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DATA STORM

Golf Pose
Analysis





ABSTRACT

- Data science is furthermore being utilised in sports, especially golf. Our team's idea is to develop a computer vision system that analyzes, evaluates, and assesses a full swing's technique through provided videos.
- Our goal is a tool that helps coaches and athletes pinpoint how they should improve their swing, thereby creating an effective plan.



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MAIN IDEAS AND APPROACH

4 main phases:

Building an extracted features dataset

Defining keypoints based on data

Analysis and real-time visualization

Classifying model training



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STRUCTURE

Pose extractor:

- Project's technical core
- Digitalizing videos

Swing definition:

- Baseline for comparison

Dataset builder:

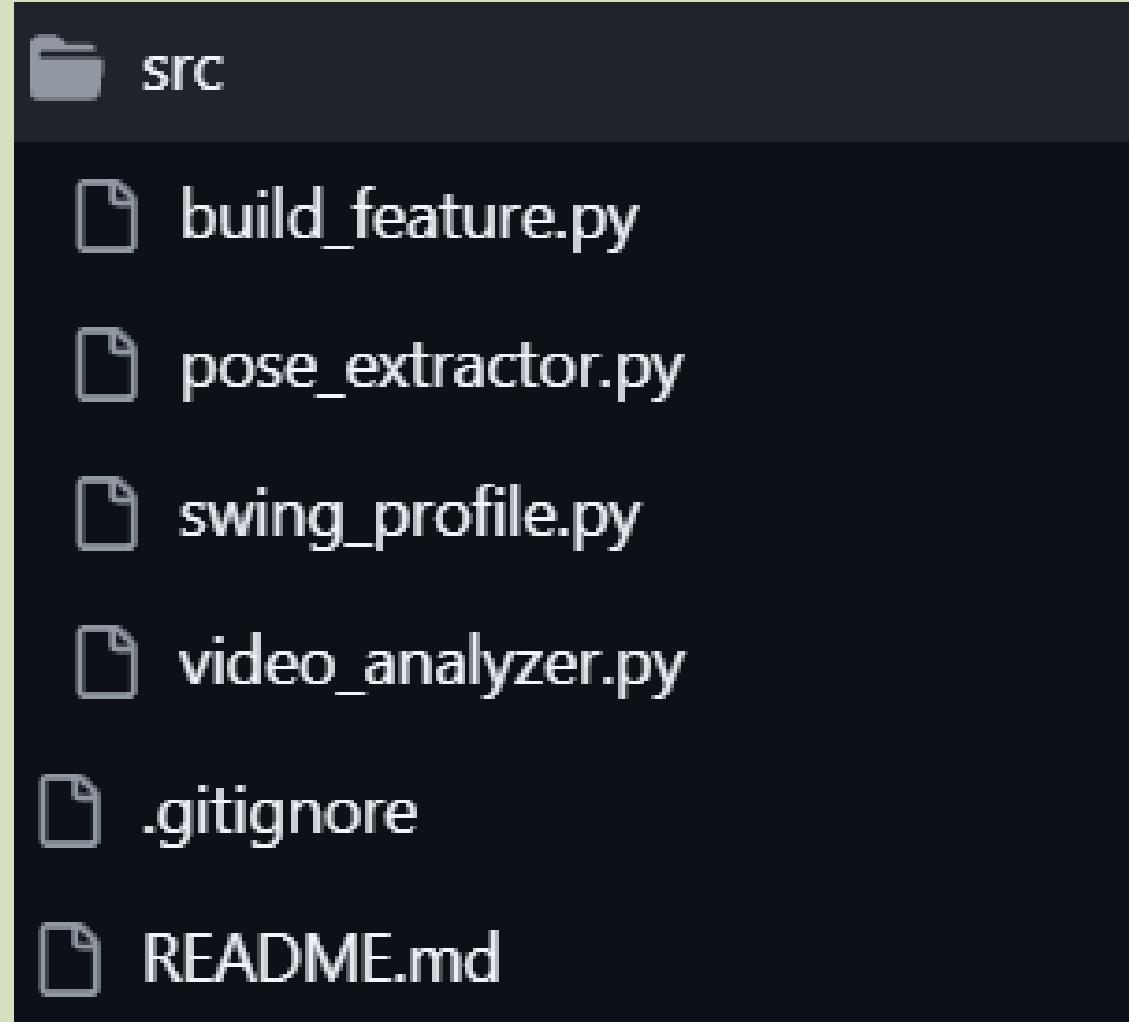
- Automate processing videos
- Labeling

Analysis and visualization:

- Measurements and calculations

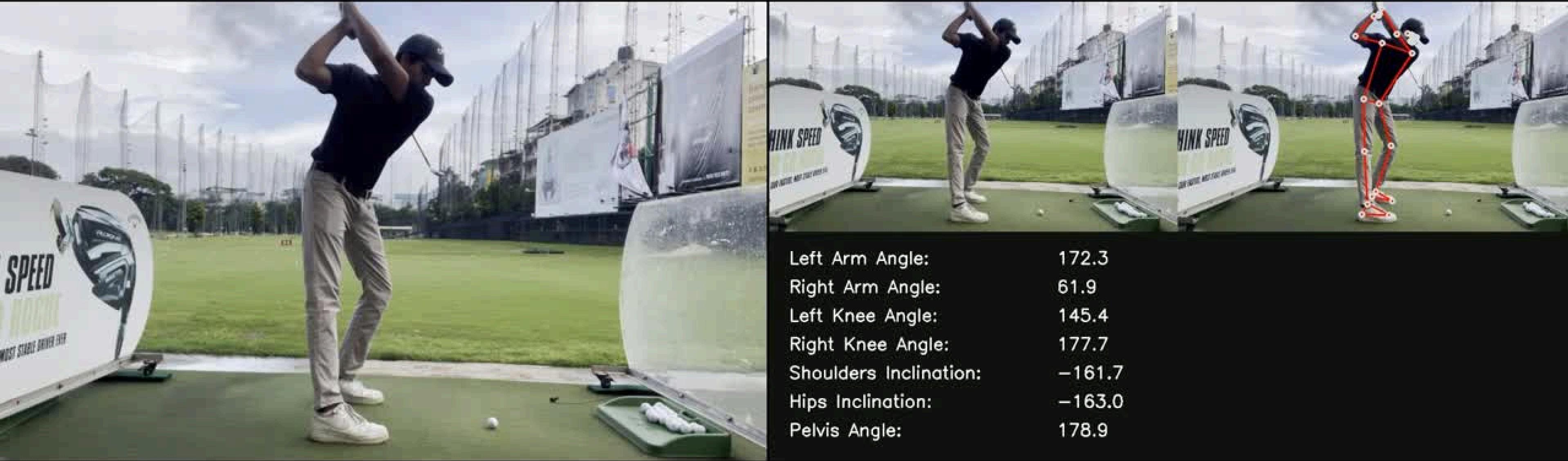
PRELIMINARY RESULTS

Through trials and countless errors, our team has decided and chosen the upcoming video as proof of our best and possible attempt.



video_time	shoulders	hips_incln	knee_angl	pelvis_ang	arm_angle	right_shou	right_shou	left_shoul	left_elbow	left_elbow	right_wrist	right_wrist	left_wrist	left_wrist
0:00:00	25.86728	20.8476	175.4575	179.813	177.0237	826	269	888	298	893	429	884	553	909
0:00:00	24.84932	16.17626	175.0017	178.9421	177.0275	822	269	887	298	893	429	883	552	909
0:00:00	25.31011	15.86308	173.7633	178.3695	177.0763	819	267	887	298	893	427	882	550	909
0:00:00	24.47756	15.5615	172.544	177.9085	177.4654	816	266	889	298	894	423	878	548	909
0:00:00	23.58205	14.72038	172.4087	177.4557	177.737	812	264	893	298	897	418	873	544	909
0:00:00	20.36502	13.27982	172.8409	175.6875	179.7467	807	264	900	297	905	413	865	531	908
0:00:00	18.93952	13.53033	172.8269	174.9144	177.4249	804	264	908	298	912	412	854	511	907
0:00:00	18.33973	11.08537	171.0511	174.7646	173.8288	801	263	912	298	915	411	841	491	901
0:00:00	17.80778	11.91431	170.1138	174.4799	167.4941	798	263	916	299	915	402	828	464	889
0:00:00	16.25738	10.76714	168.2099	173.7608	150.0503	793	264	920	299	914	390	827	443	869
0:00:00	14.893	10.46647	166.393	173.8327	116.239	791	266	923	299	913	384	812	396	843
0:00:00	13.85675	11.25155	164.1844	174.0717	73.24002	793	265	923	295	911	372	802	354	821
0:00:00	13.85675	11.86774	162.8846	174.2293	66.58597	794	265	924	295	896	354	782	338	800
0:00:00	13.98189	13.21629	161.8116	174.5056	55.85747	793	266	926	297	894	349	750	316	792





This is the original, and our results side by side. As shown in the video, a skeletal frame is attached to the athlete.



Left Arm Angle:	151.6
Right Arm Angle:	47.3
Left Knee Angle:	146.7
Right Knee Angle:	171.7
Shoulders Inclination:	-157.2
Hips Inclination:	-162.3
Pelvis Angle:	178.3



Left Arm Angle:	48.3
Right Arm Angle:	146.2
Left Knee Angle:	176.4
Right Knee Angle:	172.6
Shoulders Inclination:	0.8
Hips Inclination:	3.9
Pelvis Angle:	154.1

These are screenshots of a full swing's phases captured, measured, and assessed by our modules.



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THANK YOU

For Your Attention and
See You Next Time