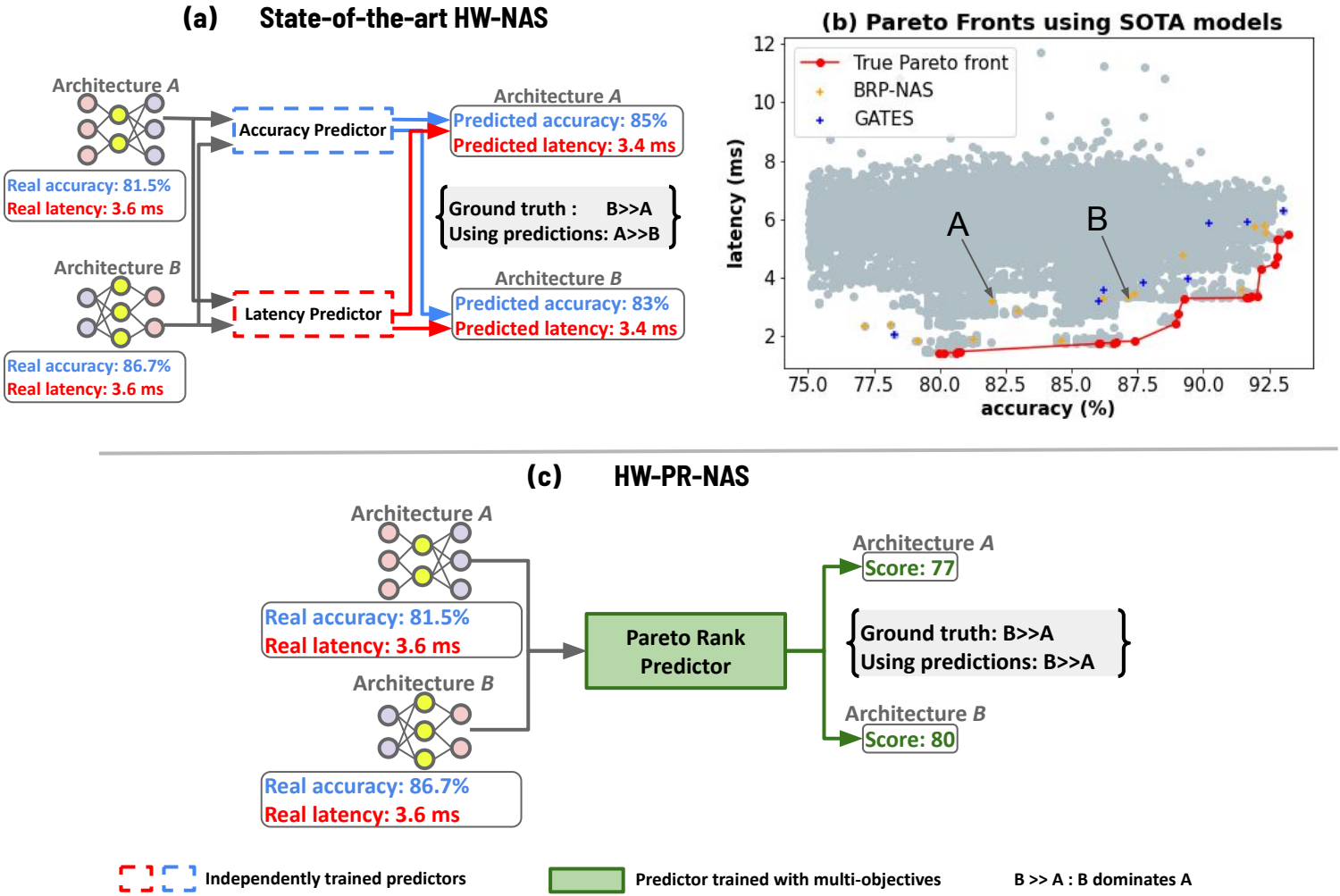
(a) State-of-the-art HW-NAS
Architecture A
Real accuracy: 81.5%
Real latency: 3.6 ms
Accuracy Predictor
Architecture A
Predicted accuracy: 85%
Predicted latency: 3.4 ms
Ground truth : B>>A
Using predictions: A>>B
Architecture B
Real accuracy: 86.7%
Real latency: 3.6 ms
Latency Predictor
Architecture B
Predicted accuracy: 83%
Predicted latency: 3.4 ms
(b) Pareto Fronts using SOTA models
True Pareto front
BRP-NAS
GATES
latency (ms)
accuracy (%)
A
B
(c) HW-PR-NAS
Architecture A
Real accuracy: 81.5%
Real latency: 3.6 ms
Architecture B
Real accuracy: 86.7%
Real latency: 3.6 ms
Pareto Rank Predictor
Architecture A
Score: 77
Ground truth: B>>A
Using predictions: B>>A
Architecture B
Score: 80
Independently trained predictors
Predictor trained with multi-objectives
B >> A : B dominates A