Hello,

My solution to explore all of the design domain consists mostly of the following three ideas:

1) Random sampling: for each result, I randomly sample combinations until I find one that satisfies all constraints. This method is flexible enough to work for any constraints despite not being that efficient.

2) Crowding distance: as results are being randomly generated, another constraint is applied so that all results are at least a specific distance apart from each other. This way I am using the already known information to explore the design domain and also avoid physically equivalent results.

3) Inflation: I initially increase (inflate) the number of desired results to increase diversity. In the end, I eliminate the less diverse until I have the desired number of results. This second step also guarantees that the distribution is more uniform in the explored areas (look at plot generated)

There are two parameters, crowding_distance and inflation, that could be tweaked to get more uniformly distributed results. FYI, I would have used a different method if the evaluation cost were higher.

The attached code is also available on Github.

Thanks,

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