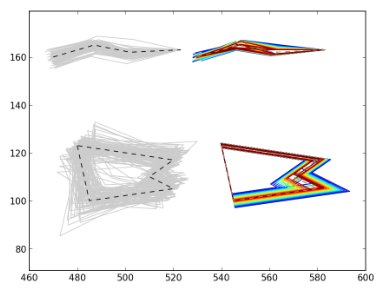
Let A and P be two models,

A = PA + FA + XF + YG + c

P = (PP + FP)X^2+ cY + F + G

where PA , FA , PP , FP are the total area and total perimeter of all probabilistic and fuzzy shapes respectively, X and Y are probabilistic random variables, F and G are fuzzy numbers[[1]](#footnote-1), and c is a constant.

For this example, let the inputs to A and P consist of 4 shapes (figure 1). The definition of the shapes as well as the remaining parameters are shown in the tables below.

Execute on the command line:

python test\_model\_run\_uq.py

After executing, a series of figures will be displayed for A and P including: the minimum and maximum CDF for each alpha-level, the combined minimum and maximum (figure 1 and 2), and an interactive 3D plot of the combinied minimum and maximum .

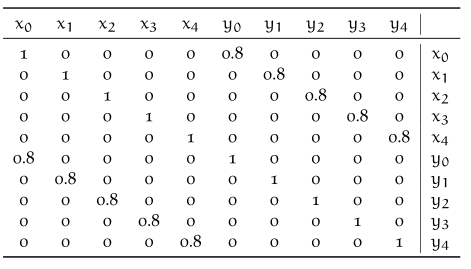
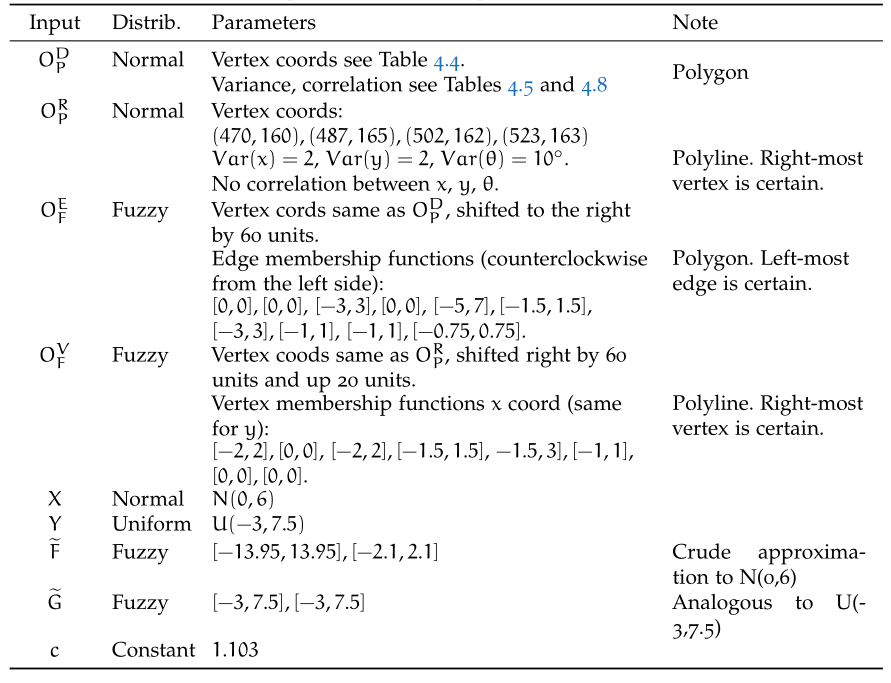
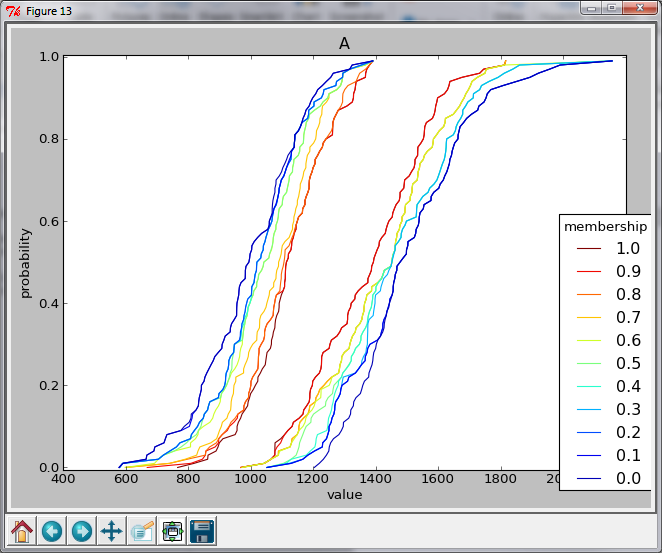
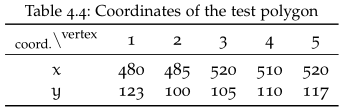


Table 4.8



Table

Figure 1: OPD (lower left), OPR (upper left),   
OFE (lower right), OFV (upper right)



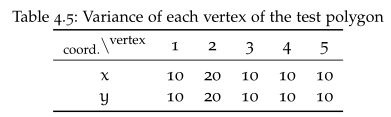


Table 4.5

Figure 1: Fuzzy CDF for A

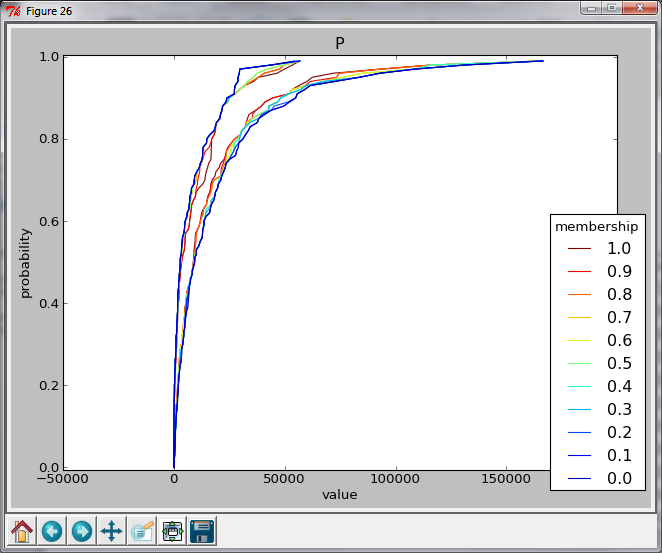


Figure 2: Fuzzy CDF for P

1. In table 1, fuzzy numbers are defined as [sl, su], [kl, ku] where sl, and su are the lower and upper bounds of the support and kl and ku are the same for the kernel. [↑](#footnote-ref-1)