

The 6th Human4D Workshop

March 31 2023@Strasbourg

Participants:

Aymen Merrouche (INRIA Rhone-Alpes)

Mohamed Daoudi, Emery Pierson, Sylvain Arguillere, Juan Carlos Alvarez Paiva
(CRISAL/Laboratoire Paul Painlevé Lille)

Hyewon Seo, Boyang Yu, Pierre Galmiche, Cédric Bobenrieth, Frédéric Cordier (ICube)

Florent Dupont, Florence Denis, Clément Lemeunier (Liris)

On-line participants:

Stefanie Wuhrrer, Maxime Génisson (INRIA Rhone-Alpes)

Guillaume Lavoué (Liris)

Liverables soumis: D1.1 & D2.2 (Feb 2023)

D1.1: DATASET SPECIFICATIONS

HUMAN4D: ACQUISITION, ANALYSIS AND SYNTHESIS OF
HUMAN BODY SHAPE IN MOTION
(ANR-19-CE23-0020)

CONTRIBUTORS:

EDMOND BOYER

INRIA Grenoble

COORDINATOR:

HYEWON SEO

CNRS-Univ. Strasbourg

OCTOBER 2022 (M36)

D2.2: ADAPTED 4D SHAPE REPRESENTATIONS & DNNs FOR HUMAN DYNAMIC SHAPE LEARNING

HUMAN4D: ACQUISITION, ANALYSIS AND SYNTHESIS OF
HUMAN BODY SHAPE IN MOTION
(ANR-19-CE23-0020)

CONTRIBUTORS:

**CLÉMENT LEMEUNIER, FLORENT DUPONT,
FLORENCE DENIS, EMERY PIERSON, MOHAMED
DAOUDI**

LIRIS-CNRS, CRISTAL-Univ. Lille

COORDINATOR:

HYEWON SEO

CNRS-Univ. Strasbourg

FEBRUARY 2023 (M40)

Liverable soumis: D1.2

D1.2: DATASET V0.5: FIRST 4D SHAPE DATA
FOR THE PROJECT PARTNERS

HUMAN4D: ACQUISITION, ANALYSIS AND SYNTHESIS OF
HUMAN BODY SHAPE IN MOTION
(ANR-19-CE23-0020)

CONTRIBUTORS:

EDMOND BOYER, MAXIME GENISSON, STEFANIE
WUHRER

Inria centre at the University Grenoble Alpes

COORDINATOR:

HYEWON SEO

CNRS-Univ. Strasbourg

MARCH 2023 (M41)

- **Données**

Marie Lorphelin" marie.lorphelin@inria.fr

- **Document à compléter & envoyé à l'ANR**

Description de données: séquences de mouvement homme / femme

vêtements femme:

- yellow ballerinas, jeans, flowery purple dress
- yellow ballerinas, jeans, green and pink flowery shirt
- pink flip-flops or cream high heels, short grey dress or long loose blue dress or long tight red dress
- white and pink sneakers, yellow shorts, purple T-shirt
- socks, dotted white leggings, dotted salmon tank top, pink swimming cap (minimal clothing)

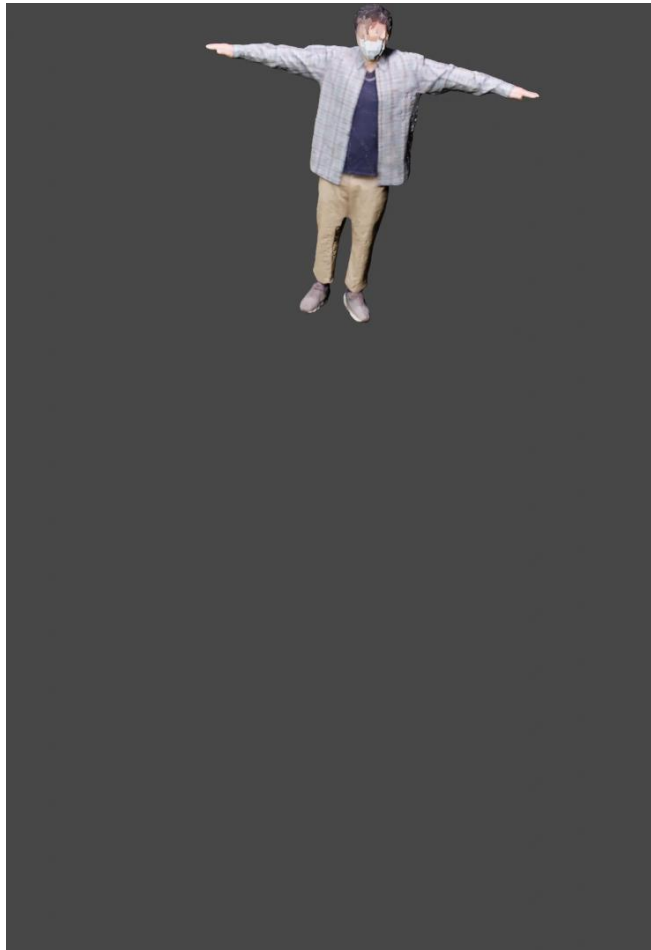
vêtements homme:

- black moccasins, dark costume trousers, grey and white stripped shirt, dark costume jacket
- black moccasins, jeans, grey and white stripped shirt
- black moccasins, dark costume trousers, grey and white stripped shirt, beige trench coat
- blue and white sneakers, beige shorts, orange T-shirt with picture
- socks, beige shorts, grey tank top, blue swimming cap (minimal clothing)

mouvements:

- a walk with last-second obstacle avoidance
- a walk with a U-turn
- a dance with both legs and arms wide motion
- hopscotch
- jump on the spot
- a jog/run across the studio
- a walk with a torso rotation to look backwards
- a simple walk across the studio

Nos 1ères données anonymisées



29 sequences d'un homme + 27 sequences d'une femme

2 sequences sont partagés (avant de l'anonymisation):

<https://1drv.ms/u/s!AoYTp-ny0NAjhFUQ-b10Y5rS9Y-z?e=IITvpN>

Données acuisse & reconstruits par **Laurence Boissieux** (INRIA Grenoble)
Anonymisation en 3D par **Noé Claudel** (M1 IMT Atlantic)

Nouvelle publications

- Filippo Principi, Stefano Berrettini, Claudio Ferrari, Naima Otberdout, Mohamed Daoudi, et al.. The Florence 4D Facial Expression Dataset. IEEE conference series on Automatic Face and Gesture Recognition, Jan 2023, Waikoloa, Hawaii, United States. <hal-03835780>
- Kaifeng Zou, Sylvain Faisan, Boyang Yu, Sébastien Valette, Hyewon Seo, 4D Facial Expression Diffusion Model, <http://arxiv.org/abs/2303.16611>
- La liste de publis du projet est consultable à:
<https://aap.agencerecherche.fr/suivibilan/2019/externes/Pages/SBEtiquetteSuiviScientifique.aspx?idProjet=78382>

Round table: News of partners

- **3DOR:** Aug 31- Sep 1 , 2023 @Lille
Plusieurs personnes du projet sont engagées, coordonnées par Mohamed
Overlap with IEEE RO-MAN (28-31 August)
- IEEE RO-MAN Workshop on **Surgical Robots, Robot vision, and 4D Human Models for Healthcare:** 28-31 August@Busan
Plusieurs membres de l'équipe MLMS de l'ICube, coordonnée par Hyewon

Livrables

Workpackages/tasks	Y1		Y2		Y3		Y4	
WP0: Project management	█	█	█	█	█	█	█	█
WP1: 4D Human data acquisition	█	█	█	█	█	█	█	█
T1.1. Specification on dataset	█							
T1.2. Data acquisition towards Dataset 0.5	█							
T1.3. Data acquisition towards Dataset 1.0	█							
T1.4. Dataset 2.0 and diffusion	█	█	█	█	█	█	█	█
WP2: A new spatio-temporal 4D human representation	█	█	█	█	█			
T2.1. Shape time super-resolution	█	█						
T2.2. Shape learning	█	█	█					
T2.3. Nonlinear shape space and temporal evolution representations	█	█						
T2.4. 4D Spectral representation	█	█	█	█	█			
WP3: 4D atlas construction: representations of multiple datasets of 4D data		█	█	█	█	█	█	
T3.1. Inter-subject correspondence		█	█	█	█	█		
T3.2. 3D Shapes sequences classification		█	█	█	█	█		
T3.3. Compact representations of multiple datasets				█	█	█	█	
WP4: Representative applications					█	█	█	█
T4.1. Shape and motion recovery/tracking					█	█	█	█
T4.2. Synthesis of new 4D human models					█	█	█	█

Livrables à venir: D1.2, D1.3

Workpackages/tasks	Y1		Y2		Y3		Y4	
WP0: Project management								
WP1: 4D Human data acquisition								
T1.1. Specification on dataset								
T1.2. Data acquisition towards Dataset 0.5								
T1.3. Data acquisition towards Dataset 1.0								
T1.4. Dataset 2.0 and diffusion								

- **D1.3 Dataset v1.0: Dataset partly made available to the general public**

=> ?? 2023 (M??)

Livrables à venir: D3.1, D3.2

WP3: 4D atlas construction: representations of multiple datasets of 4D data T3.1. Inter-subject correspondence T3.2. 3D Shapes sequences classification T3.3. Compact representations of multiple datasets		■	■	■	■	■	
		■	■	■	■	■	
			■	■	■	■	
				■	■	■	

- **D3.1** 4D human dataset v0.5 with inter-subject (spatio-temporal) correspondence established
=> June 2023 (M44)
- **D3.2** 4D human dataset v1.0 with inter-subject (spatio-temporal) correspondence established
=> June 2023 (M44)

La prochaine reunion?

- **19th ou 20th October, à Lyon (ou ailleurs)**