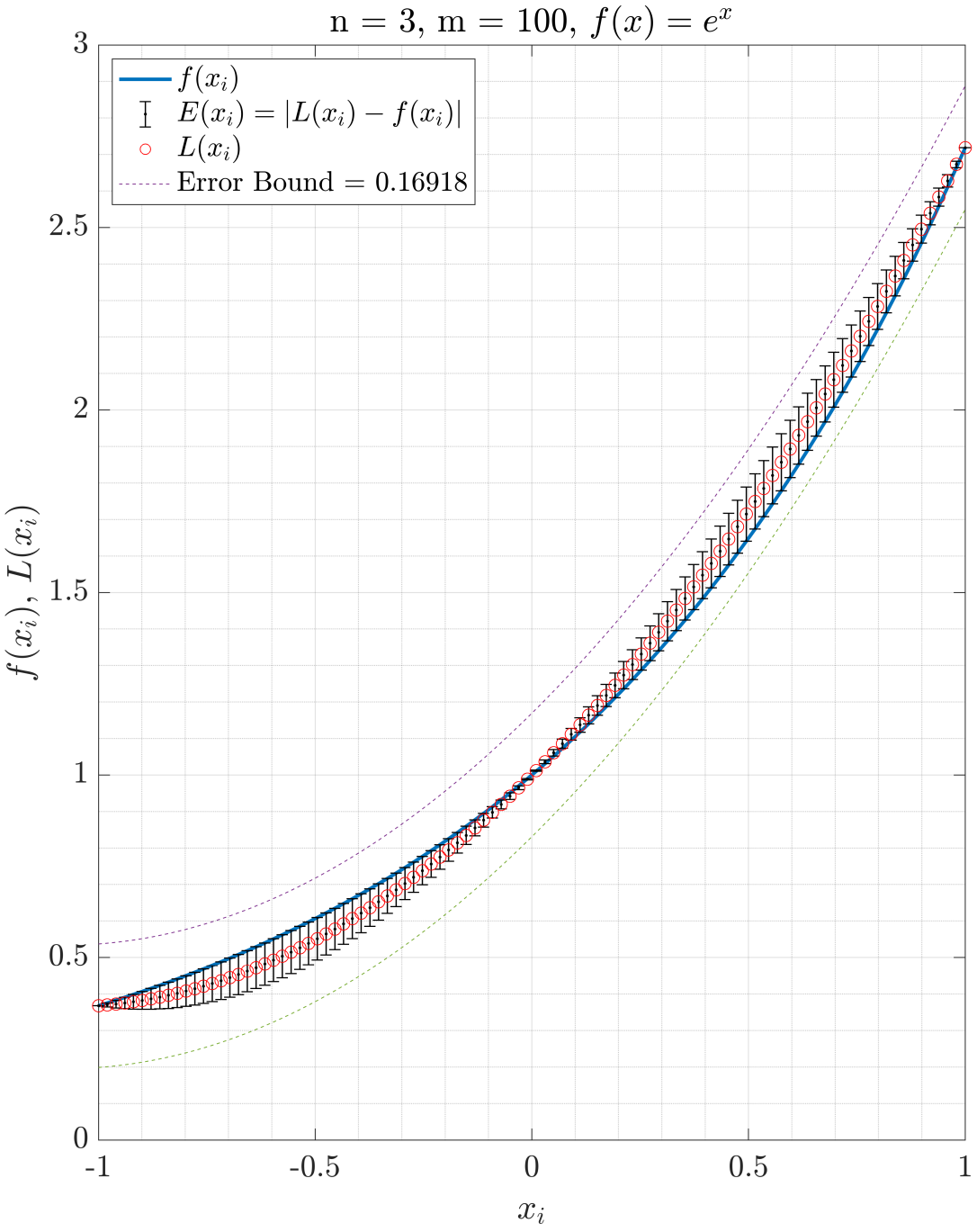
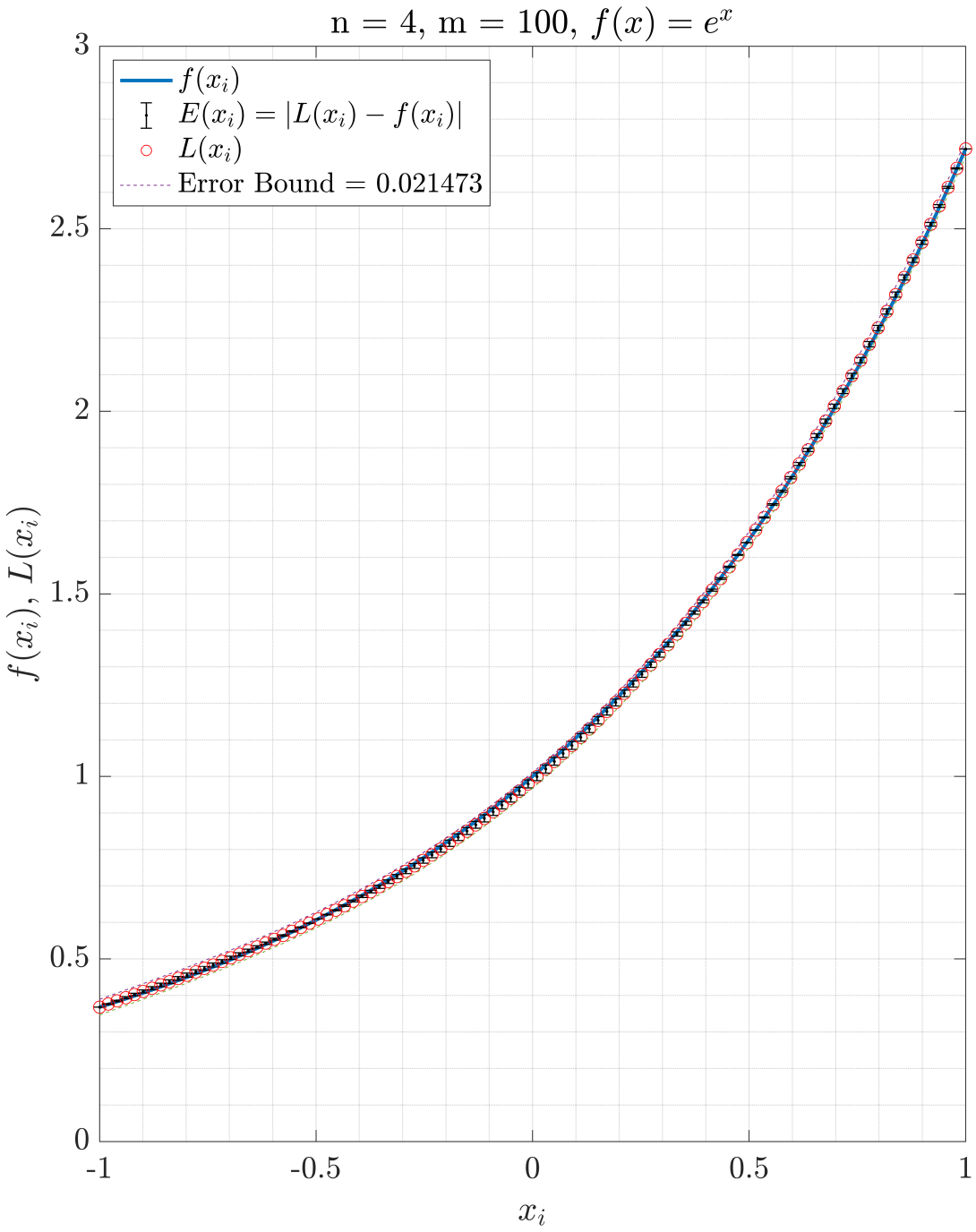
OutLab 2: Lagrange Interpolation Polynomials

Arjun Earthperson

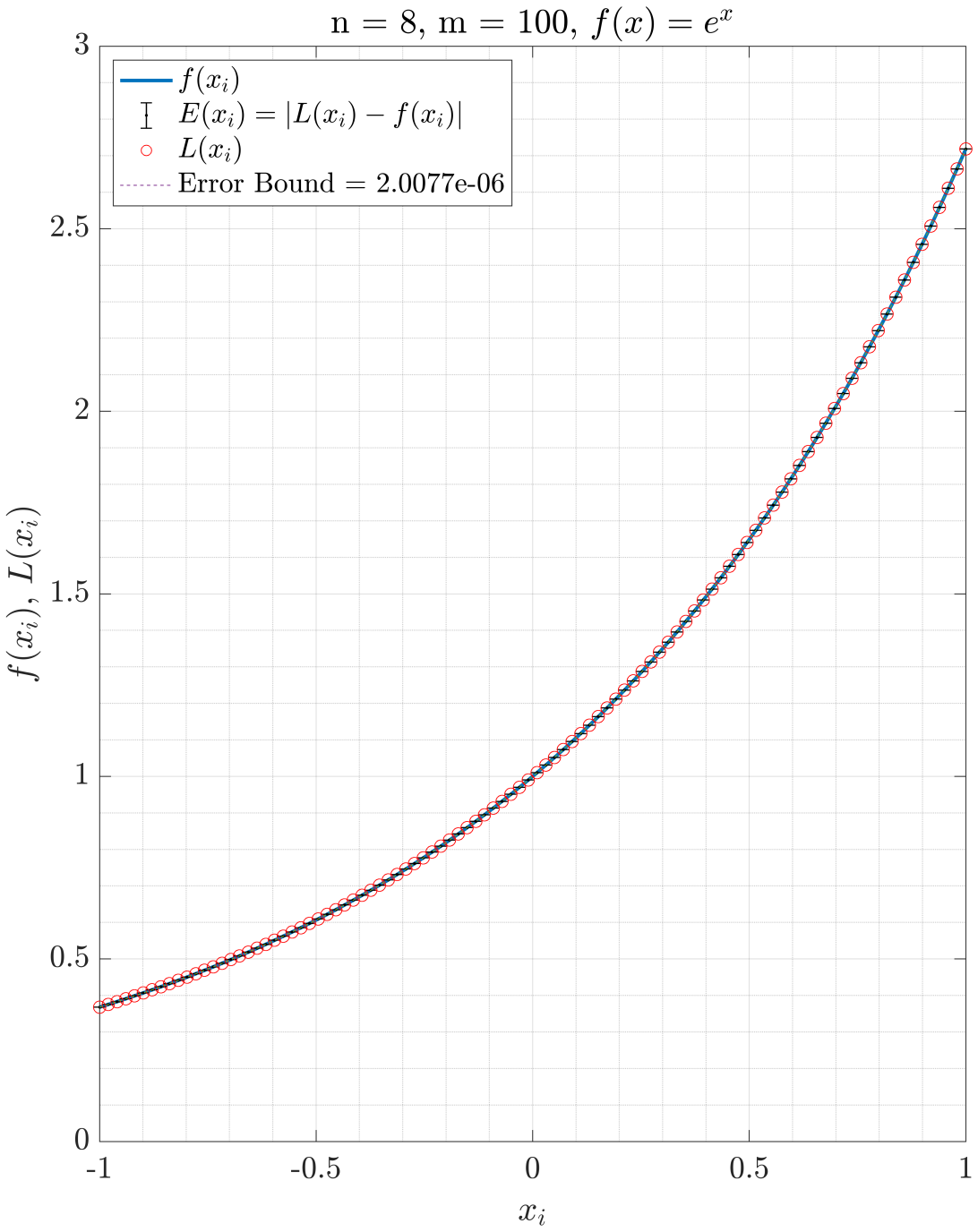
**F(x) = exp(x), m = 1000, n = 3**



**F(x) = exp(x), m = 1000, n = 4**



**F(x) = exp(x), m = 1000, n = 8**



The level of agreement increases drastically as n increases. How n=3, the interpolation is not good enough to approximate exp(x), but in all cases, the error is much lower than the expected error bound. The trend improves as n=4. For n=8, the interpolation is in very good agreement but may not represent realistic models. n=4 is the best fit here.