

The aim of this paper is to propose a functional linear regression model for handling both functional predictors and nonignorable missing responses in various neuroimaging studies. We introduce an exponential tilting semiparametric model for nonignorable missing data mechanism. We develop a set of estimating equations and its associated computational method for both parameter estimation and the selection of tuning parameter. We also propose a bootstrap resampling procedure for carrying out statistical inference. Under some regularity conditions, we systematically establish the asymptotic properties (e.g., consistency and convergence rate) of estimates calculated from the proposed estimating equations. Simulation studies and a real data analysis are used to illustrate the finite sample performance of the proposed methods.