

## Quasi-isometries of trees and infinite ended spaces

Mentored by:

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### **Abstract:**

The focus of this summer project is an exciting area of geometry that studies “what a metric space looks like without your glasses on.” More formally, this is doing geometry with a generalization of isometry, called a *quasi-isometry*, that distorts distance by a controlled amount. We will learn about the motivation and some basic results regarding quasi-isometries. We will then focus our attention to specific metric spaces and will research methods for showing whether or not they are quasi-isometric. More specifically, the spaces we will study include trees (not necessarily vertex transitive or bounded valence) and, time permitting, more general infinite-ended spaces.

### **Prerequisites:**

Definition of a metric space.

Basic group theory and topology would be helpful but not necessary.