

Studying Worker Motion Path Optimization Under Task Constraints

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Research Question

How can worker performance under a specific task constraint be improved?

Approach Brainstorming

- Optimize Task Structure and Workflow
 - Adjust task sequence for maximum efficiency and minimum idle time
 - Streamline communication channels to reduce delays
- Use Real-Time Feedback Mechanisms
 - Provide workers with timely feedback on task progress and accuracy
 - Feedback system can be based on predefined metrics and thresholds
- Incorporate Adaptive Task Scheduling
 - Adapt the task schedule dynamically based on worker's pace and performance
 - Potentially increase flexibility in managing workload and focus areas
- Analyze and Refine Ergonomics
 - Improve workstation layout and reduce repetitive strain through ergonomic adjustments
 - Use motion analysis to identify and correct inefficient or risky movements

Chosen Approach + Reasoning

Elimination:

- #1 may require substantial workflow changes/training
- #2 focuses on immediate performance feedback
- #3 adds scheduling complexity without guarantee
- #4 enhances physical movement efficiency

Final Choice:

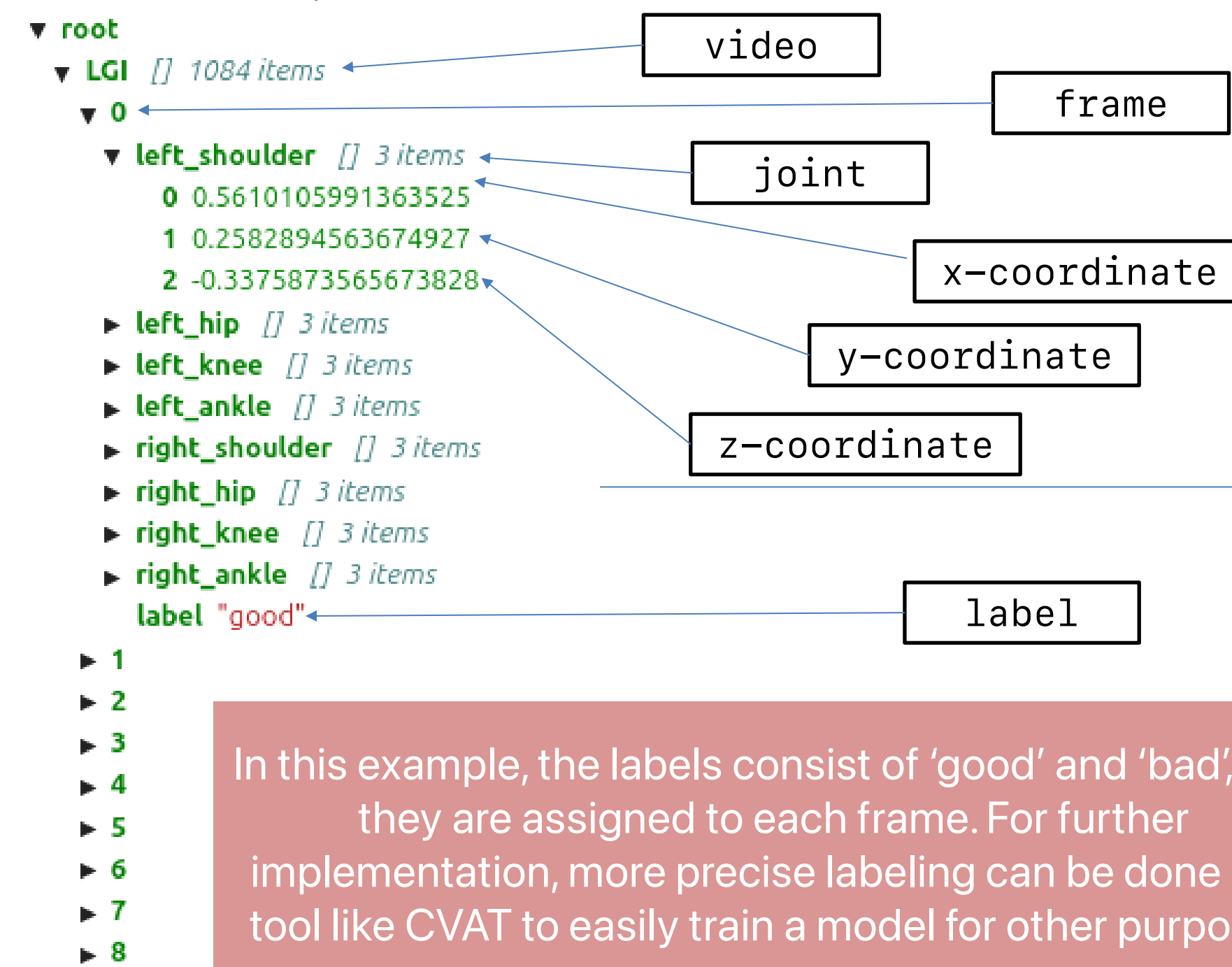
Use Real-Time Feedback Mechanisms in combination with Ergonomic Refinement processes to enhance task efficiency and reduce potential strain.

Current Progress

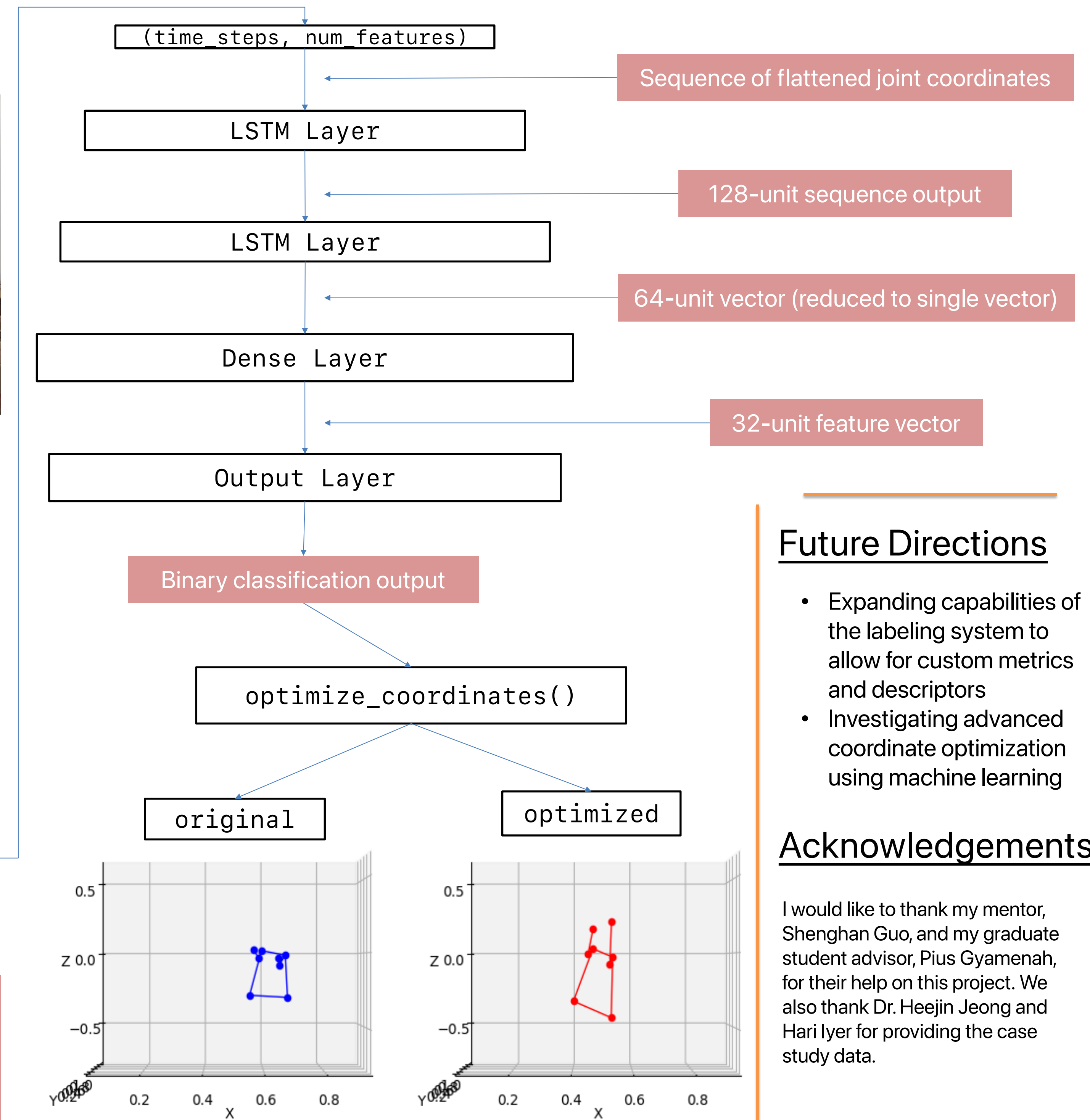


perspectives

extract_coordinates()
Using MediaPipe



In this example, the labels consist of 'good' and 'bad', and they are assigned to each frame. For further implementation, more precise labeling can be done in a tool like CVAT to easily train a model for other purposes



Future Directions

- Expanding capabilities of the labeling system to allow for custom metrics and descriptors
- Investigating advanced coordinate optimization using machine learning

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