

OpenNTF2: Fairness-aware Graph Neural Team Formation

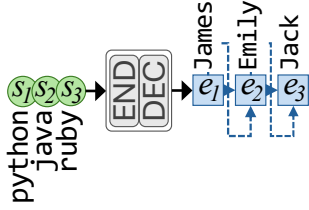
Unified and Reproducible Open-source Library for Neural Team Formation

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Neural Team Formation



Challenges

Biases for male and popular experts; existing models amplify the disparity.

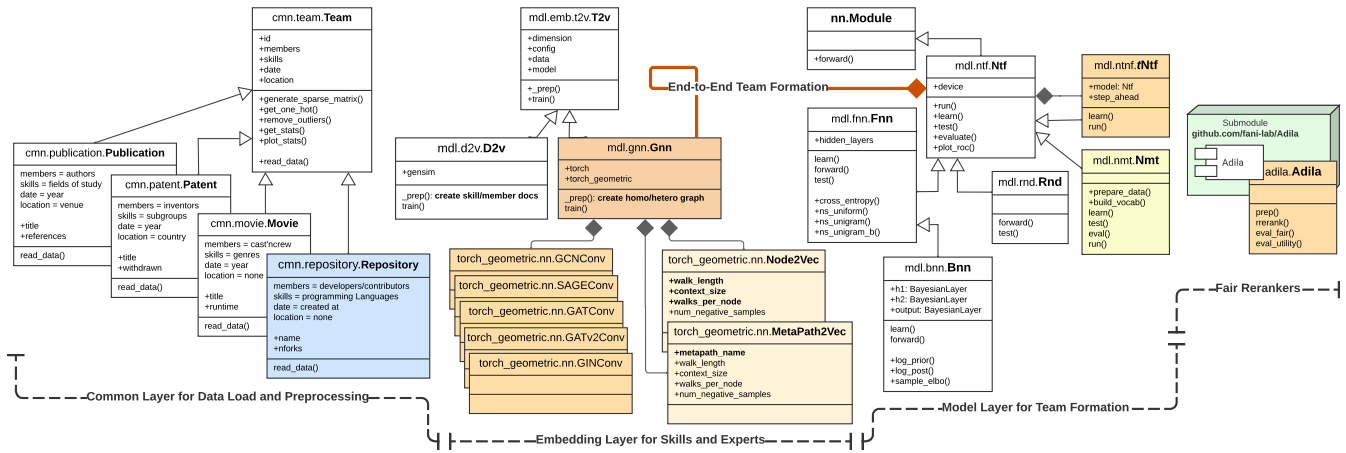
Multi-hop cross-team relations; existing models are multi-label picks.

Temporal skills and collaborations over time; existing models are static.

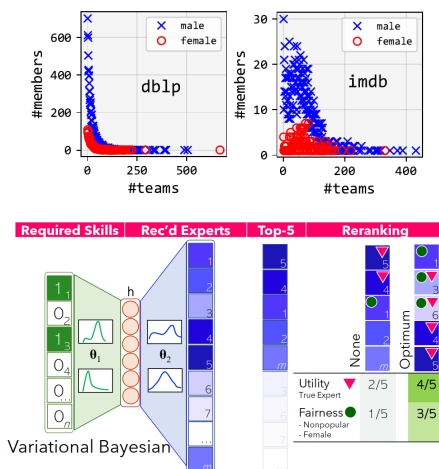
OpenNTF2 vs. Existing Libraries

	neural models	datasets	training strategies	fairness-aware	notions of fairness
PyTFL [46]	variational	dblp	shuffled	×	×
Adila [39]	×	×	×	greedy deterministic [16]	demographic parity [11]
OpenNTF [7]	feedforward, variational feedforward, variational +gnn (transfer)	dblp, imdb, uspt	shuffled, negative sampling	×	×
OpenNTF2	+gnn (end-to-end) +seq-to-seq +transformers	dblp, imdb, uspt +github	shuffled, negative sampling +temporal (streaming)	greedy deterministic [16] +probabilistic reranking [63]	demographic parity [11] +equal opportunity [23]

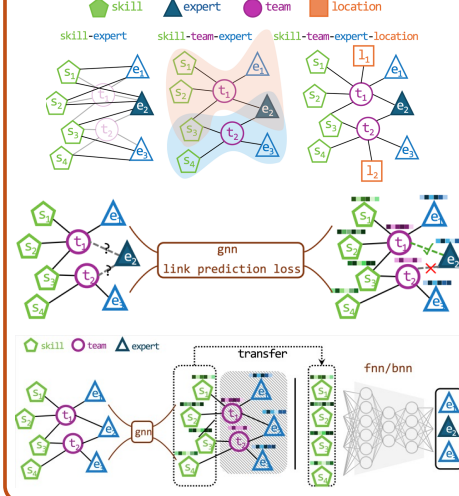
OpenNTF2 Framework



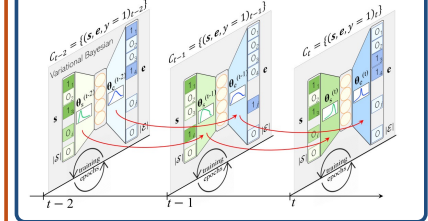
Fair Reranking



Graph Neural Team Formation



Temporal Training



Paper



Code