

SUPPLEMENTAL DOCUMENT

FOR THE “OU-ISIR GAIT DATABASE, LARGE POPULATION DATASET”

Last modified: 2013 1/15

TABLE OF CONTENTS

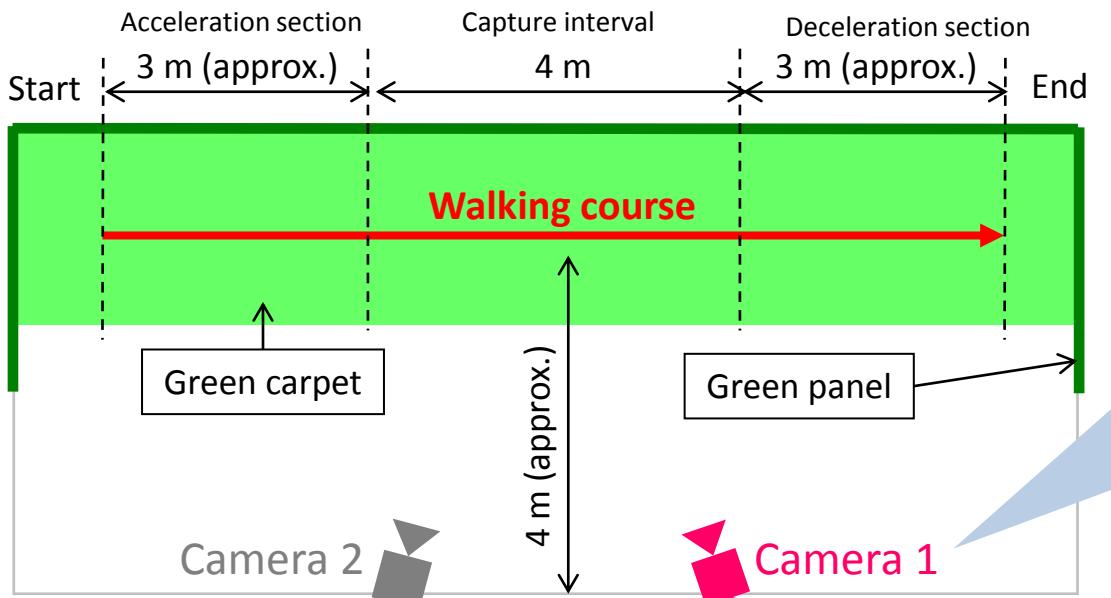
- Introduction
- Data collection
- Silhouette creation process
- Definition of subset

INTRODUCTION

- ***The “OU-ISIR Gait Database, Large Population Dataset”***
is a set of silhouette sequence of normal walking
 - Walking condition
 - Indoor
 - Empty-handed
 - Subject's own clothing (including hat) and footwear
 - No variation in walking condition of each subject
 - Advantage
 - Large population : Over 4,000 subjects
 - Gender balance : Ratio of males to females is close to 1
 - Whole generation : 1 to 94 years old
 - Silhouette quality : High (visually checked and modified by manual)
 - Primary purpose
 - Performance evaluation of gait recognition with statistical reliability
 - Development of gait-based age and gender estimation algorithm

DATA COLLECTION

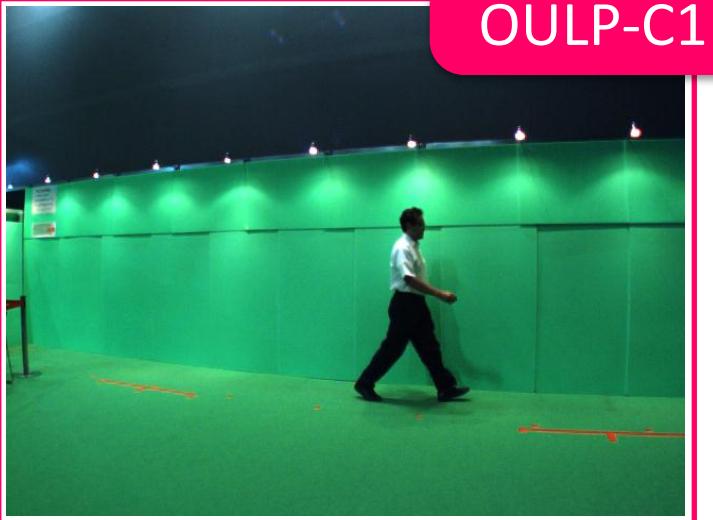
GAIT CAPTURE SYSTEM



OLUP-C2



OLUP-C1



DATA COLLECTION

GAIT CAPTURE EVENT

- In conjunction with demonstration in five exhibitions

Exhibition	Term	#Days	#Visitors (approx.)
Outreach activity in DIM (Dive Into the Movie) project (DIM2009)	March 2009	3	1,600
5th Regional Disaster and Crime Prevention Expo (RDCPE2010)	June 2010	2	280
Open campus at Osaka university 2010 (OU-OC2010)	Aug 2010	1	70
Open campus at Osaka university 2011 (OU-OC2011)	Aug 2011	1	90
Outreach activity in CREST project (CREST2011)	Aug 2011	5	2,000

- Each subject

- Signed release agreement for research-purpose use
- Provided gender and age information

DATA COLLECTION

EXAMPLE OF CAPTURED GAIT IMAGE FROM CAMERA 1

DIM2009



RDCPE2010



OU-OC
2010/2011

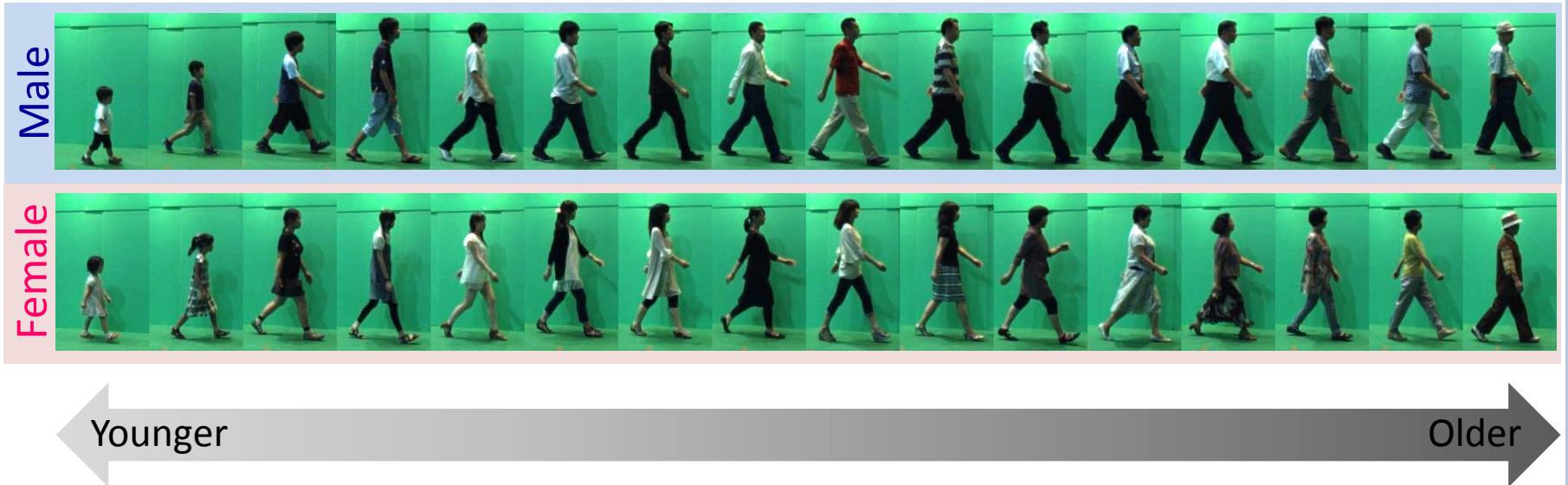


CREST2011



DATA COLLECTION

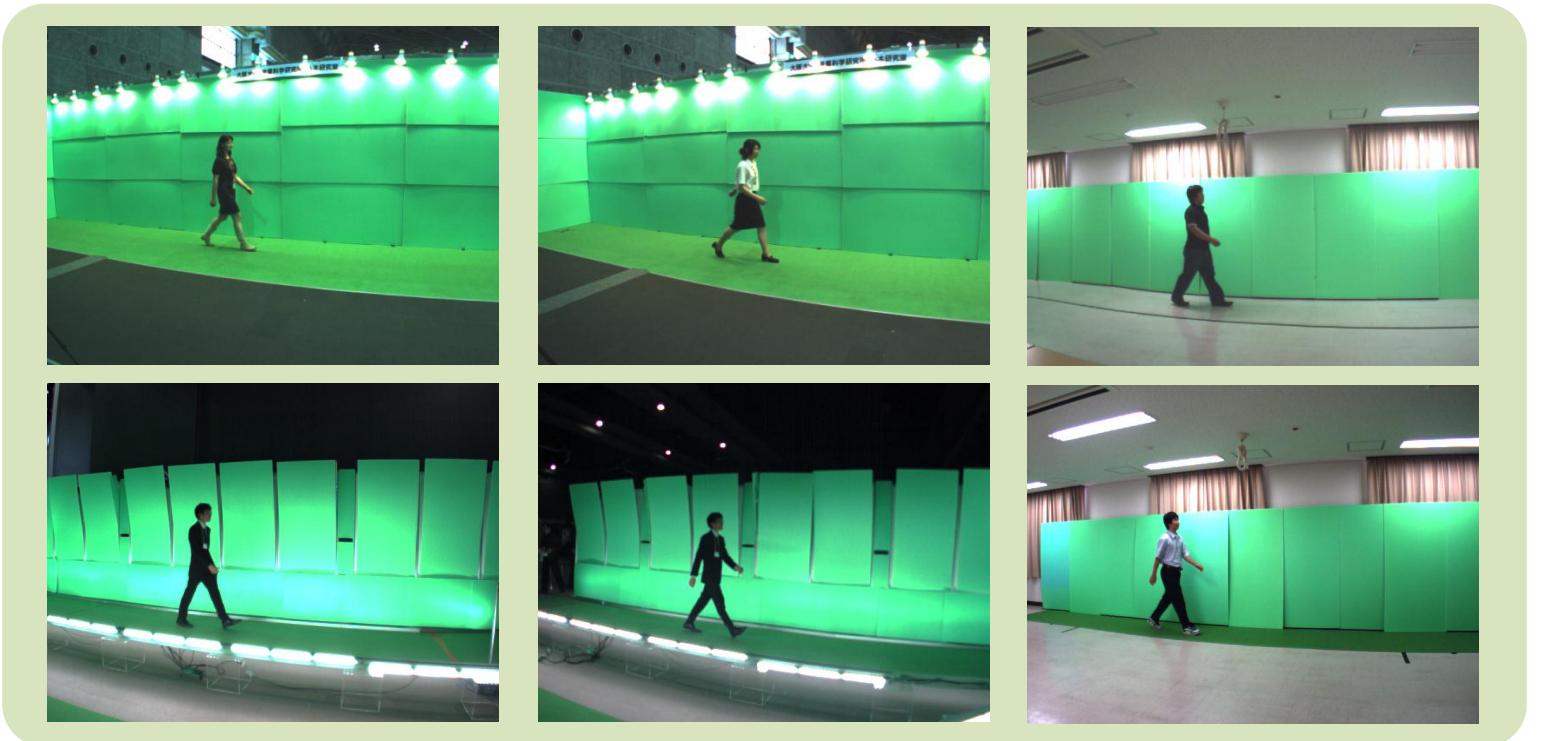
EXAMPLES OF SUBJECT



SILHOUETTE CREATION PROCESS

CORRECTION OF CAMERA ROTATION

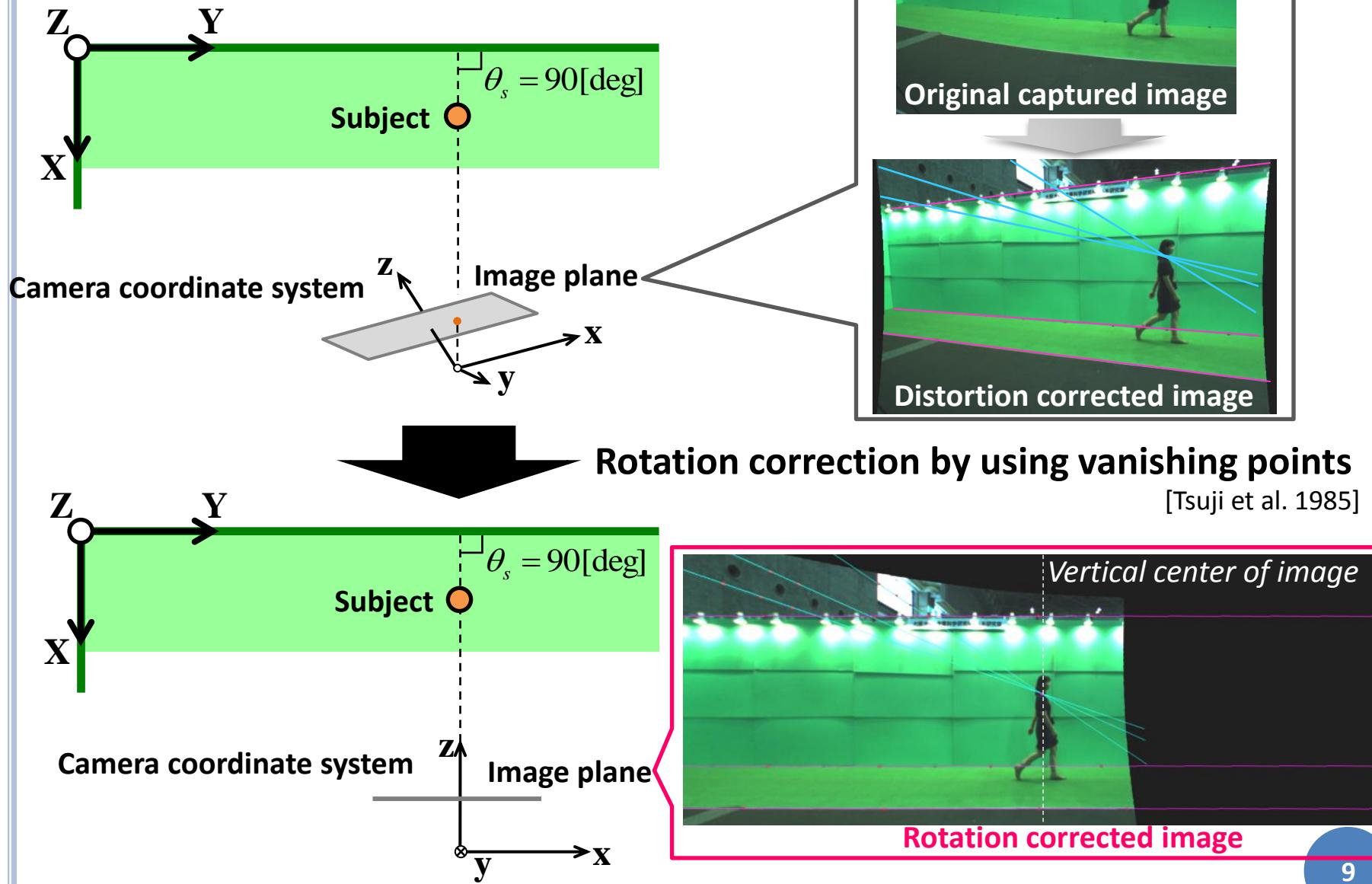
- Camera pose variation in each event



**Camera pose normalization
(correction of camera rotation)**

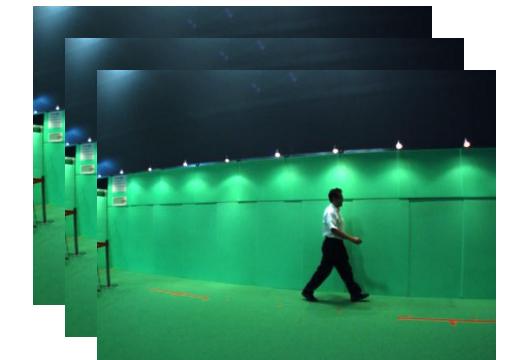
SILHOUETTE CREATION PROCESS

CORRECTION OF CAMERA ROTATION



SILHOUETTE CREATION PROCESS

CREATION OF SIZE-NORMALIZED SILHOUETTE



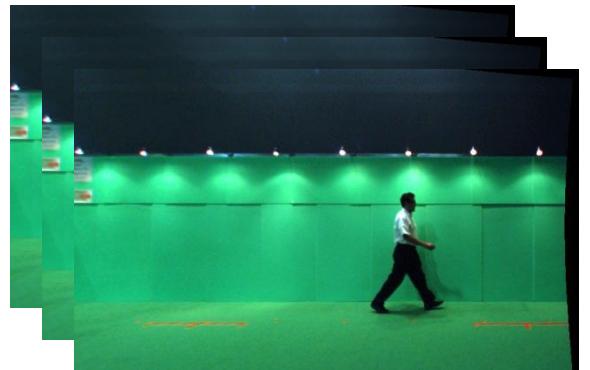
Original sequence

Background subtraction

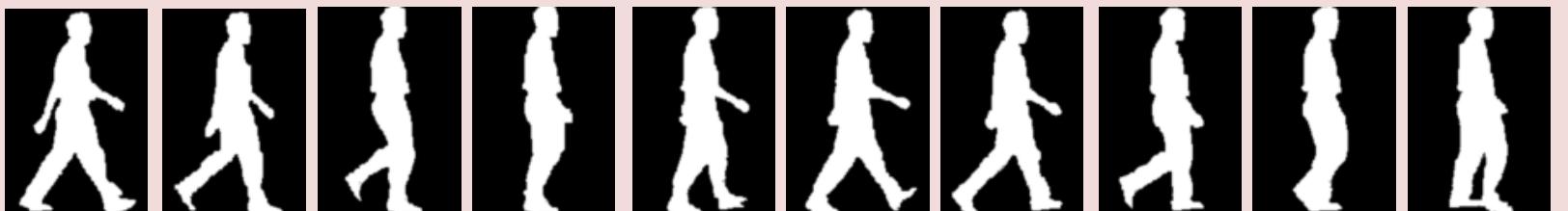
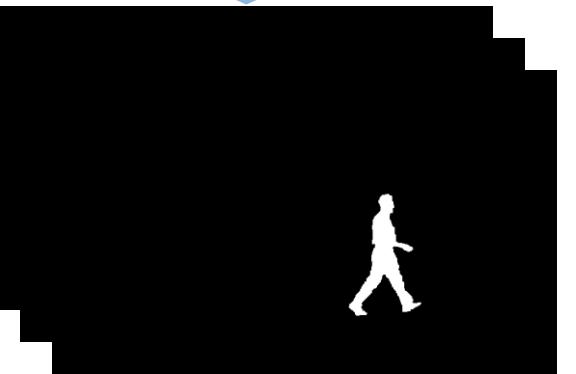


Silhouette sequence

Rotation correction



Registration and size-normalization



Normalized silhouette sequence (88x128 pix)

Manual denoising
if necessary

DEFINITION OF SUBSET

SEQUENCE NUMBER-BASED SUBSET

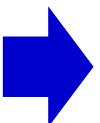
- Two primal subsets

- 2 sequences/subject : **OULP-C1[version no.]**-**A**



Performance evaluation of gait recognition

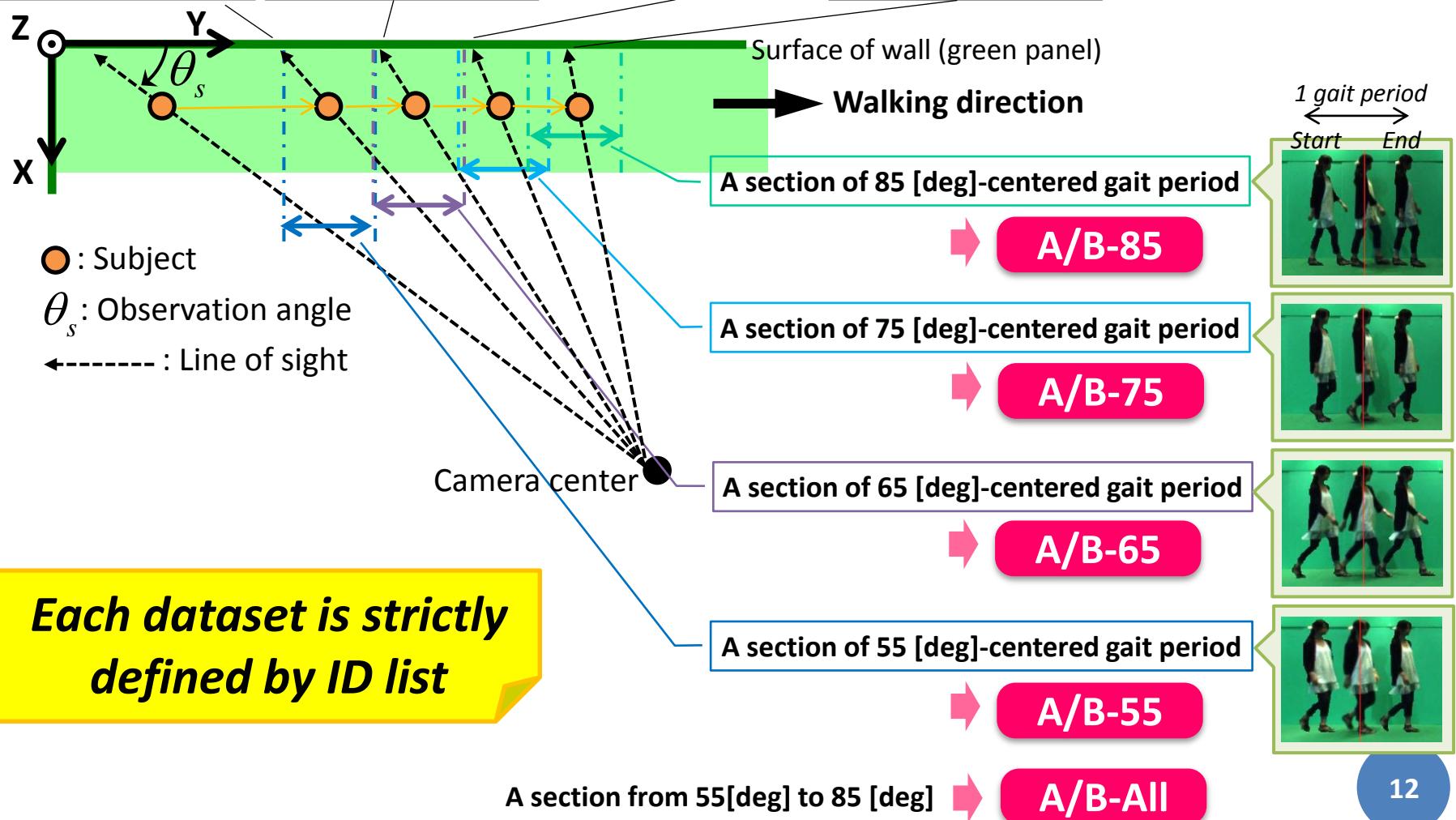
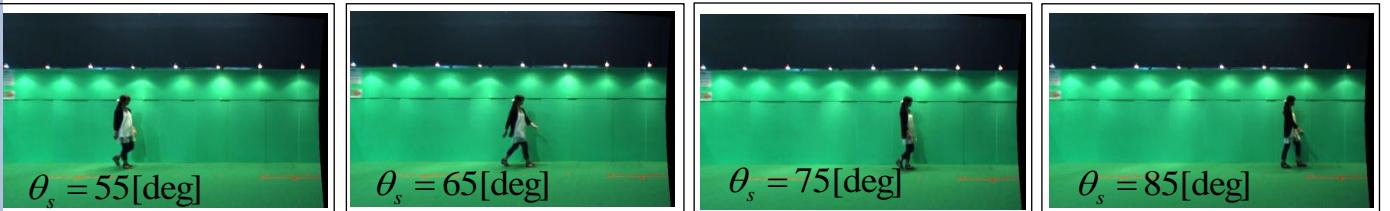
- 1 sequence/subject : **OULP-C1[version no.]**-**B**



Investigation of gait-based age/gender estimation

DEFINITION OF SUBSET

OBSERVATION ANGLE-BASED SUBSET



Be sure to read the original paper

H. Iwama, M. Okumura, Y. Makihara, and Y. Yagi,

“The OU-ISIR Gait Database Comprising the Large Population Dataset and Performance Evaluation of Gait Recognition”, IEEE TIFS, Vol.7, No.5, pp.1511-1521, Oct., 2012

Authors

