

# Invariant and Equivariant Neural Networks

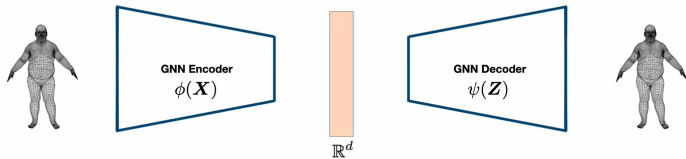
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# Introduction

Mesh  $\rightarrow$  mesh



Point cloud  $\rightarrow$  implicit

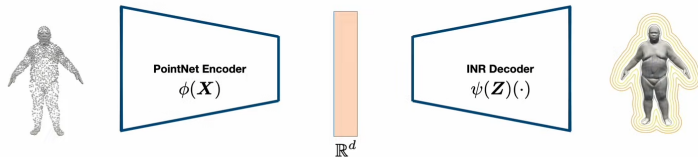


Figure: <https://www.youtube.com/watch?v=Lft6r5oVyXM>

# Invariance

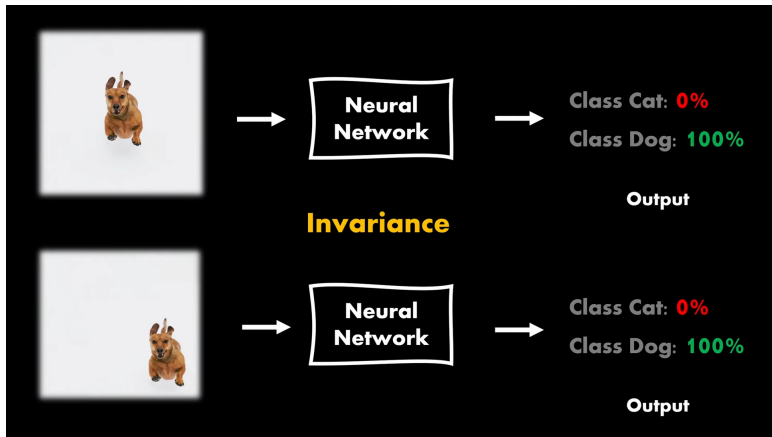


Figure: [https://www.youtube.com/watch?v=2bP\\_KuBrXSc](https://www.youtube.com/watch?v=2bP_KuBrXSc)

# Equivariance

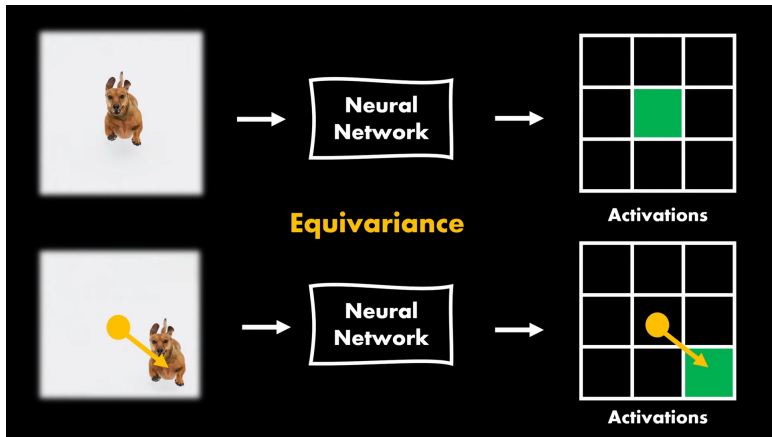


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- Instead find function (called frame) that assigns to subgroup of a group
- If frame invariant/equivariant  $\rightarrow$  only averaging over frame needed

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- FAUST Dataset