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# MXAimbot - AI-based sample centering for macromolecular crystallography

**What is this?**

MXAimbot is a neural network based tool currently in development, designed to relieve researchers of the task of manually and individually centering their samples in synchrotron beamlines for macromolecular crystallography.

**How does it do that?**

It is a pretty simple CNN trained on a few thousand images from a camera pointed at the loop which holds the samples. These images are annotated with coordinates, height, and width.

**Why?**

Because the other two alternatives are

1. Manual centering by humans, which is boring and tedious and consumes researchers valuable time.
2. X-ray centering, which can cause radiation-damage the crystal.

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