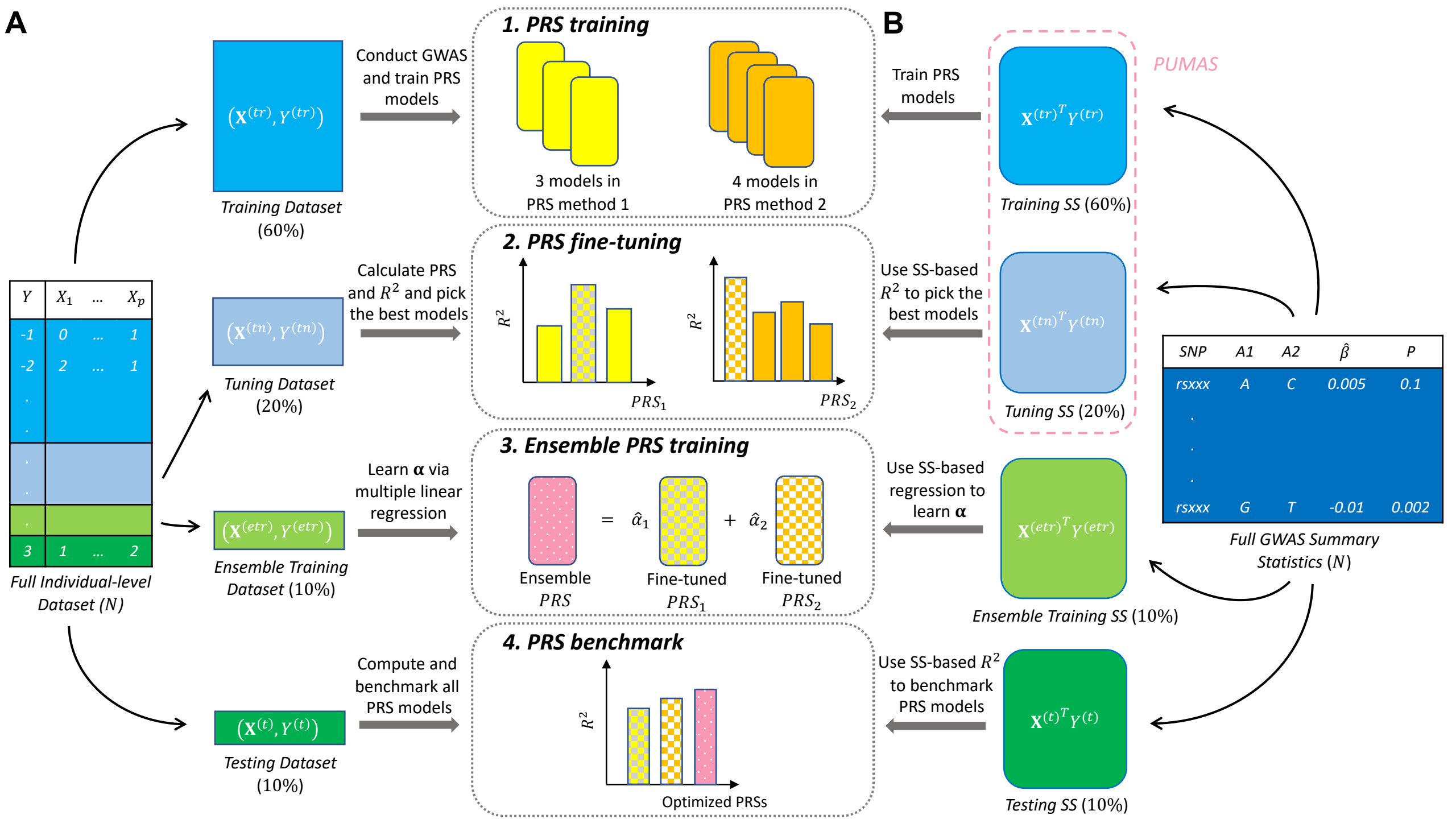
A
B
1. PRS training
2. PRS fine-tuning
3. Ensemble PRS training
4. PRS benchmark
Conduct GWAS and train PRS models
Calculate PRS and R^2 and pick the best models
Learn $\boldsymbol{\alpha}$ via multiple linear regression
Compute and benchmark all PRS models
Training Dataset (60%)
Tuning Dataset (20%)
Ensemble Training Dataset (10%)
Testing Dataset (10%)
Full Individual-level Dataset (N)
3 models in PRS method 1
4 models in PRS method 2
R^2
PRS_1
PRS_2
Ensemble PRS
Fine-tuned PRS_1
Fine-tuned PRS_2
Optimized PRSs
Train PRS models
Use SS-based R^2 to pick the best models
Use SS-based regression to learn $\boldsymbol{\alpha}$
Use SS-based R^2 to benchmark PRS models
PUMAS
Training SS (60%)
Tuning SS (20%)
Ensemble Training SS (10%)
Testing SS (10%)
Full GWAS Summary Statistics (N)
SNP A1 A2 $\hat{\beta}$ P
rsxxx A C 0.005 0.1
rsxxx G T -0.01 0.002