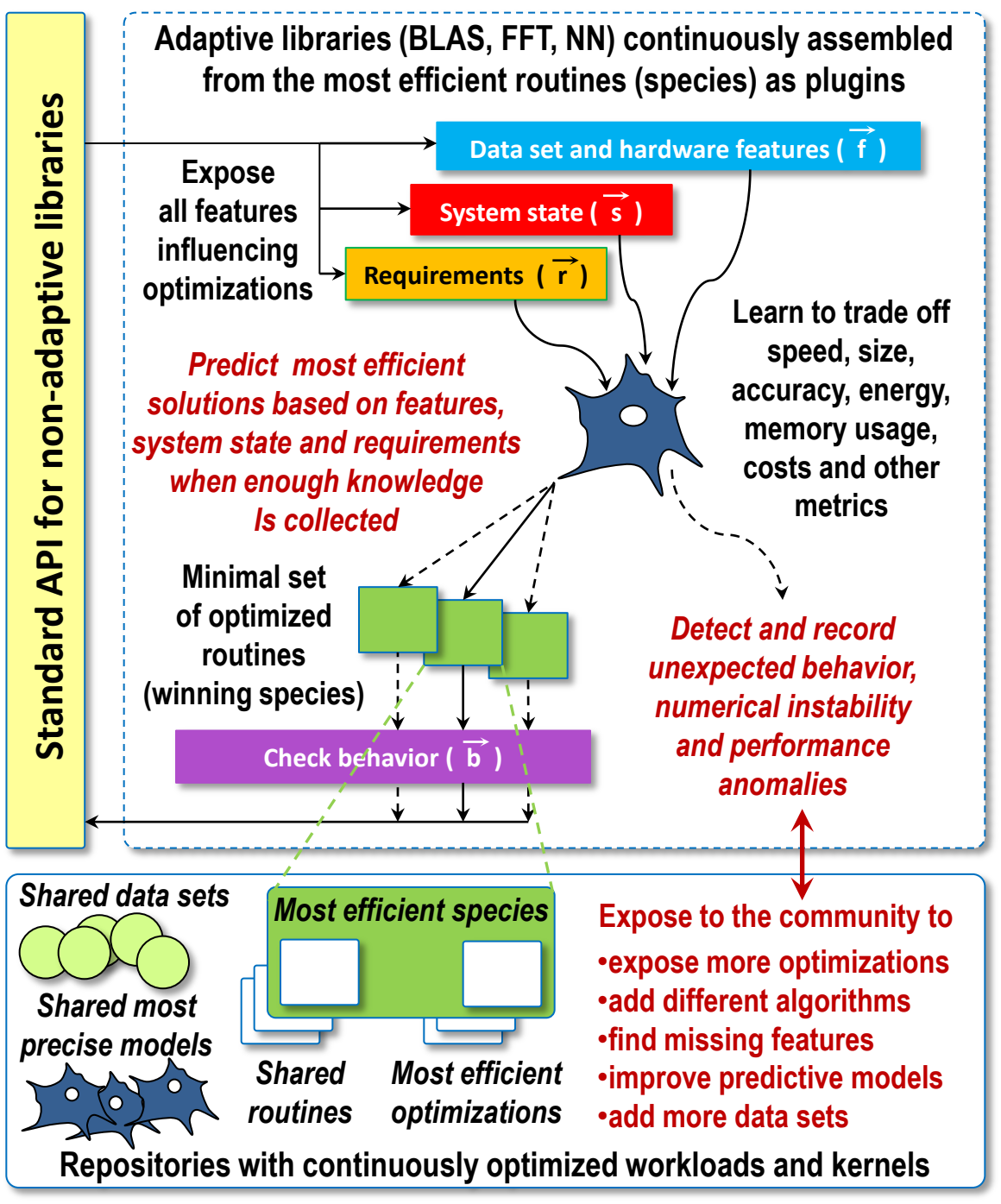
Standard API for non-adaptive libraries
Adaptive libraries (BLAS, FFT, NN) continuously assembled from the most efficient routines (species) as plugins
Expose all features influencing optimizations
Data set and hardware features (f)
System state (s)
Requirements (r)
Learn to trade off speed, size, accuracy, energy, memory usage, costs and other metrics
Predict most efficient solutions based on features, system state and requirements when enough knowledge Is collected
Minimal set of optimized routines (winning species)
Check behavior (b)
Detect and record unexpected behavior, numerical instability and performance anomalies
Shared data sets
Shared most precise models
Most efficient species
Shared routines
Most efficient optimizations
Expose to the community to
•expose more optimizations
•add different algorithms
•find missing features
•improve predictive models
•add more data sets
Repositories with continuously optimized workloads and kernels