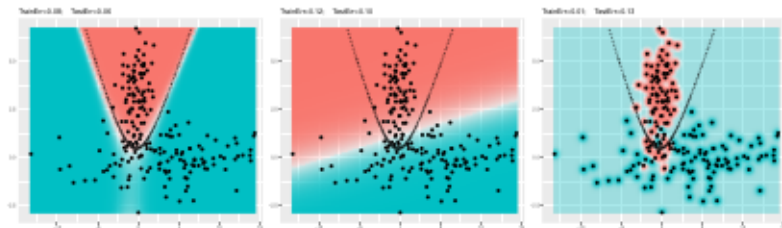# MATHEMATICAL DEFINITIONS

- Nearly no reference does that, here is one approach
- Underfitting $UF(\hat{f}, L) := \mathrm{GE}\left(\hat{f}, L\right) - \mathrm{GE}(f^*, L)$

  Diff in GE between $\hat{f}$ and the Bayes optimal model
- Overfitting $OF(\hat{f}, L) := \mathrm{GE}\left(\hat{f}, L\right) - \mathcal{R}_{\mathrm{emp}}(\hat{f}, L)$

  Diff between (theoretical) GE and training error

NB: Now, RHS is both UF and OF, let's say OF has "prio".