An overview of the LFI unit tests in this folder

Different cases that are covered:

Case 1	Case 2	Case 3	Case 4
Propositional	With AD	Only positive evidences	Without rules
FO	Without AD	Both positive + negative evidences	Learn for body
			Learn for Head

Test Cases

S. No.	Name	Case 1	Case 2	Case 3	Case 4	.pl file	.ev file	Transformed Program (with use_parents)
1	test_1	Propositional	Without AD	Only positive evidences	Without rules	%Expected outcome: % 1.0::a. % 1.0::b. t(_)::a. t(_)::b.	evidence(a). --- evidence(b). --- evidence(a). --- evidence(a).	lfi(0,t)::lfi_fact(0,t). a :- lfi_body(0,t). lfi_body(0,t) :- lfi_par(0,t), lfi_fact(0,t). lfi_par(0,t) :- true. lfi(1,t)::lfi_fact(1,t). b :- lfi_body(1,t). lfi_body(1,t) :- lfi_par(1,t), lfi_fact(1,t). lfi_par(1,t) :- true.
2	test_2	Propositional	Without AD	Only positive evidences	Learn for body	%Expected outcome: % 1::b. % 0.5::a:-b. t(_)::b. 0.5::a:-b.	evidence(b). --- evidence(b). --- evidence(a). evidence(b). --- evidence(a). evidence(b).	lfi(0,t)::lfi_fact(0,t). b :- lfi_body(0,t). lfi_body(0,t) :- lfi_par(0,t), lfi_fact(0,t). lfi_par(0,t) :- true. 0.5::a :- b.
3	test_3	Propositional	Without AD	Only positive evidences	Learn for Head	%Expected outcome: % 1.0::b. % 1.0::a:-b. t(_)::b. t(_)::a:-b.	evidence(b). --- evidence(b). --- evidence(a). evidence(b). --- evidence(a). evidence(b).	lfi(0,t)::lfi_fact(0,t). a :- lfi_body(0,t). lfi_body(0,t) :- lfi_par(0,t), lfi_fact(0,t). lfi_par(0,t) :- true. lfi(1,t)::lfi_fact(1,t). a :- lfi_body(1,t). lfi_body(1,t) :- lfi_par(1,t), lfi_fact(1,t). lfi_par(1,t) :- b.
4	test_4	Propositional	Without AD	Both positive + negative evidences	Without rules	%Expected outcome: % 0.75::a. % 0.25::b. t(_)::a. t(_)::b.	evidence(a,false). evidence(b,false). --- evidence(a). evidence(b). --- evidence(a). evidence(b,false). --- evidence(a). evidence(b,false).	lfi(0,t)::lfi_fact(0,t). a :- lfi_body(0,t). lfi_body(0,t) :- lfi_par(0,t), lfi_fact(0,t). lfi_par(0,t) :- true. lfi(1,t)::lfi_fact(1,t). b :- lfi_body(1,t). lfi_body(1,t) :- lfi_par(1,t), lfi_fact(1,t). lfi_par(1,t) :- true.

5	test_5	Propositional	Without AD	Both positive + negative evidences	Learn for body	%Expected outcome: % 0.75::b. % 0.5::a:-b. t(_)::b. 0.5::a:-b.	evidence(a,false). evidence(b). --- evidence(a). evidence(b). --- evidence(b,false). --- evidence(b).	lfi(0,t)::lfi_fact(0,t). b :- lfi_body(0,t). lfi_body(0,t) :- lfi_par(0,t), lfi_fact(0,t). lfi_par(0,t) :- true. 0.5::a :- b.
6	test_6	Propositional	Without AD	Both positive + negative evidences	Learn for Head	%Expected outcome: % 0.75::b. % 0.5::a:-b. t(_)::b. t(_)::a:-b.	evidence(a,false). evidence(b). --- evidence(a). evidence(b). --- evidence(b,false). --- evidence(b).	lfi(0,t)::lfi_fact(0,t). a :- lfi_body(0,t). lfi_body(0,t) :- lfi_par(0,t), lfi_fact(0,t). lfi_par(0,t) :- true. lfi(1,t)::lfi_fact(1,t). a :- lfi_body(1,t). lfi_body(1,t) :- lfi_par(1,t), lfi_fact(1,t). lfi_par(1,t) :- b.
7	test_7	Propositional	With AD	Only positive evidences	Without rules	%Expected outcome: % 0.75::a; 0.25::b. t(_)::a; t(_)::b.	evidence(a). --- evidence(b). --- evidence(a). --- evidence(a).	lfi(0,t)::lfi_fact(0,t); lfi(1,t)::lfi_fact(1,t) :- true. a :- lfi_body(0,t). lfi_body(0,t) :- lfi_par(0,t), lfi_fact(0,t). lfi_par(0,t) :- true. b :- lfi_body(1,t). lfi_body(1,t) :- lfi_par(1,t), lfi_fact(1,t). lfi_par(1,t) :- true.
8	test_8	Propositional	With AD	Only positive evidences (we still have negative evidence for untunable parameters)	Learn for body	%Expected outcome: % 0.75::b; 0.25::c. % 0.5::a:-b. t(_)::b; t(_)::c. 0.5::a:-b.	evidence(a). % b needs to be true --- evidence(a). evidence(b). --- evidence(c). --- evidence(a). % b needs to be true --- evidence(a, false). evidence(b). --- evidence(c). --- evidence(a, false). evidence(b).	lfi(0,t)::lfi_fact(0,t); lfi(1,t)::lfi_fact(1,t) :- true. b :- lfi_body(0,t). lfi_body(0,t) :- lfi_par(0,t), lfi_fact(0,t). lfi_par(0,t) :- true. c :- lfi_body(1,t). lfi_body(1,t) :- lfi_par(1,t), lfi_fact(1,t). lfi_par(1,t) :- true. 0.5::a :- b.

9	test_9	Propositional	With AD	Only positive evidences	Learn for Head	%Expected outcome: % 0.75::b; 0.25::c. % 1.0::a:-b. t(_)::b; t(_)::c. t(_)::a:-b.	evidence(a). % b needs to be true --- evidence(a). evidence(b). --- evidence(c). --- evidence(b). --- evidence(a). % b needs to be true --- evidence(b). --- evidence(c). --- evidence(b).	lfi(0,t)::lfi_fact(0,t); lfi(1,t)::lfi_fact(1,t) :- true. b :- lfi_body(0,t). lfi_body(0,t) :- lfi_par(0,t), lfi_fact(0,t). lfi_par(0,t) :- true. c :- lfi_body(1,t). lfi_body(1,t) :- lfi_par(1,t), lfi_fact(1,t). lfi_par(1,t) :- true. lfi(2,t)::lfi_fact(2,t). a :- lfi_body(2,t). lfi_body(2,t) :- lfi_par(2,t), lfi_fact(2,t). lfi_par(2,t) :- b. *(Does not converges)
10	test_10	Propositional	With AD	Both positive + negative evidences	Without rules	%Expected outcome: % 0.75::a; 0.25::b. t(_)::a; t(_)::b.	evidence(a). --- evidence(a, false). --- evidence(b, false). --- evidence(a). evidence(b, false).	lfi(0,t)::lfi_fact(0,t); lfi(1,t)::lfi_fact(1,t) :- true. a :- lfi_body(0,t). lfi_body(0,t) :- lfi_par(0,t), lfi_fact(0,t). lfi_par(0,t) :- true. b :- lfi_body(1,t). lfi_body(1,t) :- lfi_par(1,t), lfi_fact(1,t). lfi_par(1,t) :- true.
11	test_11	Propositional	With AD	Both positive + negative evidences	Learn for body	%Expected outcome: % 0.75::b; 0.25::c. % 0.5::a:-b. t(_)::b; t(_)::c. 0.5::a:-b.	evidence(a,false). evidence(b). evidence(c,false). --- evidence(a). evidence(b). evidence(c,false). --- evidence(b,false). --- evidence(b).	lfi(0,t)::lfi_fact(0,t); lfi(1,t)::lfi_fact(1,t) :- true. b :- lfi_body(0,t). lfi_body(0,t) :- lfi_par(0,t), lfi_fact(0,t). lfi_par(0,t) :- true. c :- lfi_body(1,t). lfi_body(1,t) :- lfi_par(1,t), lfi_fact(1,t). lfi_par(1,t) :- true. 0.5::a :- b.

12	test_12	Propositional	With AD	Both positive + negative evidences	Learn for Head	%Expected outcome: % 0.75::b; 0.25::c. % 0.5::a:-b. t(_)::b; t(_)::c. t(_)::a:-b.	evidence(a,false). evidence(b). evidence(c,false). --- evidence(a). evidence(b). evidence(c,false). --- evidence(b,false). --- evidence(b).	lfi(0,t)::lfi_fact(0,t); lfi(1,t)::lfi_fact(1,t) :- true. b :- lfi_body(0,t). lfi_body(0,t) :- lfi_par(0,t), lfi_fact(0,t). lfi_par(0,t) :- true. c :- lfi_body(1,t). lfi_body(1,t) :- lfi_par(1,t), lfi_fact(1,t). lfi_par(1,t) :- true. lfi(2,t)::lfi_fact(2,t). a :- lfi_body(2,t). lfi_body(2,t) :- lfi_par(2,t), lfi_fact(2,t). lfi_par(2,t) :- b. *(Does not converges)
13	test_13	First Order	Without AD	Only positive evidences	Without rules	%Expected outcome: % 1.0::a(X). % 1.0::b(X). t(_)::a(X). t(_)::b(X).	evidence(a(1)). --- evidence(b(2)). --- evidence(a(2)). --- evidence(a(1)).	lfi(0,t(X)) :: lfi_fact(0,t(X)). a(X) :- lfi_body(0,t(X)). lfi_body(0,t(X)) :- lfi_par(0,t(X)), lfi_fact(0,t(X)). lfi_par(0,t(X)) :- true. lfi(1,t(X)) :: lfi_fact(1,t(X)). b(X) :- lfi_body(1,t(X)). lfi_body(1,t(X)) :- lfi_par(1,t(X)), lfi_fact(1,t(X)). lfi_par(1,t(X)) :- true.
14	test_14	First Order	Without AD	Only positive evidences	Learn for body	%Expected outcome: % 1.0::b(X). % 0.5::a(X) :- b(X). t(_)::b(X). 0.5::a(X) :- b(X).	evidence(a(1),false). evidence(b(1)). --- evidence(a(1)). evidence(b(1)). --- evidence(b(2)).	lfi(0,t(X)) :: lfi_fact(0,t(X)). b(X) :- lfi_body(0,t(X)). lfi_body(0,t(X)) :- lfi_par(0,t(X)), lfi_fact(0,t(X)). lfi_par(0,t(X)) :- true. 0.5::a(X) :- b(X).
15	test_15	First Order	Without AD	Only positive evidences	Learn for Head	%Expected outcome: % 1.0::b(X). % 1.0::a(X) :- b(X). t(_)::b(X). t(_)::a(X) :- b(X).	evidence(b(1)). --- evidence(a(1)). evidence(b(1)). --- evidence(b(2)).	lfi(0,t(X)) :: lfi_fact(0,t(X)). b(X) :- lfi_body(0,t(X)). lfi_body(0,t(X)) :- lfi_par(0,t(X)), lfi_fact(0,t(X)). lfi_par(0,t(X)) :- true. lfi(1,t(X)) :: lfi_fact(1,t(X)). a(X) :- lfi_body(1,t(X)). lfi_body(1,t(X)) :- lfi_par(1,t(X)), lfi_fact(1,t(X)). lfi_par(1,t(X)) :- b(X).

16	test_16	First Order	Without AD	Both positive + negative evidences	Without rules	%Expected outcome: % 0.75::a(X). % 0.5::b(X). t(_)::a(X). t(_)::b(X).	evidence(a(1)). --- evidence(a(2), false). evidence(b(2), false). --- evidence(a(2)). evidence(b(1)). --- evidence(a(1)).	lfi(0,t(X))::lfi_fact(0,t(X)). a(X) :- lfi_body(0,t(X)). lfi_body(0,t(X)) :- lfi_par(0,t(X)), lfi_fact(0,t(X)). lfi_par(0,t(X)) :- true. lfi(1,t(X))::lfi_fact(1,t(X)). b(X) :- lfi_body(1,t(X)). lfi_body(1,t(X)) :- lfi_par(1,t(X)), lfi_fact(1,t(X)). lfi_par(1,t(X)) :- true.
17	test_17	First Order	Without AD	Both positive + negative evidences	Learn for body	%Expected outcome: % 0.75::b(X). % 0.5::a(X) :- b(X). t(_)::b(X). 0.5::a(X) :- b(X).	evidence(a(1),false). evidence(b(1),false). --- evidence(a(1)). evidence(b(1)). --- evidence(a(2)). evidence(b(2)). --- evidence(b(1)). --- evidence(b(1),false). --- evidence(a(1),false). evidence(b(1)). --- evidence(a(2),false). evidence(b(2)). --- evidence(b(1)).	lfi(0,t(X)) :: lfi_fact(0,t(X)). b(X) :- lfi_body(0,t(X)). lfi_body(0,t(X)) :- lfi_par(0,t(X)), lfi_fact(0,t(X)). lfi_par(0,t(X)) :- true. 0.5::a(X) :- b(X).
18	test_18	First Order	Without AD	Both positive + negative evidences	Learn for Head	%Expected outcome: % 0.5::b(X). % 0.5::a(X) :- b(X). t(_)::b(X). t(_)::a(X) :- b(X).	evidence(a(1),false). evidence(b(1)). --- evidence(a(1)). evidence(b(1)). --- evidence(b(2),false). --- evidence(b(1), false).	lfi(0,t(X)) :: lfi_fact(0,t(X)). b(X) :- lfi_body(0,t(X)). lfi_body(0,t(X)) :- lfi_par(0,t(X)), lfi_fact(0,t(X)). lfi_par(0,t(X)) :- true. lfi(1,t(X)) :: lfi_fact(1,t(X)). a(X) :- lfi_body(1,t(X)). lfi_body(1,t(X)) :- lfi_par(1,t(X)), lfi_fact(1,t(X)). lfi_par(1,t(X)) :- b(X).

	test_18_2	First Order	Without AD	Both positive + negative evidences	Learn for Head	%Expected outcome: % 0.6::a(X,Y) :- between(1,2,X), between(1,2,Y). t(_)::a(X, Y) :- between(1,2,X), between(1,2,Y).	evidence(a(1, 1), true). --- evidence(a(1, 1)). --- evidence(a(2, 2)). --- evidence(a(1, 1), false). --- evidence(a(2, 2), false).	lfi(0,t)::lfi_fact(0,t(X,Y)) a(X,Y) :- lfi_body(0,t(X,Y)) lfi_body(0,t(X,Y)) :- lfi_par(0,t(X,Y)), lfi_fact(0,t(X,Y)) lfi_par(0,t(X,Y)) :- between(1,2,X), between(1,2,Y)
19	test_19	First Order	With AD	Only positive evidences	Without rules	%Expected outcome: % 0.75::a(X); 0.25::b(X). t(_)::a(X); t(_)::b(X).	evidence(a(1),true). --- evidence(b(1)). --- evidence(b(1)). evidence(b(2),false). evidence(a(1), false). evidence(a(2)). --- evidence(a(1)).	lfi(0,t(X))::lfi_fact(0,t(X)); lfi(1,t(X))::lfi_fact(1,t(X)) :- true. a(X) :- lfi_body(0,t(X)). lfi_body(0,t(X)) :- lfi_par(0,t(X)), lfi_fact(0,t(X)). lfi_par(0,t(X)) :- true. b(X) :- lfi_body(1,t(X)). lfi_body(1,t(X)) :- lfi_par(1,t(X)), lfi_fact(1,t(X)). lfi_par(1,t(X)) :- true.
20	test_20	First Order	With AD	Only positive evidences	Learn for body	%Expected outcome: % 0.75::b(X); 0.25::c(X). % 1.0::a(X):- b(X). t(_)::b(X) ; t(_)::c(X). 0.5::a(X) :- b(X).	evidence(a(1)). % b needs to be true --- evidence(a(1)). evidence(b(1)). --- evidence(c(1)). --- evidence(b(2)). --- evidence(a(2)). % b needs to be true --- evidence(b(3)). --- evidence(c(3)). --- evidence(b(2)).	lfi(0,t(X)) :: lfi_fact(0,t(X)); lfi(1,t(X)) :: lfi_fact(1,t(X)) :- true. b(X) :- lfi_body(0,t(X)). lfi_body(0,t(X)) :- lfi_par(0,t(X)), lfi_fact(0,t(X)). lfi_par(0,t(X)) :- true. c(X) :- lfi_body(1,t(X)). lfi_body(1,t(X)) :- lfi_par(1,t(X)), lfi_fact(1,t(X)). lfi_par(1,t(X)) :- true. 0.5::a(X) :- b(X).

21	test_21	First Order	With AD	Only positive evidences	Learn for Head	%Expected outcome: % 0.75::b(X); 0.25::c(X). % 0.5::a(X):-b(X). t(_)::b(X) ; t(_)::c(X). t(_)::a(X) :- b(X).	evidence(a(1)). % b needs to be true --- evidence(a(1)). evidence(b(1)). --- evidence(c(1)). --- evidence(b(2)). --- evidence(a(2)). % b needs to be true --- evidence(b(3)). --- evidence(c(3)). --- evidence(b(2)).	lfi(0,t(X)) :: lfi_fact(0,t(X)); lfi(1,t(X)) :: lfi_fact(1,t(X)) :- true. b(X) :- lfi_body(0,t(X)). lfi_body(0,t(X)) :- lfi_par(0,t(X)), lfi_fact(0,t(X)). lfi_par(0,t(X)) :- true. c(X) :- lfi_body(1,t(X)). lfi_body(1,t(X)) :- lfi_par(1,t(X)), lfi_fact(1,t(X)). lfi_par(1,t(X)) :- true. lfi(2,t(X)) :: lfi_fact(2,t(X)). a(X) :- lfi_body(2,t(X)). lfi_body(2,t(X)) :- lfi_par(2,t(X)), lfi_fact(2,t(X)). lfi_par(2,t(X)) :- b(X).
22	test_22	First Order	With AD	Both positive + negative evidences	Without rules	%Expected outcome: % 0.75::a(X); 0.25::b(X). t(_)::a(X) ; t(_)::b(X).	evidence(a(1),false). evidence(b(1)). --- evidence(a(2)). evidence(b(2)). --- evidence(b(1),false). --- evidence(a(1)). --- evidence(a(2)).	lfi(0,t(X))::lfi_fact(0,t(X)); lfi(1,t(X))::lfi_fact(1,t(X)) :- true. a(X) :- lfi_body(0,t(X)). lfi_body(0,t(X)) :- lfi_par(0,t(X)), lfi_fact(0,t(X)). lfi_par(0,t(X)) :- true. b(X) :- lfi_body(1,t(X)). lfi_body(1,t(X)) :- lfi_par(1,t(X)), lfi_fact(1,t(X)). lfi_par(1,t(X)) :- true.
23	test_23	First Order	With AD	Both positive + negative evidences	Learn for body	%Expected outcome: % 0.75::b(X); 0.25::c(X). % 0.5::a(X):-b(X). t(_)::b(X) ; t(_)::c(X). 0.5::a(X) :- b(X).	evidence(a(1),false). evidence(b(1)). evidence(c(1),false). --- evidence(a(2)). evidence(b(2)). evidence(c(2),false). --- evidence(b(2),false). --- evidence(b(2)).	lfi(0,t(X)) :: lfi_fact(0,t(X)); lfi(1,t(X)) :: lfi_fact(1,t(X)) :- true. b(X) :- lfi_body(0,t(X)). lfi_body(0,t(X)) :- lfi_par(0,t(X)), lfi_fact(0,t(X)). lfi_par(0,t(X)) :- true. c(X) :- lfi_body(1,t(X)). lfi_body(1,t(X)) :- lfi_par(1,t(X)), lfi_fact(1,t(X)). lfi_par(1,t(X)) :- true. 0.5::a(X) :- b(X).

24	test_24	First Order	With AD	Both positive + negative evidences	Learn for Head	%Expected outcome: % 0.75::b(X); 0.25::c(X). % 0.5::a(X):- b(X). t(_)::b(X) ; t(_)::c(X). t(_)::a(X) :- b(X).	evidence(a(1),false). evidence(b(1)). evidence(c(1),false). --- evidence(a(2)). evidence(b(2)). evidence(c(2),false). --- evidence(b(2),false). --- evidence(b(2)).	lfi(0,t(X)) :: lfi_fact(0,t(X)); lfi(1,t(X)) :: lfi_fact(1,t(X)) :- true. b(X) :- lfi_body(0,t(X)). lfi_body(0,t(X)) :- lfi_par(0,t(X)), lfi_fact(0,t(X)). lfi_par(0,t(X)) :- true. c(X) :- lfi_body(1,t(X)). lfi_body(1,t(X)) :- lfi_par(1,t(X)), lfi_fact(1,t(X)). lfi_par(1,t(X)) :- true. lfi(2,t(X)) :: lfi_fact(2,t(X)). a(X) :- lfi_body(2,t(X)). lfi_body(2,t(X)) :- lfi_par(2,t(X)), lfi_fact(2,t(X)). lfi_par(2,t(X)) :- b(X).