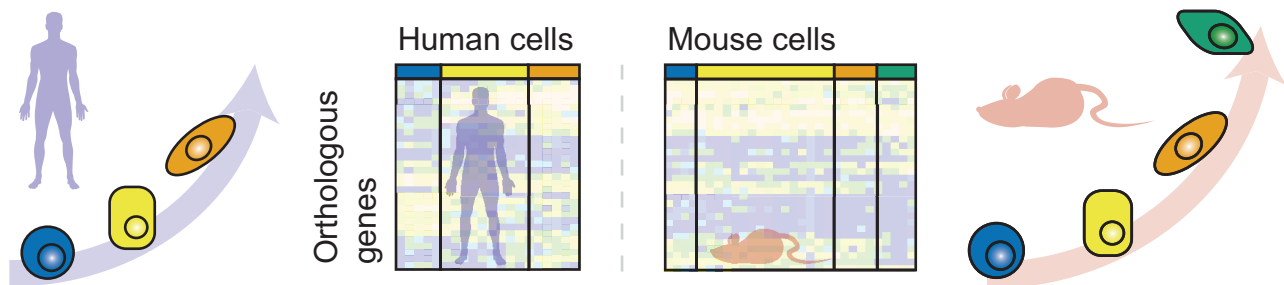
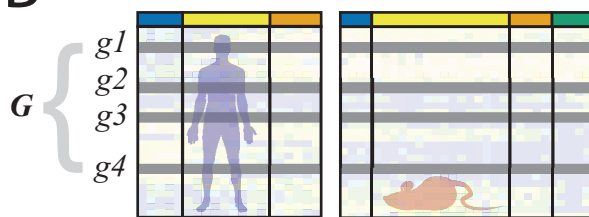


A

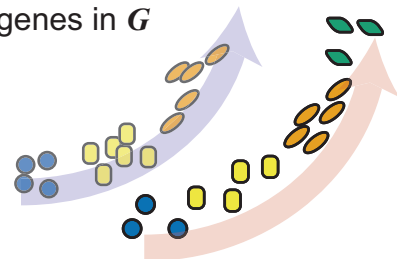
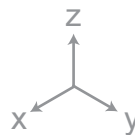


B

i. Select random gene set G



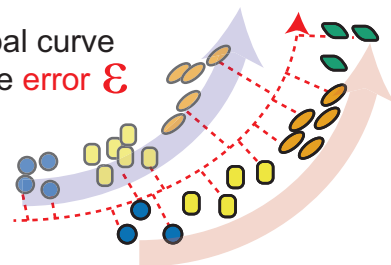
ii. Get embeddings of cells using only genes in G



iv. Update scores for each gene in G

$$\begin{aligned} \text{score}(g1) &\leftarrow \text{score}(g1) - \epsilon \\ &\vdots \\ \text{score}(g4) &\leftarrow \text{score}(g4) - \epsilon \end{aligned}$$

iii. Fit principal curve and calculate error ϵ



C

