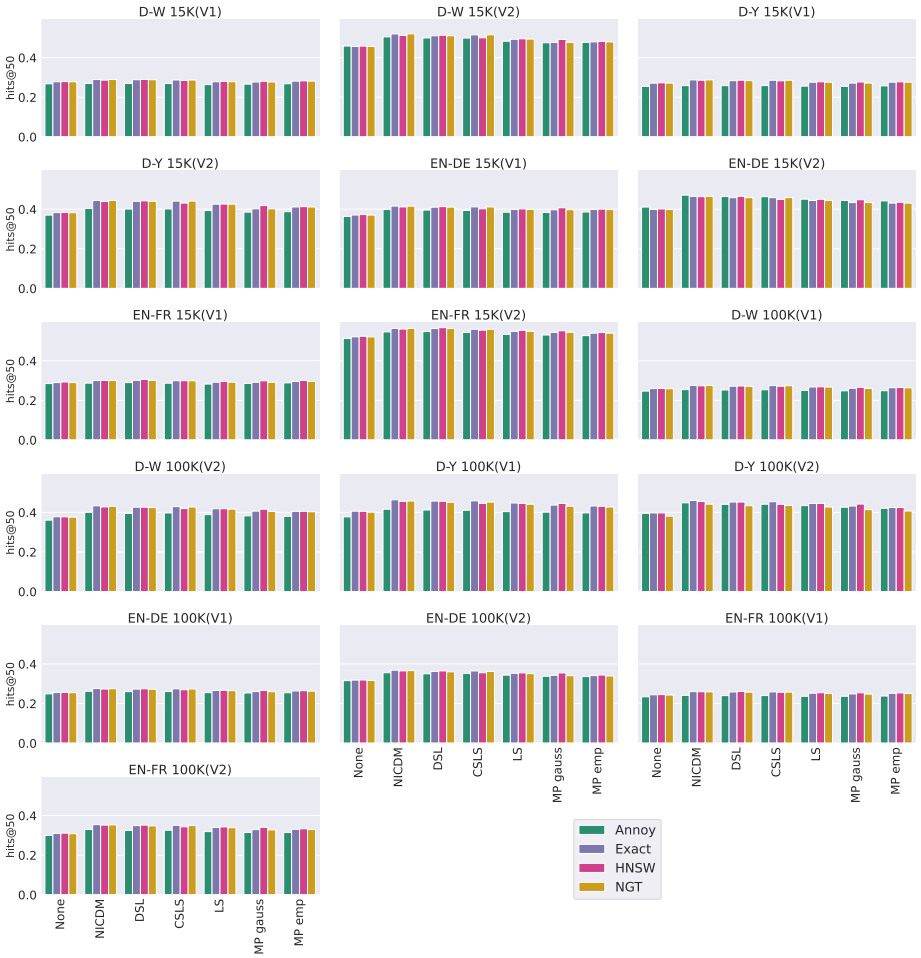

Figure 91: HolE

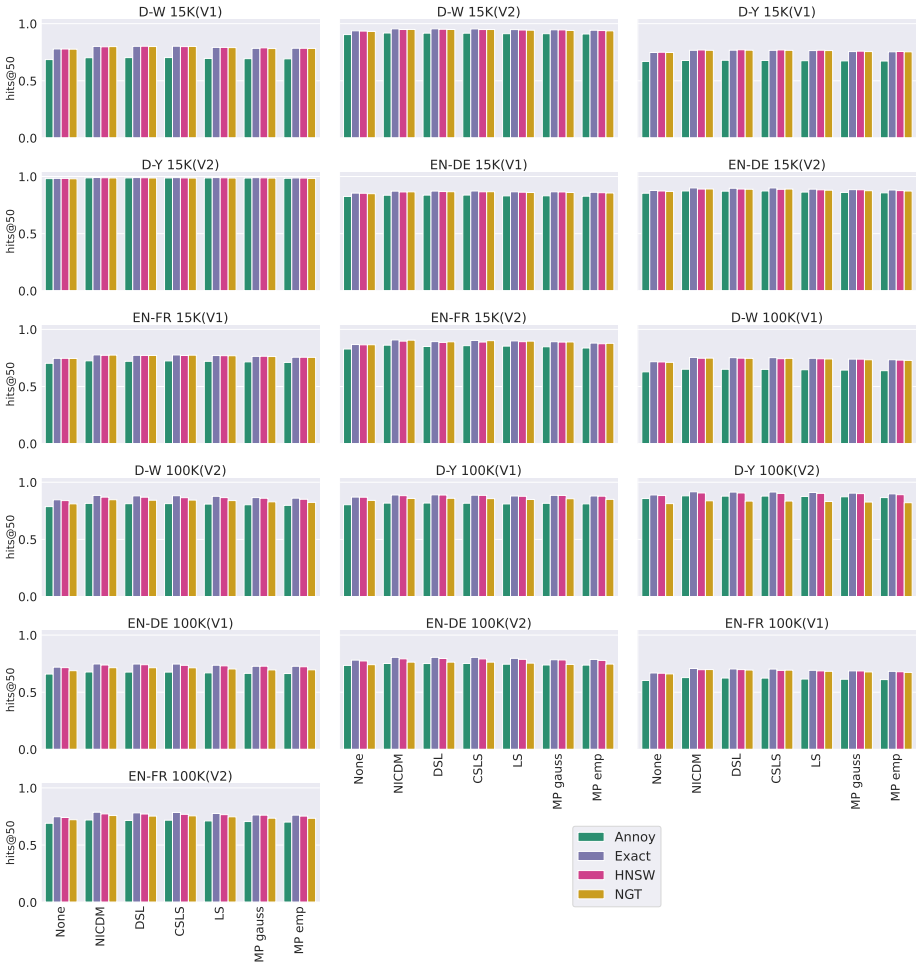

Figure 92: IMUSE

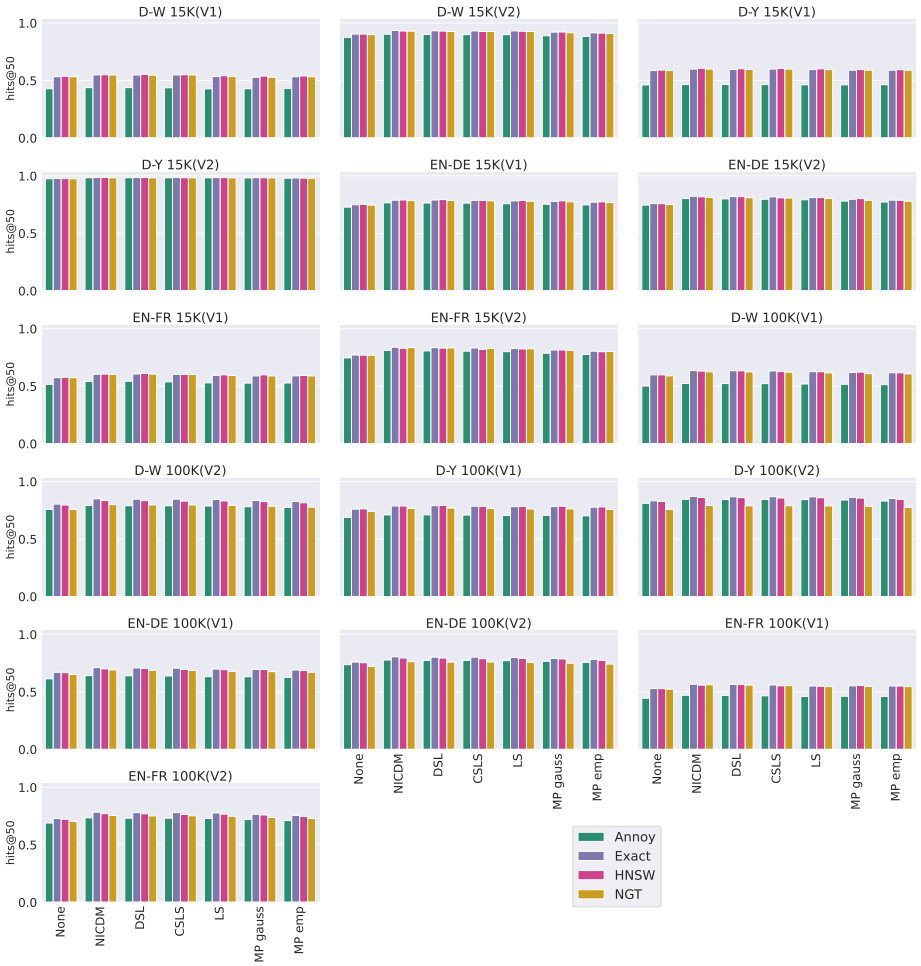

Figure 93: IPTransE

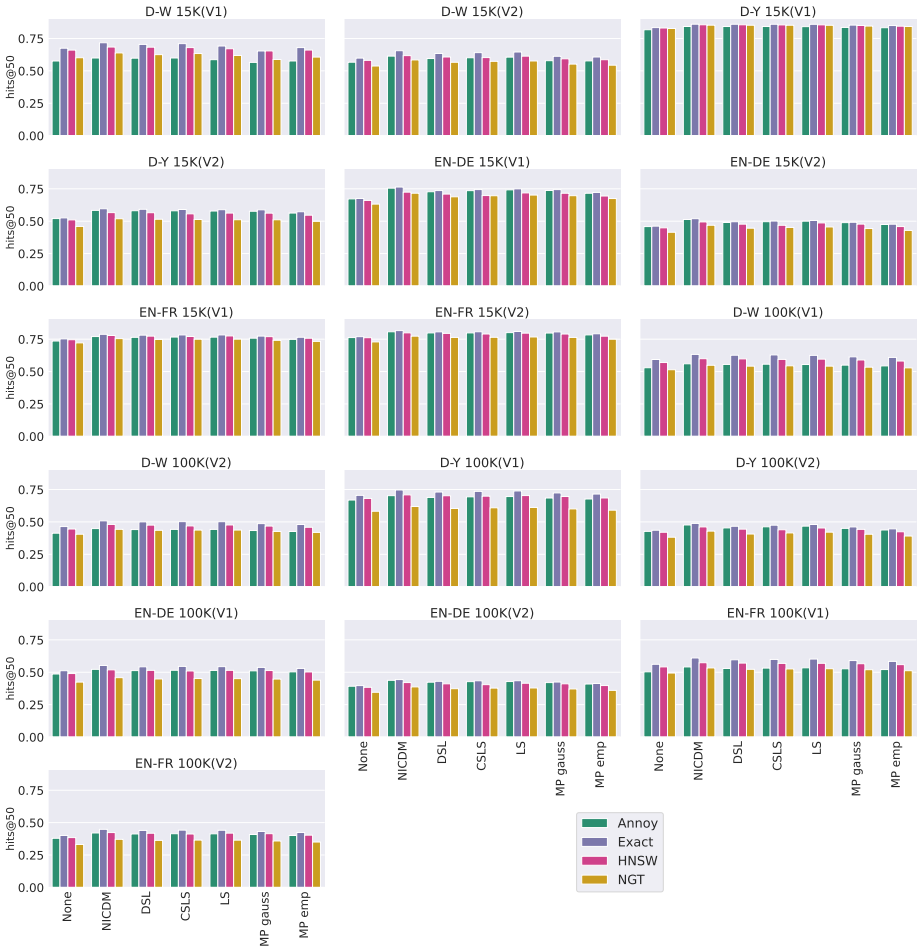

Figure 94: JAPE

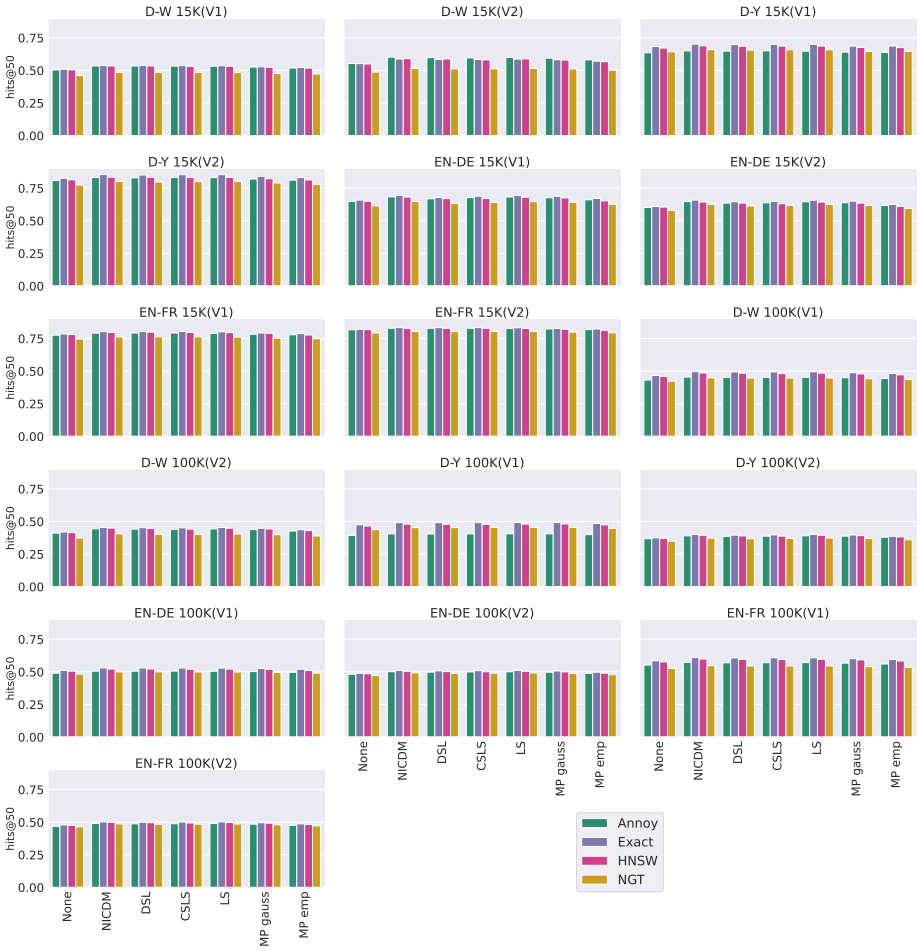

Figure 95: MultiKE

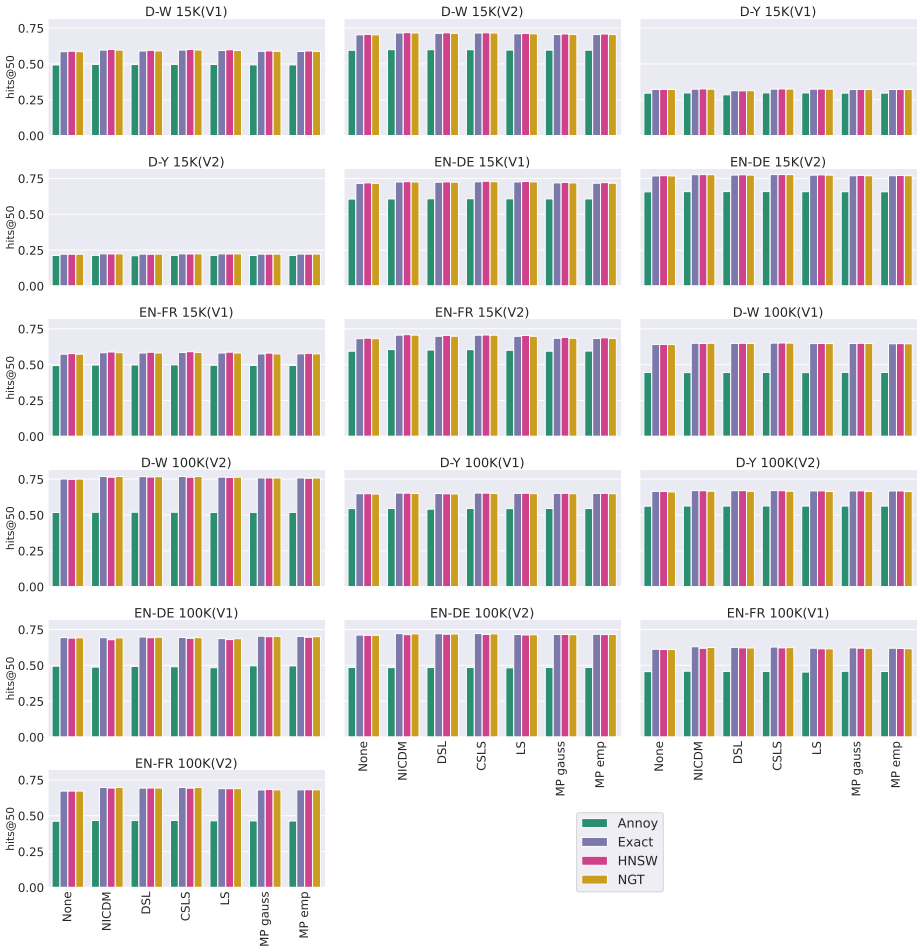

Figure 96: ProjE

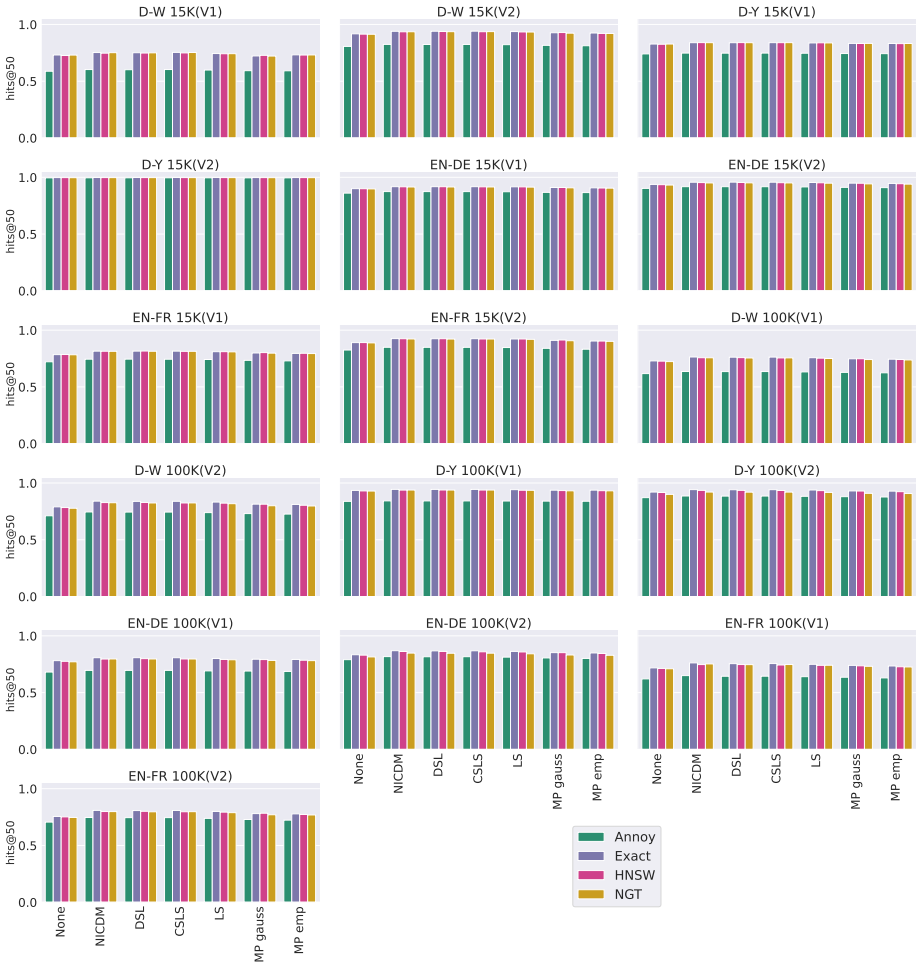

Figure 97: RotatE

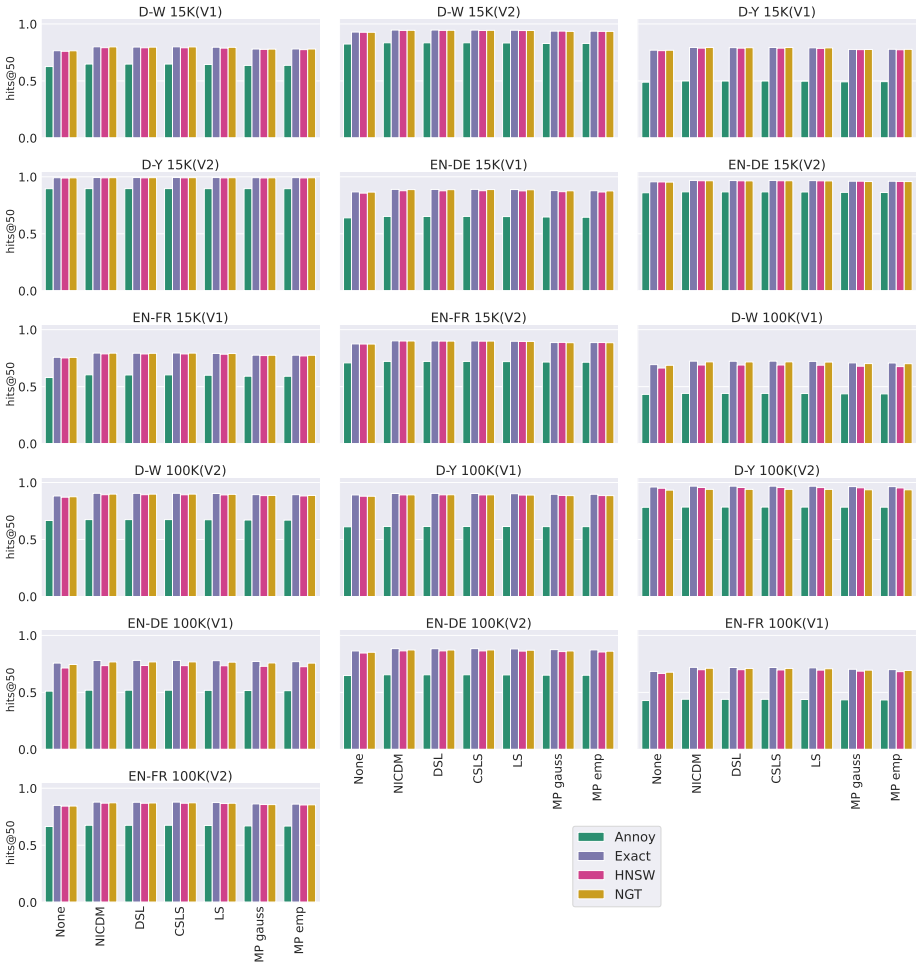

Figure 98: RSN4EA

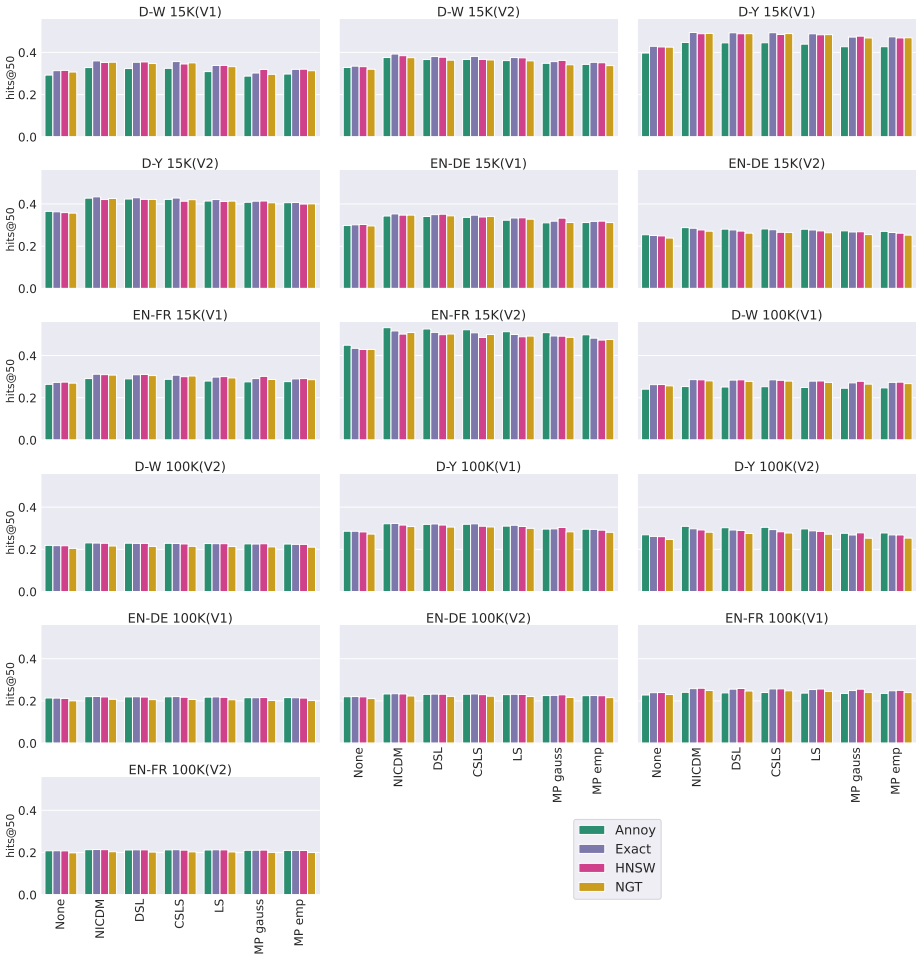

Figure 99: SimplE

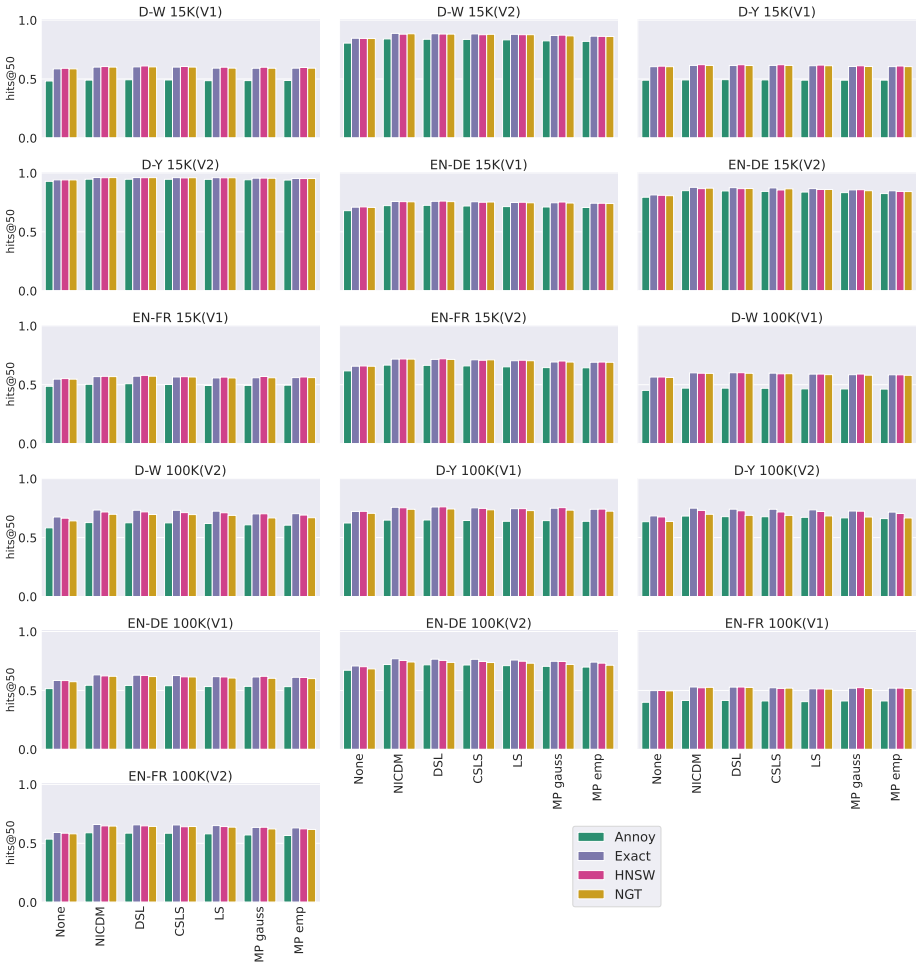

Figure 100: TransD

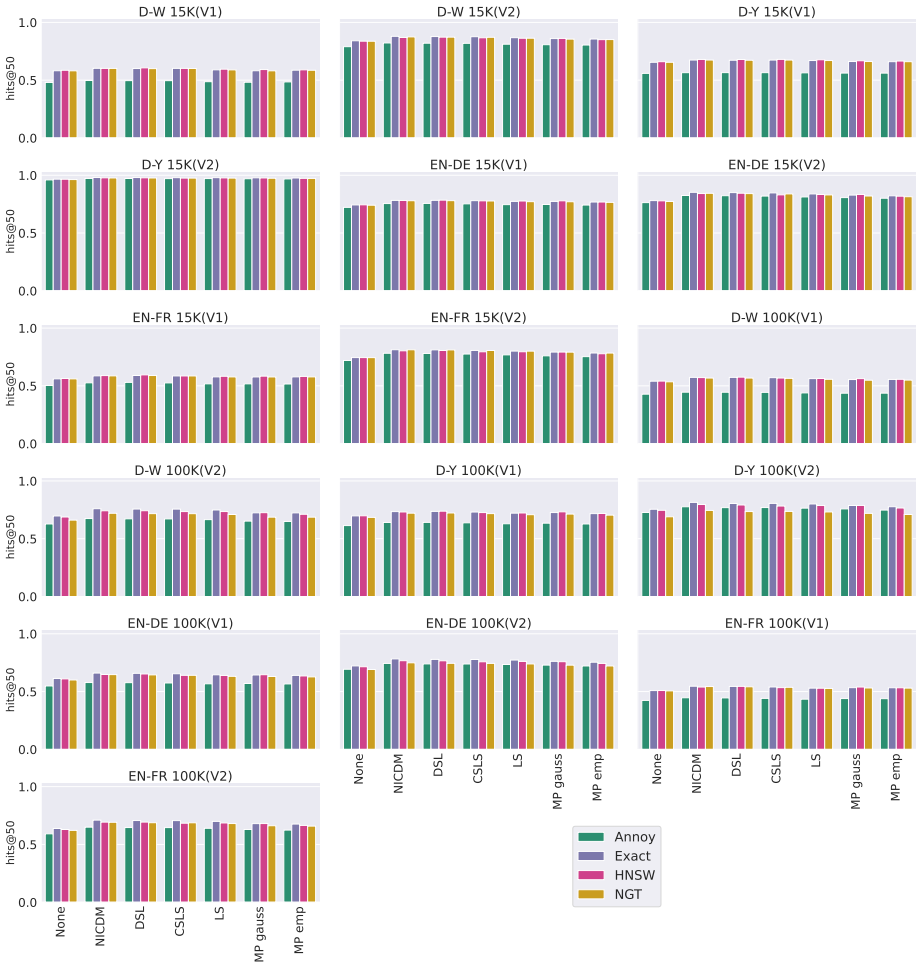

Figure 101: TransH