

# Literature Review Papers

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## **Auto-Encoding Variational Bayes**

This foundational paper introduces the Variational Autoencoder (VAE), a generative model that learns latent representations of input data, allowing for reconstruction and new data generation. It underpins our use of VAE for local motion prediction.

Authors: D. P. Kingma & M. Welling (2014)

Link: <https://arxiv.org/abs/1312.6114>

## **Long Short-Term Memory**

This seminal paper proposes the LSTM architecture, which addresses the vanishing gradient problem in RNNs and is suitable for learning from sequential data. It forms the basis for our global motion prediction using LSTM.

Authors: S. Hochreiter & J. Schmidhuber (1997)

Link: <https://www.bioinf.jku.at/publications/older/2604.pdf>

## **Social LSTM: Human Trajectory Prediction in Crowded Spaces**

This paper extends LSTM networks to consider social interactions in trajectory prediction. It supports our understanding of how LSTM can model complex pedestrian behavior in dynamic environments.

Authors: A. Alahi et al. (2016)

Link: <https://arxiv.org/abs/1603.09419>

## **AMASS: Archive of Motion Capture as Surface Shapes**

paper presents a large-scale dataset of human motion in 3D, helping us understand the nature of 3D pose data and its relevance in training prediction models.

Authors: N. Mahmood et al. (2019)

Link: <https://amass.is.tue.mpg.de/>

## **A Real-Time Predictive Pedestrian Collision Warning Service for Cooperative Intelligent Transportation Systems Using 3D Pose Estimation**

This paper directly relates to our application. It proposes a system that uses 3D human pose data to anticipate pedestrian movement and issue real-time collision warnings in intelligent transportation systems.

- [1] REFERENCES: Kim, U.-H., Ka, D., Yeo, H., & Kim, J.-H. A Real-Time Predictive Pedestrian Collision Warning Service for Cooperative Intelligent Transportation Systems Using 3D Pose Estimation. IEEE Transactions on Systems, Man, and Cybernetics: Systems.