

Supplemental Material for Active Learning based on Locally Linear Reconstruction

Lijun Zhang, *Student Member, IEEE*, Chun Chen, *Member, IEEE*, Jiajun Bu, *Member, IEEE*, Deng Cai, *Member, IEEE*, Xiaofei He, *Senior Member, IEEE*, Thomas S. Huang, *Life Fellow, IEEE*



APPENDIX A PROOF OF THE EQUATION (22)

Following the derivation, we have

$$\begin{aligned}
 & (\mu M_{n \times n}^{-1})^{-1} \\
 &= (\mu M_{n \times n}^{-1} \mathbf{e}_i \mathbf{e}_i^T)^{-1} \\
 &= (\mu M_{n \times n}^{-1})^{-1} - \frac{(\mu M_{n \times n}^{-1} \mathbf{e}_i \mathbf{e}_i^T (\mu M_{n \times n}^{-1})^{-1})}{1 - \mathbf{e}_i^T (\mu M_{n \times n}^{-1})^{-1} \mathbf{e}_i} \\
 &= H - \frac{H \mathbf{e}_i \mathbf{e}_i^T H}{1 - \mathbf{e}_i^T H \mathbf{e}_i} \\
 &= H - \frac{H_{*i} H_{i*}}{1 - H_{ii}}
 \end{aligned}$$

• Z n C C n n d Bu r t t Z n r o v n j
 or tor o rv o ot Co? o Co put r n Z n
 n v r s t H n ou C n
 E ' { { +HalA } 9 -1 -1

R2 M /180.TJ 6. 456(t)99571
 R2 n 10125]TJ /R 0 9.96 P1 Tf 26.1828 1.49391 Td 910512-1 10125
 ' d t