a) Method

b) Accuracy

Per metric | Per dataset source | Per trajectory type

c) Scalability

Predicted time (#cells × #features)

d) Stability

Similarity between runs

e) Usability

Quality of software and paper

Method	Topology	Branch assignment	Cell positions	Features	Gold	Silver	Dyngen	Dyntoy	PROSSTT	Splatter	Cycle	Linear	Bifurcation	Convergence	Multifurcation	Tree	Acyclic	Connected	Disconnected	1m × 100	100k × 1k	10k × 10k	1k × 100k	100 × 1m	Cor. pred. vs. real	Topology	Branch assignment	Cell positions	Features	Availability	Behaviour	Code assurance	Code quality	Documentation	Paper
Graph methods																																		
PAGA																				1h	7m	55s	19s	24s	0.82									
RaceID / StemID																				6d	11h	1h	45m	8h	0.77									
SLICER																				>7d	>7d	2h	31s	<1s	0.99									
Tree methods																																		
Slingshot																				>7d	12h	56m	2m	50s	0.98									
PAGA Tree																				2h	8m	59s	20s	29s	0.89									
Projected Slingshot																				6d	9h	50m	2m	50s	0.92									
MST																				56m	8m	12m	2m	52s	0.90					Off-the-shelf				
Monocle ICA																				>7d	2d	1h	1h	1d	0.95									
Monocle DDRTree																				1h	26m	2h	14h	2d	0.80									
pCreode																				6d	1d	2h	3m	47s	0.89									
cellTree vem																				>7d	16h	37m	10m	15m	0.77									
SCUBA																				5d	2d	8h	12m	3m	0.86									
cellTree maptpx																				>7d	6d	5h	1h	53m	0.55									
SLICE																				>7d	>7d	1h	51m	1d	0.78									
Sincell																				>7d	>7d	2h	5m	2m	0.99									
CellRouter																				>7d	1d	1h	9m	9m	0.46									
ElPiGraph																				12h	1d	6h	20m	7m	0.92									
URD																				>7d	1d	2h	10m	1m	0.68									
CellTrails																				>7d	>7d	2d	7h	3h	0.76									
Mpath																				>7d	>7d	8h	4h	1d	0.89									
Multifurcation methods																																		
STEMNET																				1h	36m	12m	7m	6m	0.64									
FateID																				1d	6h	1h	26m	20m	0.70									
MFA																				5h	9h	9h	9h	7h	0.86									
GPfates																				>7d	>7d	>7d	1h	7m	0.76									
Bifurcation methods																																		
Projected DPT																				26m	36m	40m	7m	58s	0.76									
Wishbone																				1d	2h	18m	6m	7m	0.66									
DPT																				24m	37m	1h	7m	57s	0.76									
Linear methods																																		
SCORPIUS																				13m	2m	51s	1m	1m	0.93									
Component 1																				34s	2m	11m	3m	51s	0.91					Off-the-shelf				
MATCHER																				3h	3h	1h	16m	4m	0.91									
Embeddr																				>7d	2d	33m	2m	34s	0.93									
TSCAN																				24m	7m	9m	7m	11m	0.96									
Wanderlust																				2d	2h	15m	5m	7m	0.73									
PhenoPath																				1h	5h	9h	4d	>7d	0.83									
Waterfall																				47m	8m	13m	2m	50s	0.88									
ElPiGraph - Linear																				2h	2h	1h	8m	5m	0.90									
topslam																				>7d	>7d	1d	4h	8h	0.99									
FORKS																				4m	5m	17m	6m	2m	0.08									
ouijaflow																				>7d	>7d	2d	>7d	3d	0.80									
Cyclic methods																																		
Angle																				35s	2m	10m	3m	54s	0.95					Off-the-shelf				
ElPiGraph - Cycle																				1h	2h	1h	8m	6m	0.90									
reCAT																				13h	1d	8h	1d	>7d	0.90									

Score

0 0.2 0.4 0.6 0.8 1

Not shown, insufficient data points

CALISTA
cellTree Gibbs
GrandPrix
MERLoT
ouija
pseudogp
SCIMITAR
SCOUP