spaCy	Stanza
Nlp_de2, evaluation: nlp_de3 • **'ents_p': 0.6557663584072203, 'ents_r': 0.5094244133657562, 'ents_f': 0.5734054895204485,** • **'ents_per_type':** • **'MISC': {'p': 0.5710301085129146, 'r': 0.4597188470884986, 'f': 0.5093641894309914},** • **'ORG': {'p': 0.5495742092457421, 'r': 0.5101637492941841, 'f': 0.5291361639824304},** • **'PER': {'p': 0.6978459377195037, 'r': 0.4942581153351851, 'f': 0.5786676374226429},** • **'LOC': {'p': 0.7685173886516168, 'r': 0.6043855861043136, 'f': 0.6766404340468963}** • 889.40625s	Nlp_de, evaluation: nlp_de3 • **'ents_p': 0.5274787923013774, 'ents_r': 0.4555408944994781, 'ents_f': 0.4888776167982331,** • **'ents_per_type':** • **'ORG': {'p': 0.2810975609756098, 'r': 0.2962724935732648, 'f': 0.28848560700876097},** • **'PER': {'p': 0.6954373728567277, 'r': 0.36911923492210397, 'f': 0.48226521563885527},** • **'LOC': {'p': 0.7432432432432432, 'r': 0.5912953008496619, 'f': 0.6586190246257846},** • **'MISC': {'p': 0.19531462816671208, 'r': 0.4789579158316633, 'f': 0.2774767801857585}** • 24121.5625s
Nlp_multi, evaluation: nlp_de3 • **'ents_p': 0.5484837509466267, 'ents_r': 0.34712483199099786, 'ents_f': 0.42516861388855215,** • **'ents_per_type':** • **'LOC': {'p': 0.7469879518072289, 'r': 0.3608992372541148, 'f': 0.48666937339288135},** • **'ORG': {'p': 0.41804043545878694, 'r': 0.2181110029211295, 'f': 0.2866588461128292},** • **'PER': {'p': 0.6724708340588542, 'r': 0.31869068903864667, 'f': 0.43244252015527024},** • **'MISC': {'p': 0.33263678621689624, 'r': 0.41967071989669646, 'f': 0.37111930534078746}** • 541.4375s	Nlp_de, evaluation: nlp_multi • **'ents_p': 0.5833685099197974, 'ents_r': 0.5636981645139361, 'ents_f': 0.573364679850643,** • **'ents_per_type':** • **'ORG': {'p': 0.2880407124681934, 'r': 0.3419939577039275, 'f': 0.31270718232044203},** • **'PER': {'p': 0.7667120799273388, 'r': 0.6494960375471263, 'f': 0.7032532178114718},** • **'LOC': {'p': 0.5254826926421986, 'r': 0.5127871449586964, 'f': 0.5190573007645829},** • **'MISC': {'p': 0.29470470823059763, 'r': 0.4073352807530023, 'f': 0.3419851488521 0163}** • 24507.328125s
Nlp_en2, evaluation: nlp_en3 • **'ents_p': 0.9261398223734528, 'ents_r': 0.8877302173880519, 'ents_f': 0.9065283485860083,** • **'ents_per_type':**	Nlp_en, evaluation: nlp_en3 • **'ents_p': 0.8896865615615616, 'ents_r': 0.8289444922108392, 'ents_f': 0.8582421147129159,** • **'ents_per_type':**

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- 'PERSON': {'p': 0.9368882259718467, 'r': 0.9118954722801924, 'f': 0.9242229170498437},
- 'CARDINAL': {'p': 0.9207832665776591, 'r': 0.9025737967136833, 'f': 0.9115876046409164},
- 'MONEY': {'p': 0.9619619619619619, 'r': 0.9348249027237354, 'f': 0.9481993093241243},
- 'TIME': {'p': 0.8867212083071114, 'r': 0.8114801305432905, 'f': 0.8474338412189254},
- 'GPE': {'p': 0.9647013928639573, 'r': 0.9586651497914297, 'f': 0.9616737993342843},
- 'WORK_OF_ART': {'p': 0.6693121693121693, 'r': 0.5227272727272727, 'f': 0.5870069605568445},
- 'LAW': {'p': 0.5769230769230769, 'r': 0.5263157894736842, 'f': 0.5504587155963302},
- 'ORG': {'p': 0.7665355738291026, 'r': 0.6536585365853659, 'f': 0.7056113213756787},
- 'LANGUAGE': {'p': 0.959349593495935, 'r': 0.9053708439897699, 'f': 0.9315789473684211},
- 'NORP': {'p': 0.8994502977553825, 'r': 0.9248704663212435, 'f': 0.9119832791453785},
- 'ORDINAL': {'p': 0.9833333333333333, 'r': 0.9681200187529302, 'f': 0.9756673753838884},
- 'FAC': {'p': 0.7085714285714285, 'r': 0.7774294670846394, 'f': 0.741405082212257},
- 'QUANTITY': {'p': 0.9097978227060654, 'r': 0.9, 'f': 0.9048723897911833},
- 'PERCENT': {'p': 0.9352750809061489, 'r': 0.9897260273972602, 'f': 0.961730449251248},

- 'DATE': {'p': 0.8991212653778559, 'r': 0.876027397260274, 'f': 0.8874241110147442},
- 'PERSON': {'p': 0.9588131089459699, 'r': 0.7863005738359846, 'f': 0.8640300115736123},
- 'MONEY': {'p': 0.9379310344827586, 'r': 0.8568856885688569, 'f': 0.8955785512699906},
- 'GPE': {'p': 0.9646411982178406, 'r': 0.9495194550713819, 'f': 0.9570205962569359},
- 'TIME': {'p': 0.8622339153312605, 'r': 0.7650679117147708, 'f': 0.8107500281119983},
- 'WORK_OF_ART': {'p': 0.3010471204188482, 'r': 0.21821631878557876, 'f': 0.25302530253025307},
- 'LAW': {'p': 0.5901639344262295, 'r': 0.36363636363636365, 'f': 0.45},
- 'ORG': {'p': 0.5108883511925337, 'r': 0.6786042240587695, 'f': 0.5829225004929994},
- 'PRODUCT': {'p': 0.2558139534883721, 'r': 0.1724137931034483, 'f': 0.2059925093632959},
- 'CARDINAL': {'p': 0.8952491646084556, 'r': 0.8119646857293451, 'f': 0.851575456053068},
- 'LANGUAGE': {'p': 0.9794174757281553, 'r': 0.7435141509433962, 'f': 0.8453159041394336},
- 'NORP': {'p': 0.7782956058588548, 'r': 0.8901015228426395, 'f': 0.8304522851053753},
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- **'LOC': {'p': 0.920120572720422, 'r': 0.8622881355932204, 'f': 0.8902661319722932},**
- **'EVENT': {'p': 0.8645533141210374, 'r': 0.7957559681697612, 'f': 0.8287292817679559},**
- **'PRODUCT': {'p': 0.26704545454545453, 'r': 0.3455882352941764, 'f': 0.3012820512820513}**
- 740.21875s

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- **'FAC': {'p': 0.7319034852546917, 'r': 0.48576512455516013, 'f': 0.5839572192513368},**
- **'QUANTITY': {'p': 0.8652373660030628, 'r': 0.786908077994429, 'f': 0.8242159008023341},**
- **'PERCENT': {'p': 0.8938906752411575, 'r': 0.9174917491749175, 'f': 0.9055374592833876},**
- **'LOC': {'p': 0.8869760479041916, 'r': 0.8183701657458563, 'f': 0.8512931034482758},**
- **'EVENT': {'p': 0.7955801104972375, 'r': 0.6180257510729614, 'f': 0.6956521739130435}**
- 23592.46875s

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- **'ents_per_type':**
- **'DATE': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'PERSON': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'PER': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'LOC': {'p': 0.48740225890529976, 'r': 0.04156787196206283, 'f': 0.07660271727998907},**
- **'MISC': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'GPE': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'WORK_OF_ART': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'LAW': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'LANGUAGE': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'NORP': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'ORG': {'p': 0.1657142857142857, 'r': 0.20525783619817997, 'f': 0.18337850045167117},**
- **'ORDINAL': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'TIME': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'FAC': {'p': 0.0, 'r': 0.0, 'f': 0.0},**

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- **'ents_per_type':**
- **'PER': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'PERSON': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'DATE': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'LOC': {'p': 0.046473906911142455, 'r': 0.4551104972375691, 'f': 0.0843358075249552},**
- **'MONEY': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'GPE': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'TIME': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'ORG': {'p': 0.3202779532533165, 'r': 0.23256880733944954, 'f': 0.2694658517140579},**
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Nlp_nl2, evaluation: nlp_nl3 'ents_p': 0.8606562201999035, 'ents_r': 0.7921140739617081, 'ents_f': 0.8249638891396587, 'ents_per_type': 'GPE': {'p': 0.9224840669927376, 'r': 0.9002675923916974, 'f': 0.9112404377585009}, 'DATE': {'p': 0.873966258683427, 'r': 0.8155579564747646, 'f': 0.84375249500998}, 'ORG': {'p': 0.49884704073789393, 'r': 0.2930022573363431, 'f': 0.3691695108077361}, 'PERSON': {'p': 0.9278590078328982, 'r': 0.8380774945168974, 'f': 0.8806859720208667}, 'WORK_OF_ART': {'p': 0.2882442748091603, 'r': 0.2821279139270771, 'f': 0.2851533001057242}, 'CARDINAL': {'p': 0.9023036825290062, 'r': 0.9237390256498537, 'f': 0.9128955427015991}, 'NORP': {'p': 0.7579499323410014, 'r': 0.6610119486649948, 'f': 0.7061697265778898}, 'LANGUAGE': {'p': 0.8083994985374008, 'r':	Nlp_nl, evaluation: nlp_nl3 'ents_p': 0.008297824624355236, 'ents_r': 0.008156367110000735, 'ents_f': 0.008226487808493294, 'ents_per_type': 'GPE': {'p': 0.0, 'r': 0.0, 'f': 0.0}, 'LOC': {'p': 0.8006872852233677, 'r': 0.0165014164305949, 'f': 0.03233640968704462}, 'DATE': {'p': 0.0, 'r': 0.0, 'f': 0.0}, 'PER': {'p': 0.0, 'r': 0.0, 'f': 0.0}, 'PERSON': {'p': 0.0, 'r': 0.0, 'f': 0.0}, 'CARDINAL': {'p': 0.0, 'r': 0.0, 'f': 0.0}, 'MISC': {'p': 0.0, 'r': 0.0, 'f': 0.0}, 'LANGUAGE': {'p': 0.0, 'r': 0.0, 'f': 0.0}, 'TIME': {'p': 0.0, 'r': 0.0, 'f': 0.0}, 'EVENT': {'p': 0.0, 'r': 0.0, 'f': 0.0}, 'NORP': {'p': 0.0, 'r': 0.0, 'f': 0.0}, 'WORK_OF_ART': {'p': 0.0, 'r': 0.0, 'f': 0.0}, 'ORG': {'p': 0.3302564102564103, 'r':

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- 'TIME': {'p': 0.8921953958450309, 'r': 0.8456625864821714, 'f': 0.8683060109289619},
- 'ORDINAL':{'p': 0.9514632405424697, 'r': 0.9315164220824598, 'f': 0.9413841807909605},
- 'FAC': {'p': 0.38613861386138615, 'r': 0.2805755395683453, 'f': 0.325},
- 'EVENT': {'p': 0.6444833625218914, 'r': 0.5954692556634305, 'f': 0.6190075693860388},
- 'LOC': {'p': 0.509375, 'r': 0.4527777777777778, 'f': 0.4794117647058823},
- 'MONEY': {'p': 0.5661375661375662, 'r': 0.34627831715210355, 'f': 0.42971887550200805},
- 'PRODUCT': {'p': 0.05825242718446602, 'r': 0.06315789473684211, 'f': 0.06060606060606061},
- 'LAW': {'p': 0.1125, 'r': 0.08571428571428572, 'f': 0.09729729729729729},
- 'QUANTITY': {'p': 0.7335092348284961, 'r': 0.7830985915492957, 'f': 0.7574931880108993},
- 'PERCENT': {'p': 0.8056537102473498, 'r': 0.76, 'f': 0.7821612349914238}
- 807.875s

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- 'MONEY': {'p': 0.0, 'r': 0.0, 'f': 0.0}
- 18424.796875s

Nlp_multi, evaluation: nlp_nl3
- 'ents_p': 0.005117444598756114, 'ents_r': 0.0046507161279701476, 'ents_f': 0.004872930082796688,
- 'ents_per_type':
- 'GPE': {'p': 0.0, 'r': 0.0, 'f': 0.0},
- 'LOC': {'p': 0.4794520547945205, 'r': 0.006053268765133172, 'f': 0.011955593509820665},
- 'DATE': {'p': 0.0, 'r': 0.0, 'f': 0.0},
- 'PER': {'p': 0.0, 'r': 0.0, 'f': 0.0},
- 'CARDINAL': {'p': 0.0, 'r': 0.0, 'f': 0.0},
- 'PERSON': {'p': 0.0, 'r': 0.0, 'f': 0.0},

Nlp_nl, evaluation: nlp_multi
- 'ents_p': 0.6934851596042562, 'ents_r': 0.6531198265379375, 'ents_f': 0.672697504923005,
- 'ents_per_type':
- 'LOC': {'p': 0.45933392627730013, 'r': 0.658356940509915, 'f': 0.5411257931195063},
- 'PER': {'p': 0.8547093894093806, 'r': 0.7236603257490986, 'f': 0.7837444791554455},
- 'MISC': {'p': 0.638135685505826, 'r':

- **'LANGUAGE': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'MISC': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'TIME': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'EVENT': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'NORP': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'WORK_OF_ART': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'ORG': {'p': 0.1991991991991992, 'r': 0.2126068376068376, 'f': 0.20568475452196386},**
- **'LAW': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'FAC': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'QUANTITY': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'ORDINAL': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'PRODUCT': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'PERCENT': {'p': 0.0, 'r': 0.0, 'f': 0.0},**
- **'MONEY': {'p': 0.0, 'r': 0.0, 'f': 0.0}**
- 431.6875s

- **0.4646368537900412, 'f': 0.5377380133058042},**
- **'ORG': {'p': 0.3955773955773956, 'r': 0.24580152671755726, 'f': 0.3032015065913371}}**
- 18476.90625s

SpaCy's accuracy, total (rounded).

Tagger:	nlp_de2	nlp_multi	nlp_en2	nlp_multi	nlp_nl2	nlp_multi
Evaluation:	nlp_de3	nlp_de3	nlp_en3	nlp_en3	nlp_nl3	nlp_nl3
Precision	0.6558	0.5485	0.9261	0.0274	0.8607	0.0051
Recall	0.5094	0.3471	0.8877	0.0237	0.7921	0.0047
F1-score	0.5734	0.4251	0.9065	0.0254	0.823	0.0049
CPU time total (in seconds)	889.4063	541.4375	740.2188	357.875	807.875	431.6875

Stanza's accuracy, total (rounded).

Tagger:	nlp_de	nlp_de	nlp_en	nlp_en	nlp_nl	nlp_nl
Evaluation:	nlp_de3	nlp_multi	nlp_en3	nlp_multi	nlp_nl3	nlp_multi
Precision	0.5275	0.5834	0.8896	0.0312	0.0083	0.6935
Recall	0.4555	0.5637	0.8289	0.0169	0.0082	0.6531
F1-score	0.4889	0.5734	0.8582	0.0219	0.0082	0.6727
CPU time total (in seconds)	24121.5625	24507.328125	23592.46875	23334.15625	18424.796875	18476.90625