

HandScribe

ASL

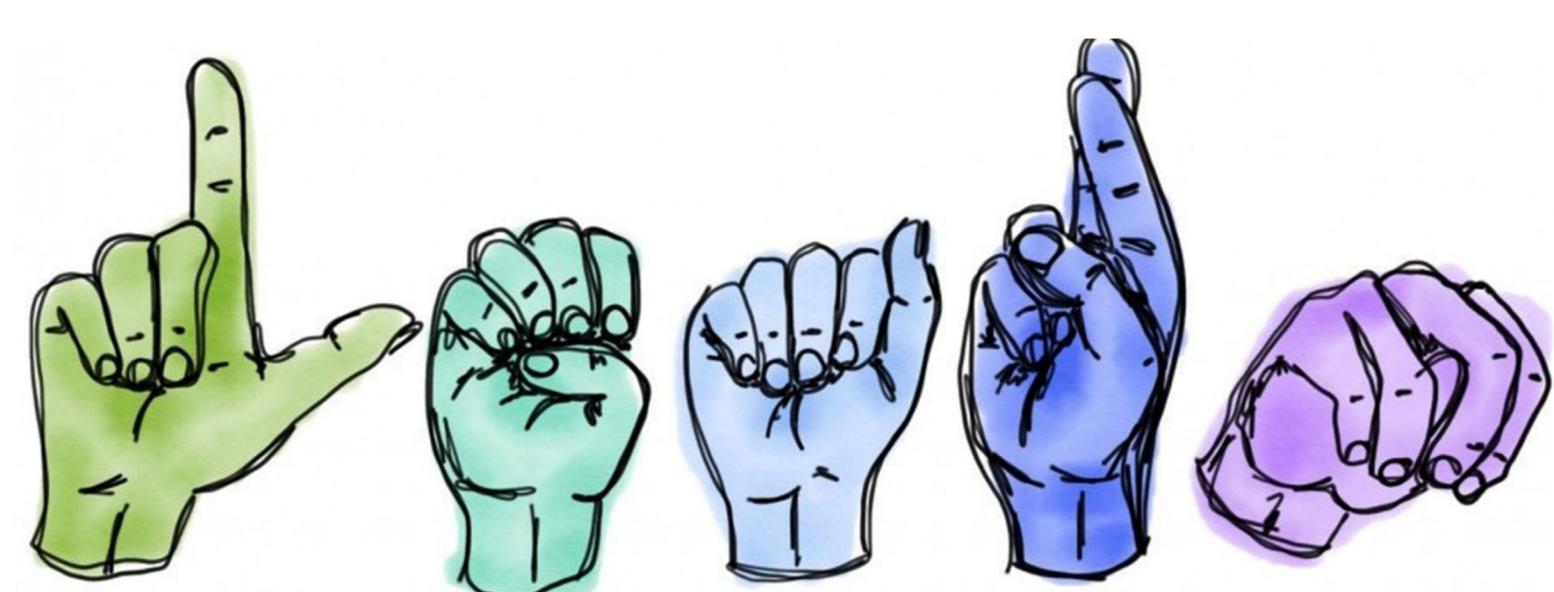
American Sign Language (ASL) serves as the main sign language of the deaf community in North America. Words and grammar are composed of a combination of hand signals and facial expressions to convey sentences.



However, for words without a sign, such as names and loanwords, there exists **ASL fingerspelling**, where English letters can be individually represented with a hand sign.

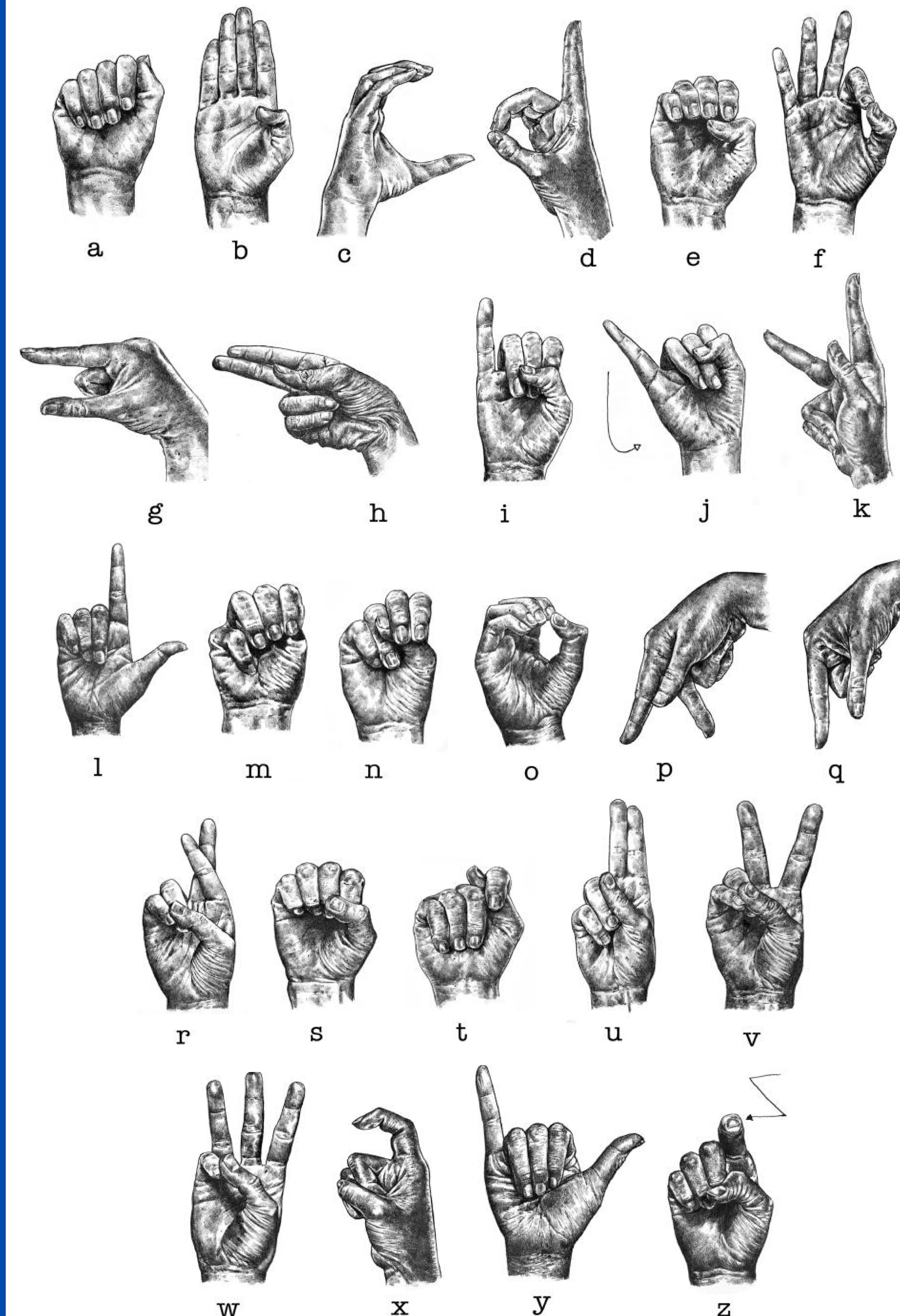
Objective

For learners of ASL, it may be difficult to find someone from the deaf community to learn from. It is often a **challenge receiving adequate practice and feedback**, even for something as simple as fingerspelling.

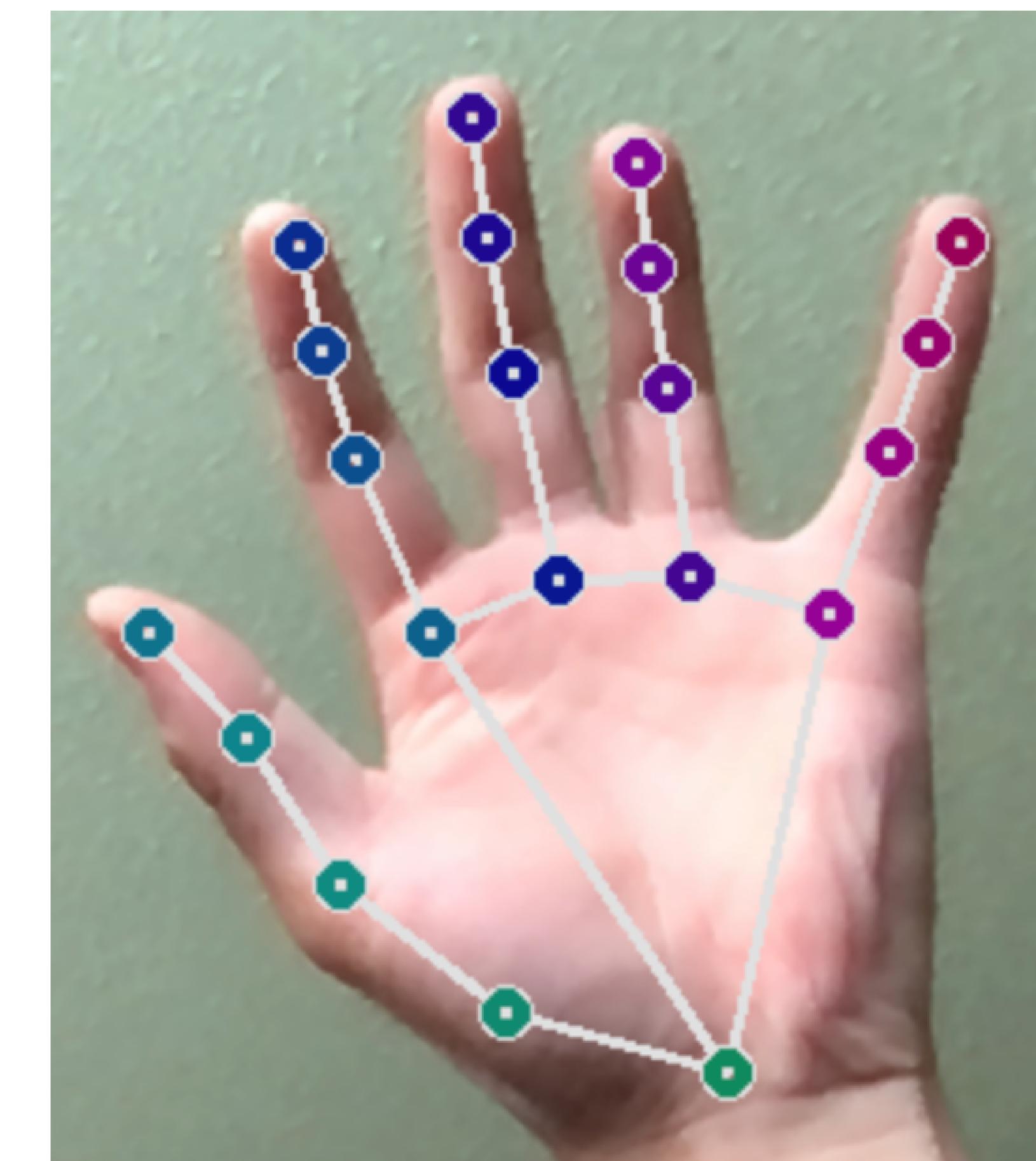


HandScribe, the Sign Language Alphabet Translator, aims to fix this problem. It uses a **trained neural network to classify and identify a learner's fingerspelling signs** live to the camera.

Fingerspelling Alphabet



Landmarks



Relative Coordinates

0	1	2	...	20
(35, 26)	(38, 24)	(67, 53)	...	(99, 25)

Normalization from [-1, 1]

0	1	2	...	20
(0, 0)	(0.34, -0.64)	(0.46, -0.4)	...	(-0.95, 0.78)

Flatten to 1D

0, 0, 0.34, -0.64, 0.46, -0.4, ..., -0.95, 0.78

Neural Net

