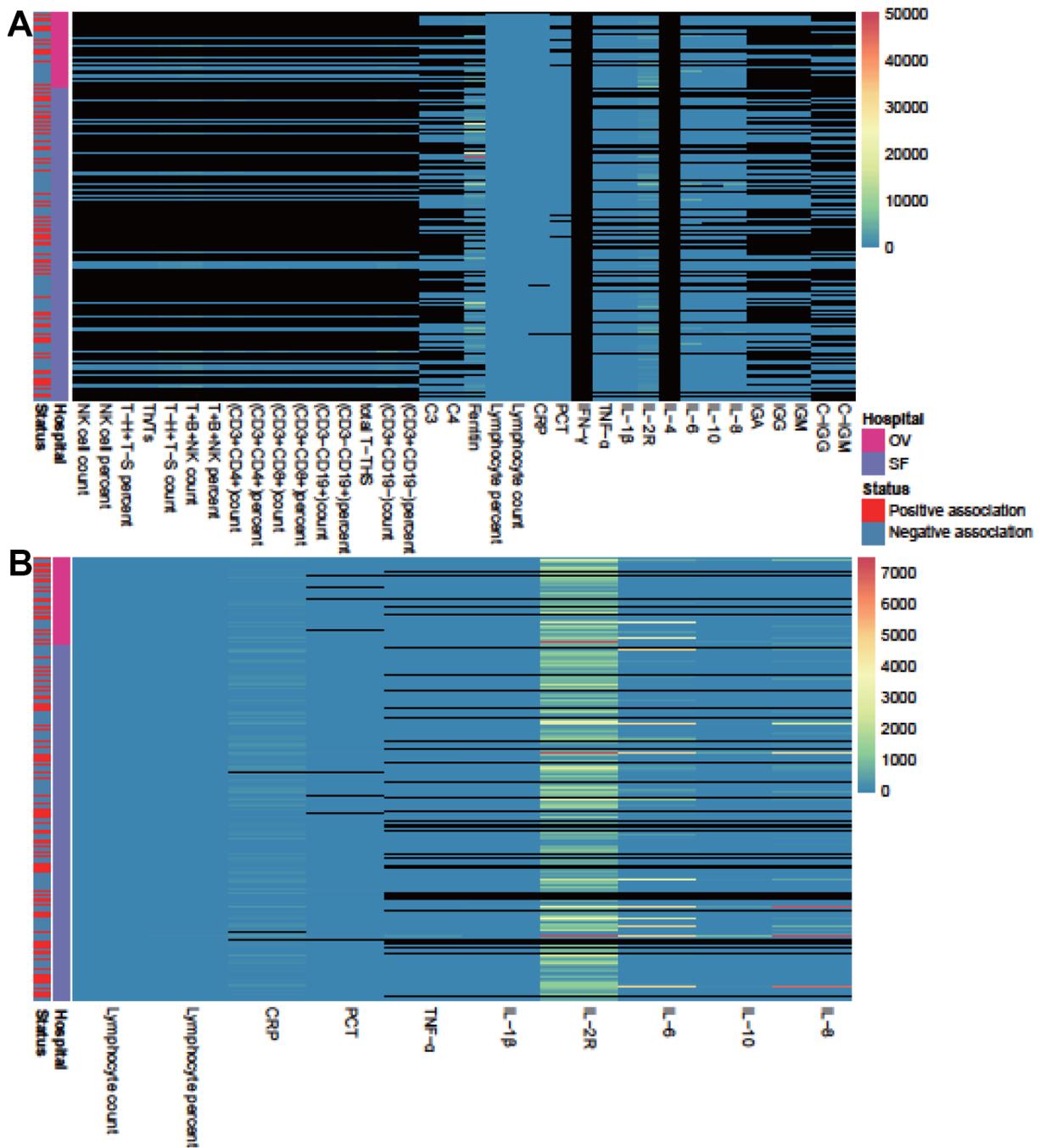
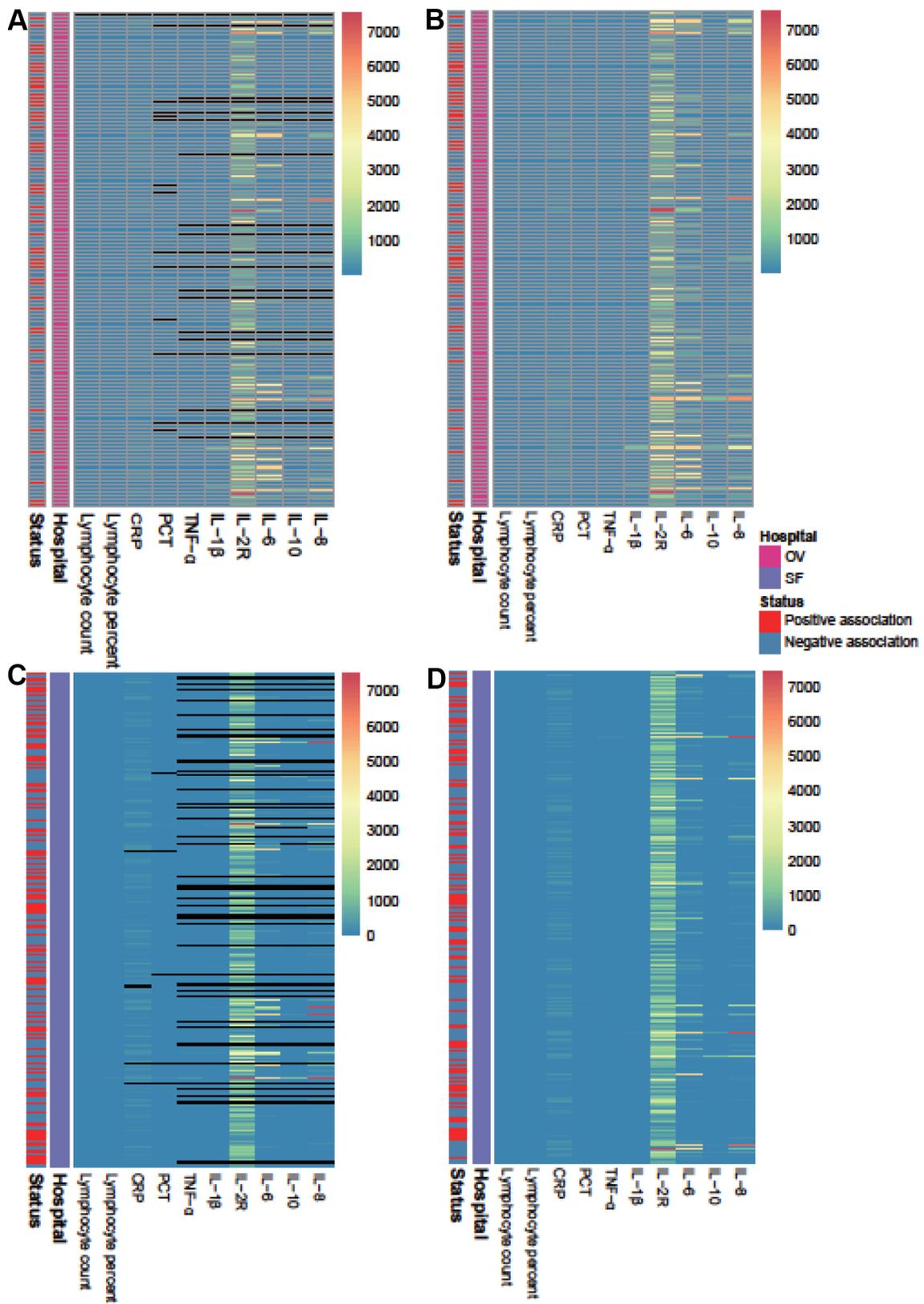


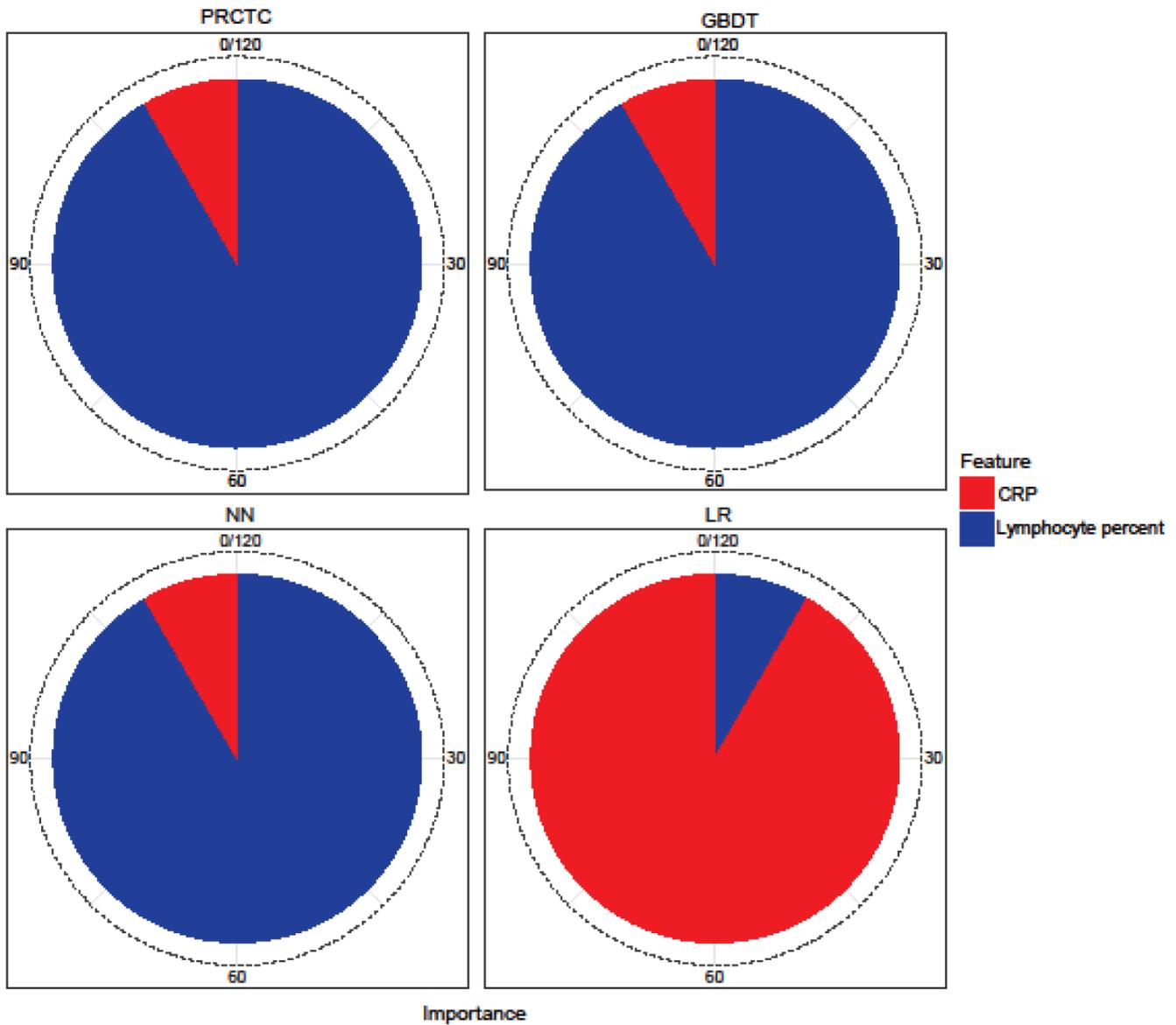
SUPPLEMENTARY FIGURES



Supplementary Figure 1. Visualization of the denoising and filtering process. (A) Heatmap of raw lab test data. (B) Heatmap of lab test data after removing lab test features with more than and equal to 20% missing entries across the SF and OV hospitals. Black tiles refer to missing entries. Abbreviations: NK, natural killer; Th, T-helper lymphocyte; Ts, T-suppressor lymphocyte; C3, complement 3; C4, complement 4; CRP, C reactive protein; PCT, procalcitonin; IFN- γ , interferon- γ ; TNF- α , tumor necrosis factor α ; IL-1 β , interleukin-1 β ; IL-2R, interleukin-2 receptor; IL-4, interleukin-4; IL-6, interleukin-6; IL-8, interleukin-8; IL-10, interleukin-10; IGA, immunoglobulin A; IGG, immunoglobulin G; IGM, immunoglobulin M; C-IGG SARS-CoV-2 specific antibody IgG; C-IGM SARS-CoV-2 specific antibody IgM; SF, Sino-French New City Campus of Tongji Hospital; OV, Optical Valley Campus of Tongji Hospital.



Supplementary Figure 2. Visualization of the imputation process. (A, C) Heatmap of SF and OV lab test data before imputation. (B, D) Heatmap of SF and OV lab test data after imputation. Black tiles refer to missing entries. Abbreviations: CRP, C reactive protein; PCT, procalcitonin; TNF- α , tumor necrosis factor α ; IL-1 β , interleukin-1 β ; IL-2R, interleukin-2 receptor; IL-6, interleukin-6; IL-8, interleukin-8; IL-10, interleukin-10; SF, Sino-French New City Campus of Tongji Hospital; OV, Optical Valley Campus of Tongji Hospital.



Supplementary Figure 3. The importance of relative features derived from PRCTC, GBDT, NN, and LR model, respectively. Abbreviations: PRCTC, prediction of response to corticosteroid therapy in COVID-19 patients; LR, logistic regression; GBDT, gradient boosted decision tree; NN, neural network.