THE UNIVERSITY OF CHICAGO

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DISSERTATION PROPOSAL

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Simultaneous Inference for Mean Curves of Functional and Longitudinal Data

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ABSTRACT

We consider simultaneous statistical inference for mean curves of functional and longitudinal data. We establish the asymptotic distribution for the normalized maximum deviations of the local linear estimators from the true mean functions. The asymptotic distribution leads to simultaneous confidence bands with asymptotically correct coverage probabilities. A Gaussian multiplier bootstrap procedure is proposed to obtain the cutoff values and our fully data-driven approach has a good finite sample performance.