This is unfinished, I was ill and have asked for an extension, let's see if the extension is granted

1. The Basic Version

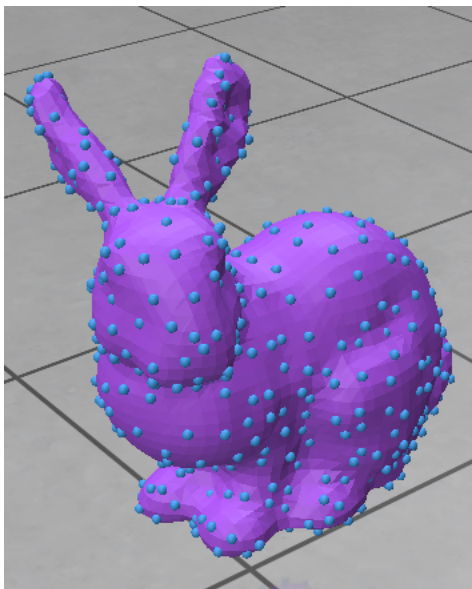These are all run and set at the top of Reconstruction.py

fine

```
file_name, epsilon, RBF_function, l = 'bunny-500.off', 0.05, polyharmonic, -1
```

mutations and floating shells are visible

```
file_name, epsilon, RBF_function, l = 'bunny-500.off', 0.5, polyharmonic, -1
```

fine

```
file_name, epsilon, RBF_function, l = 'bunny-500.off', 0.05, biharmonic, -1
```

mutations and attached shell visible

```
file_name, epsilon, RBF_function, l = 'bunny-500.off', 0.5, biharmonic, -1
```
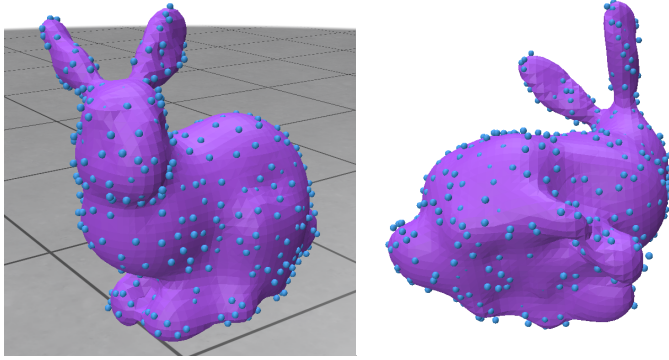

2. Extension: adding a global polynomial

3. Extension: Centre Reduction

q3.py is the script that executes code for the figures below

This is a bunny that uses 10% random points and then gets another 5% added for a total of 15% of the original 500 points

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Here is a dragon-3000 with a similar treatment, this time floating islands are present and the detail suffers greatly

ChatGPT has been used for individual parts of the coding aspect as a smart documentation to tap into the sparse scipy API.