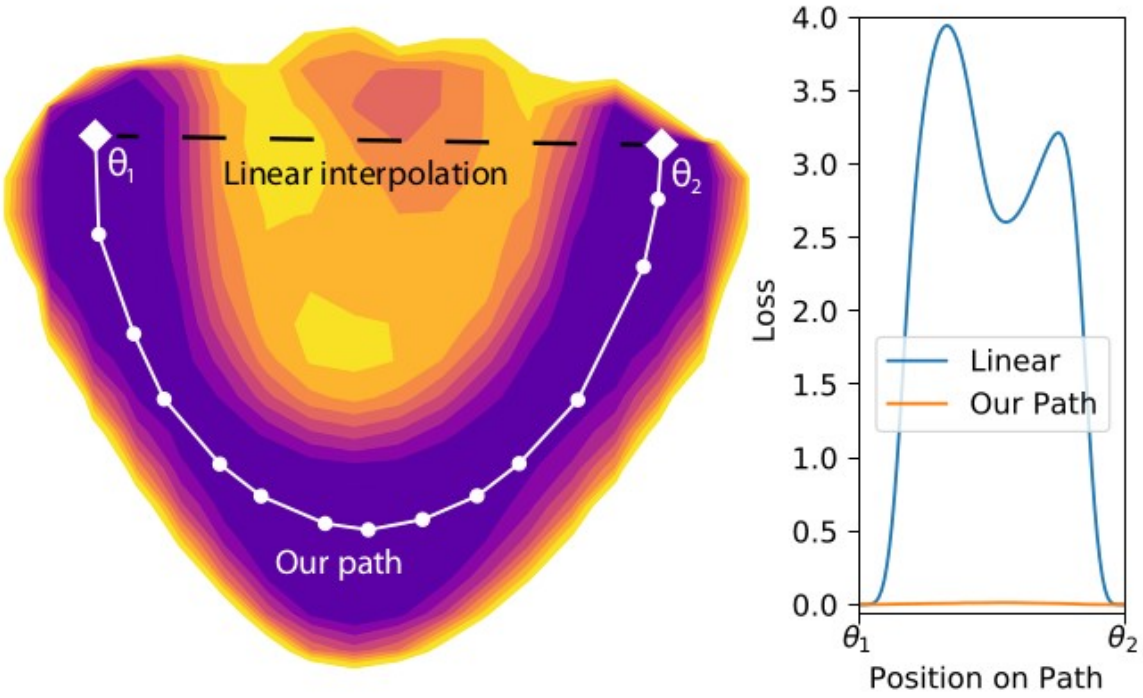
**Project#1 CogSci 131**
Summer 2021
Due Tue Aug X at 12 midnight

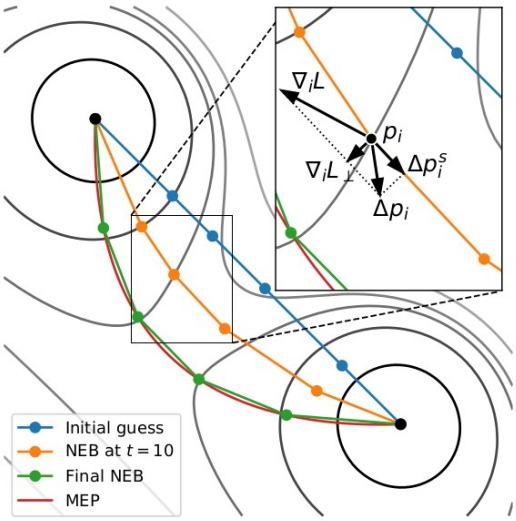
Consider the paper by Drexler et al. [1]. As you can see in figure 1 of that paper, the landscape for the energy landscape looks like the figure below: red colors indicate high energy (far away from the answer) and blue color indicates a valley ( low energy or low error). The main theme of this project is to try to




explore the landscape in our simple neural network that we have used in class.

1. Propose a method to explore the energy landscape of our neural network problem using the two papers enclosed as a source of inspiration. I expect to see code here.

2. Read about the elastic band method and describe what it is about. Use figure 2, shown below, from the paper in [1].




3. Code a simplified version of the elastic band method applied to our neural net problem.

[1] Felix Draxler, Kambis Veschgini, Manfred Salmhofer,and Fred Hamprecht. Essentially no barriers in neu-ral network energy landscape. In Proceedings of the35th International Conference on Machine Learning, pages 1308–1317, 2018. arXiv:1803.00885