**The Progress of Human Pose Estimation: A Survey and Taxonomy of Models Applied in 2D Human Pose Estimation**

**Link-** [**IEEEXplore**](https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9144178)

**The 7 W's**

Q1. This paper presents a review of the most outstanding and influential models in human pose estimation progress. This article also provides a guideline for new readers about human pose estimation. Furthermore, this paper can be a base for research to innovate new models by combining the techniques used in different papers.

Q2. It is relevant because this survey provides a summary of HPE works comprehending up to date information and points the future research directions

Q3.

* One of the recent surveys on 2D human pose estimation based on deep learning is [17]. This review started by categorizing pose estimation as a single person and multi-person pipeline and in each category created sub-categories.
* Another survey on deep-learning-based pose estimation has just come out [18] on both 2D and 3D pose estimation. 2D human pose estimation is categorized as [17] while 3D human pose estimation is categorized as model-free and model-based and the approaches are discussed based on these categories in both cases.

Q4. These researches lack diversity as they fail to address newer models and methods that provide a base for research to innovate new techniques.

Q5. This survey paper presents different deep learning-based 2D human pose estimation models. The backbone architecture used, loss functions, the datasets used, as well as evaluation metrics implied are discussed and evaluated.

Q6. It provides a detailed analysis of mostly known effective models used, provide readers with various opportunities in mixing architecture of different models so that to come up with better human pose estimation models using better evaluation metrics or efficient backbone architecture.

Q7. Some challenges remain to be addressed in the near future works. Such as i) occlusion of body parts by clothes and other people, ii) interactions between people, iii) human body structure constraints, and iv) barely visible joints are some of the prominent issues that need immense attention to be resolved in the coming works.