

A Gentle Introduction to Geometric Deep Learning

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Deep Learning is a branch of Machine Learning that has been revolutionizing numerous fields of STEM and beyond since the end of the last AI Winter. While even the multilayer perceptron is a universal function approximator, we are left with questions about why certain neural network architectures are particularly effective on certain problems. One emerging research framework that helps make sense of these improvements is Geometric Deep Learning. As the name of the subject suggests, it makes use of Geometry. Ever since the beginning of the Erlangen Program initiated by Felix Klein, Geometry has fundamentally been the study of symmetry in an abstract sense. In this talk I will emphasize motivating Geometric Deep Learning and offering elementary definitions and examples to educate a diverse audience on how it helps explain certain improvements in Deep Learning.

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