Mosaic Images using Voronoi Diagrams.
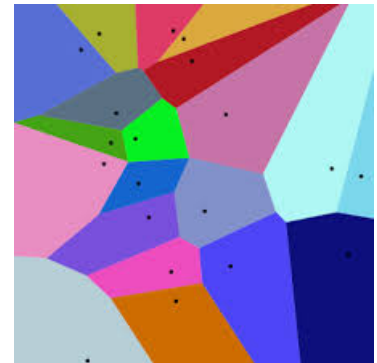
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Given a set of points in the plane, the Voronoi diagram of these points is a geometric structure which breaks the plane into regions based on the distance to these points. See the figure on the right. As can be seen, each point p has a 'region', which consists of points closer to p than to any other point.

Voronoi diagrams have found many applications in science and technology, as well as art. In this project, I propose to use Voronoi diagrams to create mosaics from pictures.

The goal of the project is to implement the algorithm in this paper :

http://nis-ei.eng.hokudai.ac.jp/~doba/papers/egshort02_mosaic.pdf.

Depending on the interest of the students, this project can also be implemented on iOS and Android, so that mosaics can be created from pictures taken by the camera.

The algorithm takes a picture and outputs a mosaic of that picture. Two examples :