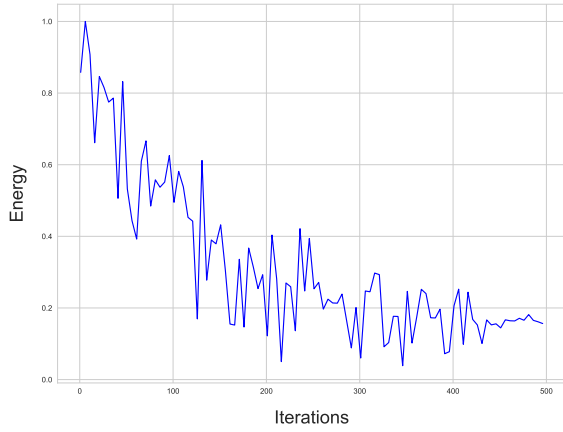


# Supplementary Materials

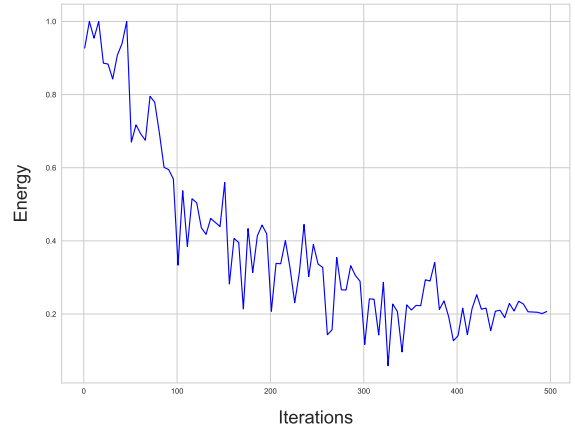
## 1 Energy curves of SA-CNE

Simulated Annealing with Combined Noise Evaluation (SA-CNE) offers a novel approach to accelerate optimization by introducing controlled noise in evaluating solutions.

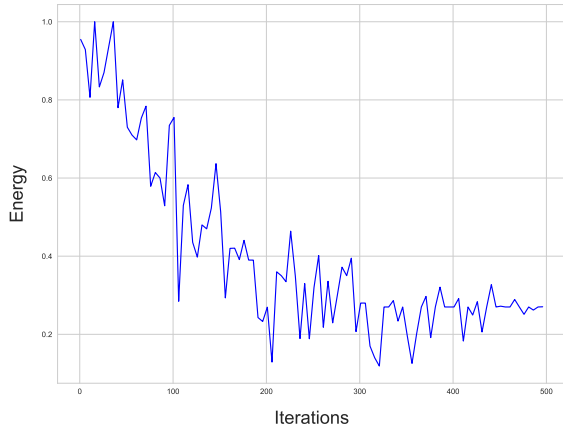
Here, we provide the energy curves of SA-CNE for the parameter optimization of the lung segmentation ensemble for additional insight. The energy curves show how the algorithm converged to the optimal solutions over the iterations for the 10 training sets used.



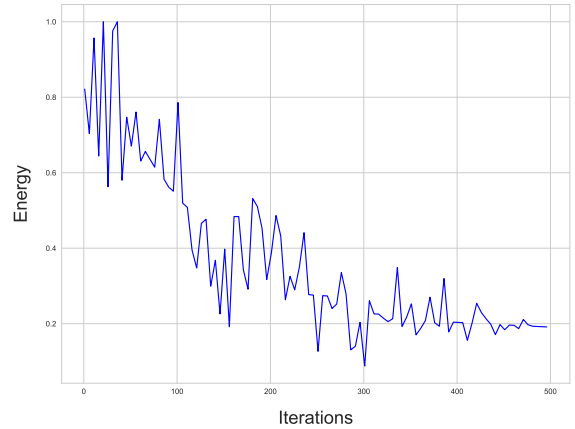
(a) Training set 1



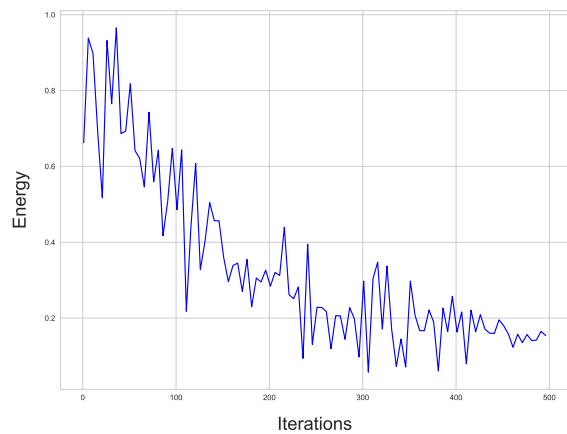
(b) Training set 2



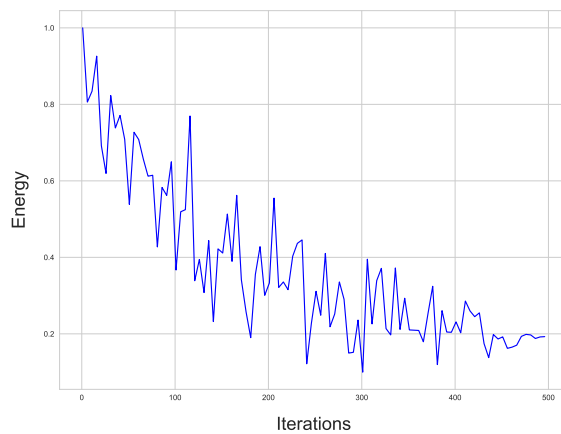
(c) Training set 3



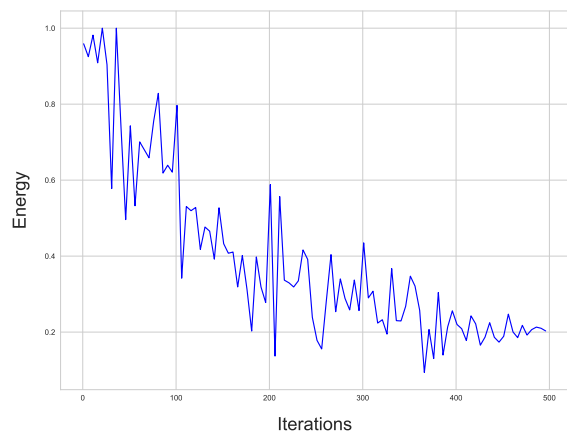
(d) Training set 4



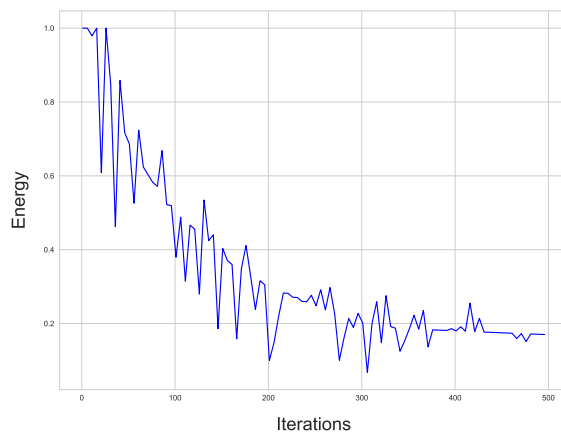
(e) Training set 5



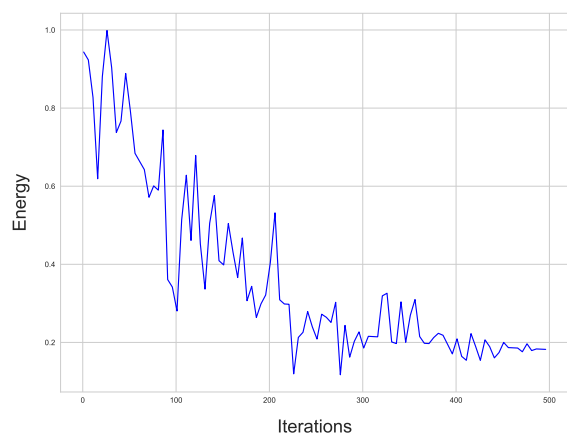
(f) Training set 6



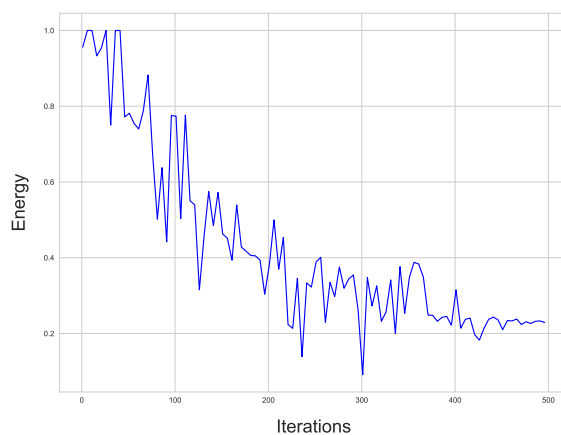
(g) Training set 7



(h) Training set 8



(i) Training set 9



(j) Training set 10

Figure I: Energy curves of SA-CNE for the 10 training sets.