Main

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I. Equation

1) Substitute $\mathbf{e}i$, θ_i for $\mathbf{z}$, θ into (16), we have [1]
2) By taking into account that

$$\Sigma_{ee}^{i} = \omega^{T} \Sigma_{yy}^{i} \omega$$

inserting (24) into $m \left\| \Sigma_{ee}^{i} \right\| / \theta_i^2 \leqslant \tau$ [1]

3) Starting with an initial dictionary, most of the dictionary training algorithms iterate between the *Sparse Coding Stage* and *Dictionary Update Stage*. [2]

II. Table

1) Table 3 tabulates the statistical results of ELM-MEA and MEA based on the Wilcoxon rank sum test under a 95 percent confidence level. Ave. Cost denotes the averaged cost solution, Ave.R refers to the averaged route reliabilities, and Ave.CS denotes the mean percentage computational cost savings (in terms of the number of fitness evaluation) observed on ELM-MEA to arrive at the converged optimized solution of MEA.[3]

III. ALgorithm

1) Algorithm 1 details our proposed ELM-guided memetic computational framework for vehicle routing.[3]

References

[1] X. Lu, H. Zou, H. Zhou, L. Xie, and G. B. Huang, “Robust extreme learning machine with its application to indoor positioning.” *IEEE Transactions on Cybernetics*, vol. 46, no. 1, pp. 1–1, 2016. 1

[2] S. K. Sahoo and A. Makur, “Enhancing image denoising by controlling noise incursion in learned dictionaries,” *IEEE Signal Processing Letters*, vol. 22, no. 8, pp. 1123–1126, 2015. 1

[3] L. L. C. Kasun, H. Zhou, G. B. Huang, and M. V. Chi, “Representational learning with elms for big data,” *Intelligent Systems IEEE*, vol. 28, no. 6, pp. 31–34, 2013. 1