



[CJ대한통운] 로봇SA 경력직 채용 1차 면접

4/3(금) 09:00



VIRGINIA TECH
DEPARTMENT OF COMPUTER SCIENCE
SOFTWARE INNOVATIONS LAB

PHD STUDENT

KIJIN AN(안기진)



Timelines



2003-
2007



ECE B.E(4 years)
A.I Lab, 이재호 교수

- Undergrad Internship
- Agent System
(Robotics) Software Engineering



M.S (2 years)
MCNL Lab, 송황준 교수

- Networking,
Multimedia (codec)
- WLAN, Zigbee

2009



Assistant Manager
System Eg Team
(3.5 years)

- 병역특례
- WiBro Base Station
- RF/Optic Repeaters

2012



Researcher (3 years)
Robotics Research,
최종석 책임연구원

- Sensor Net & HRI
- 50억 정부과제 실무
(개발/관리) 총괄

2015



Computer Science,
PhD(15.8~), Software
Innovation Lab, Eli Tilevich

- Software Engineering
- Distributed System

(Expected in)
2020.12



Research Topics

- **Distributed Systems**
 - Networking (MS in POSTECH and SK telesys)
 - Networking + “*Robotics*” (KIST)
 - Networked Programs + “*Software Engineering*” (PhD in Virginia Tech)
- **Software Engineering**
 - Automated *Maintaining/Evolving/Optimizing* Software
 - Software Reuse, Mismatch in Design time & Runtime (e.g. cross-platforms)
 - State-of-the-art *Program Analysis* and *Transformation* techniques



Dissertation Contributions

- New refactoring: “Client Insourcing” (**WWW’ 20**)
 - *Declarative approach, fuzzing, and idempotent execution*
- Demonstrating the value and utility of “Client Insourcing”
 - **Optimizing/Evolving/Maintaining** Distributed Applications
 1. Bug Fixes (**ICWE’ 19**)
 2. Optimizing granularity of Distributed apps (**SANER’ 20**)
 3. Optimizing Web execution in Runtime (submitted to **Mobicom’ 20**)

Publication in PhD course



5

1

4

↑

No.	Paper		Conference	Area	
1.	Client Insourcing		Web Conference 2020 (19%, 217/1129)	Web Engineering	1st Author/2
2.	D-Goldilocks		SANER 2020 (21%, 42/199)	Software Engineering	1st Author/2
3.	Catch&Release (CanDoR)		ICWE 2019 (25%, 26/106)	Web Engineering	1st Author/2
4.	Project1	Paper1	MobileSoft 2018 (Nominated for Best Paper)	Software Engineering	1st Author/3
5.	Project2	Paper1	GPCE 2018 (Invited to Journal)	Software Engineering	2nd Author/3
6.		Paper2	Journal of Computer Language	Software Engineering	2nd Author/3
7.	Doctoral Symposium	Paper1	Web Conference 2020	Web Engineering	1st Author/1
8.		Paper2	ICWE 2019	Web Engineering	1st Author/1
-	Comm. Web Vessels (Submitted)			Distributed Systems	
-	Edge Insourcing (Ongoing)			Distributed Systems	VIR



Projects



	Projects	기간	Supported By & Co-work
Virginia Tech	CyberSecurity Education (Heap Spraying Attack)	2년	GTA at VT
	Partitioning critical codes for PX4 modules over OS optee(Drone)	2년	NSF
한국과학기술연구원 Robotics Research	Implementation of Technology for identification , behavior , and location of human based on sensor network fusion (12.09~15.07) http://www.robot-intelligence.kr/index.php/3W_for_HRI	3년	산업통상자원부, KEIT, KU,KHU, PCU, POSTECH
POSTECH	Simulation for 802.15.4a based indoor location recognition	7개월	DGIST
	Sensor Net MAC , routing Actors supporting Ptolemy Tool	9개월	DGIST, UC Berkeley
SK 텔레시스	LTE Optic/RF Repeater: MiBOS , TRIO-LM/M	9개월	SK telecom
	WIP-300 (WiFi+IPPBX) , eIBS (WiFi + RF Repeater)	18개월	SK telink/telecom
	Outdoor WiBro Base Station: Odcell , IBcell	8개월	SK telecom

센서네트워크 기반 휴먼인식 시스템



- 5년 과제(KIST, POSTECH, KU, KHU,...), 50억 정부출연금(산업통상자원부)
- 역할: Researcher & 프로젝트 매니저(실무담당자)
 - 1차년도 ~ 4차년도(kickoff): 교실환경 자동화/지능화
 - 데모 및 통합: 출석체크(1차년), 과제물배포(2차년), 자율학습진행(3차년)
 - 3D Simulator, Leg-detection & human follower
 - 해외컨퍼런스 10편 (비디오, short 버전 포함)

P.I 최종석박사: 이달의 산업기술상(신기술 부문)



신기술 부문 - 3월 장관상

최종석 한국과학기술연구원(KIST) 로봇연구단장(사진)은 로봇의 다중센서를 활용해 사람의 위치와 행동, 신원 정보 등을 정확하게 인식하는 기술을 개발했다. 최 단장 연구팀은 실제 환경에서 로봇이 최대 30명의 신원과 행위 및 위치정보를 인식하는 '다중센터융합기반 휴먼인식' 기술을 개발했다.

이 기술이 적용된 로봇은 센서를 활용해 사용자가 누구이며 어디에 있는지, 어떤 행동을 하는지 등을 알아낸다. 얼굴 검출률은 97%, 인식 정확도는 99%에 달한다.

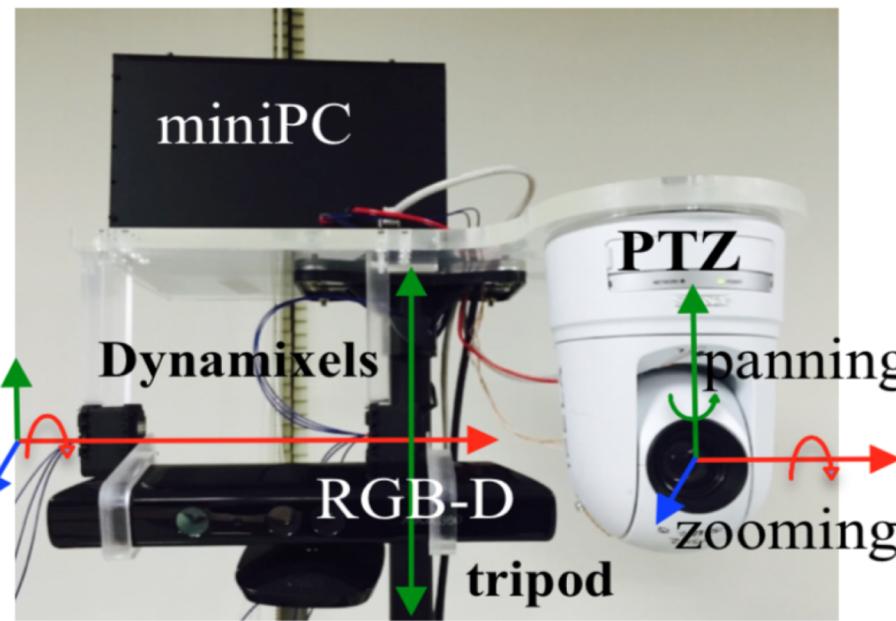
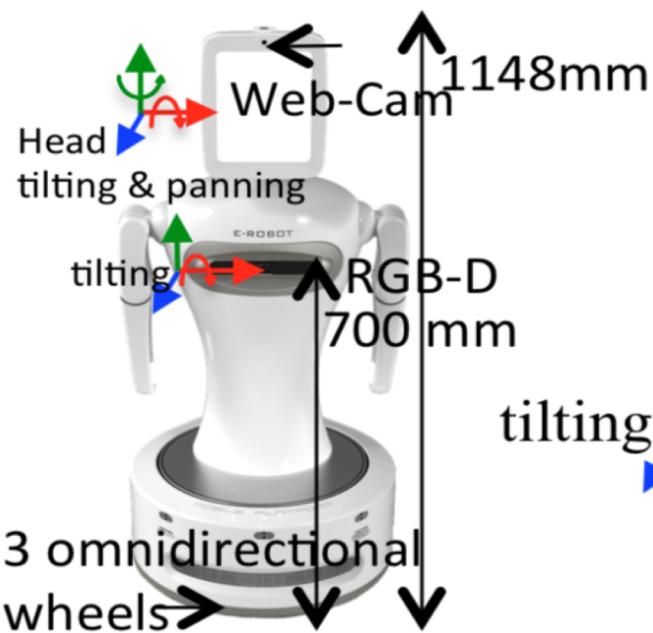
Thank you!

Q & A

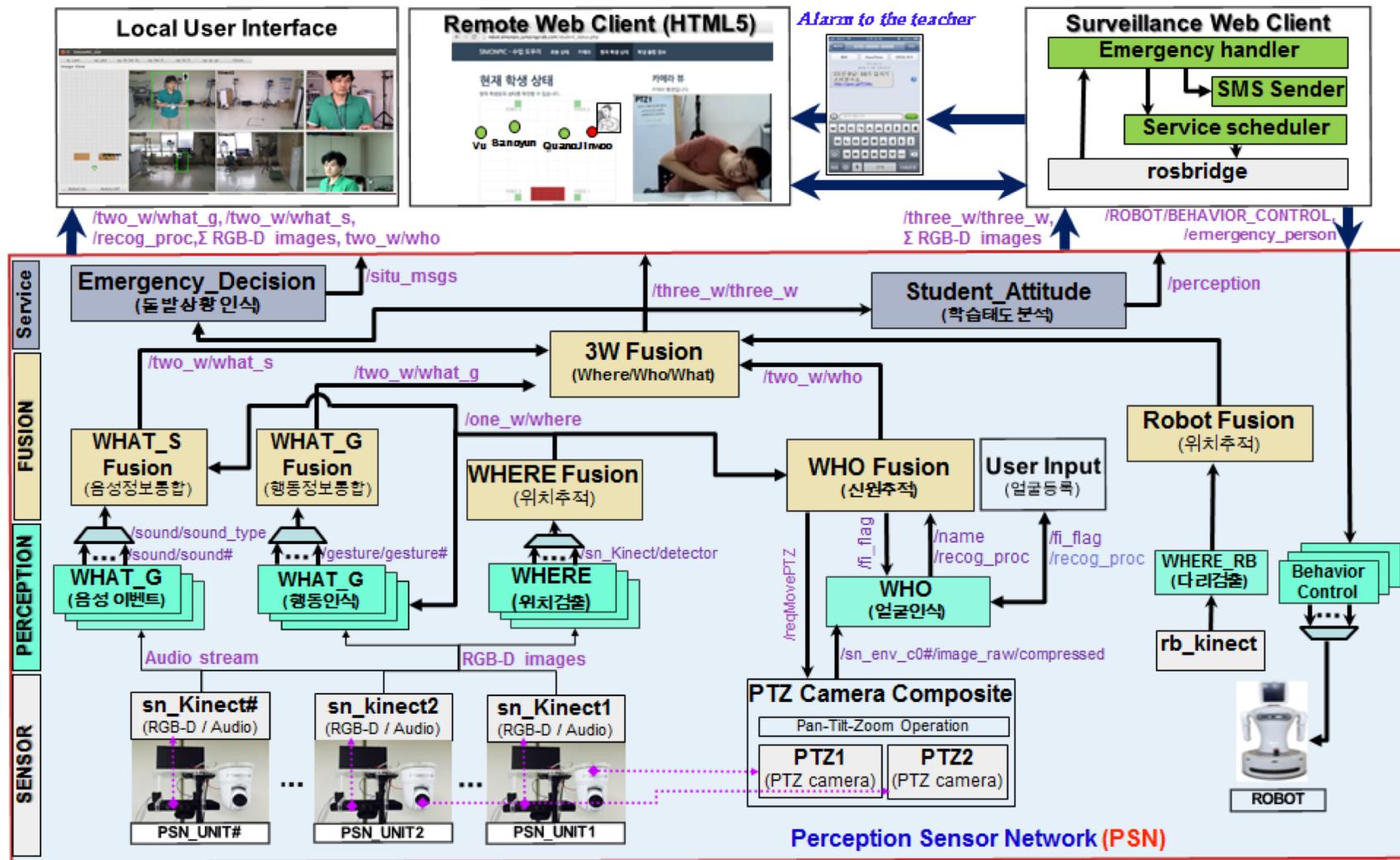
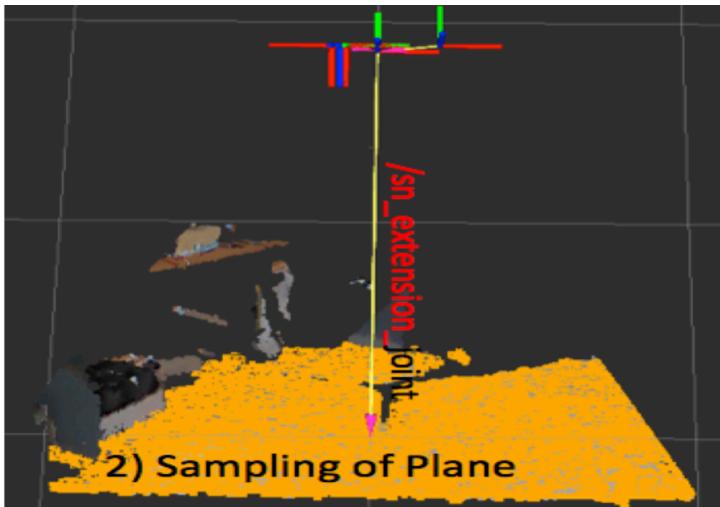
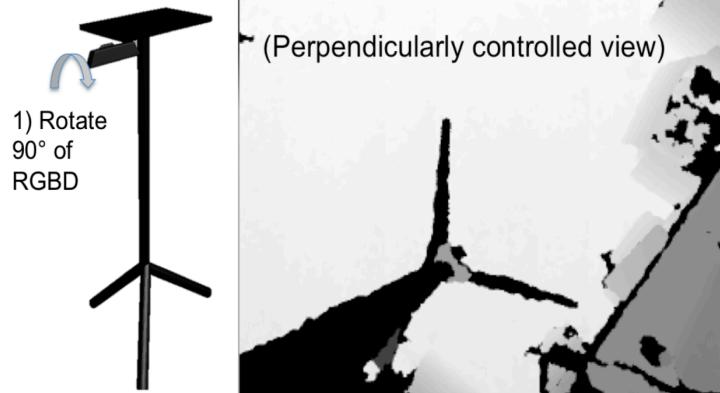
(Next:
로봇관련 프로젝트
참고자료)



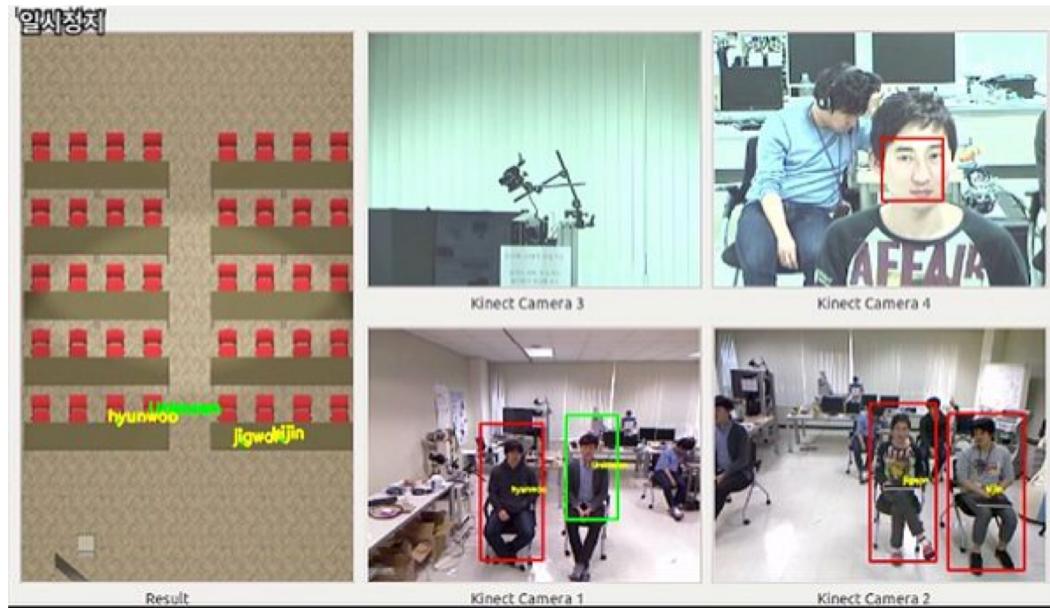
Appendix: 센서네트워크 기반 휴먼인식 시스템



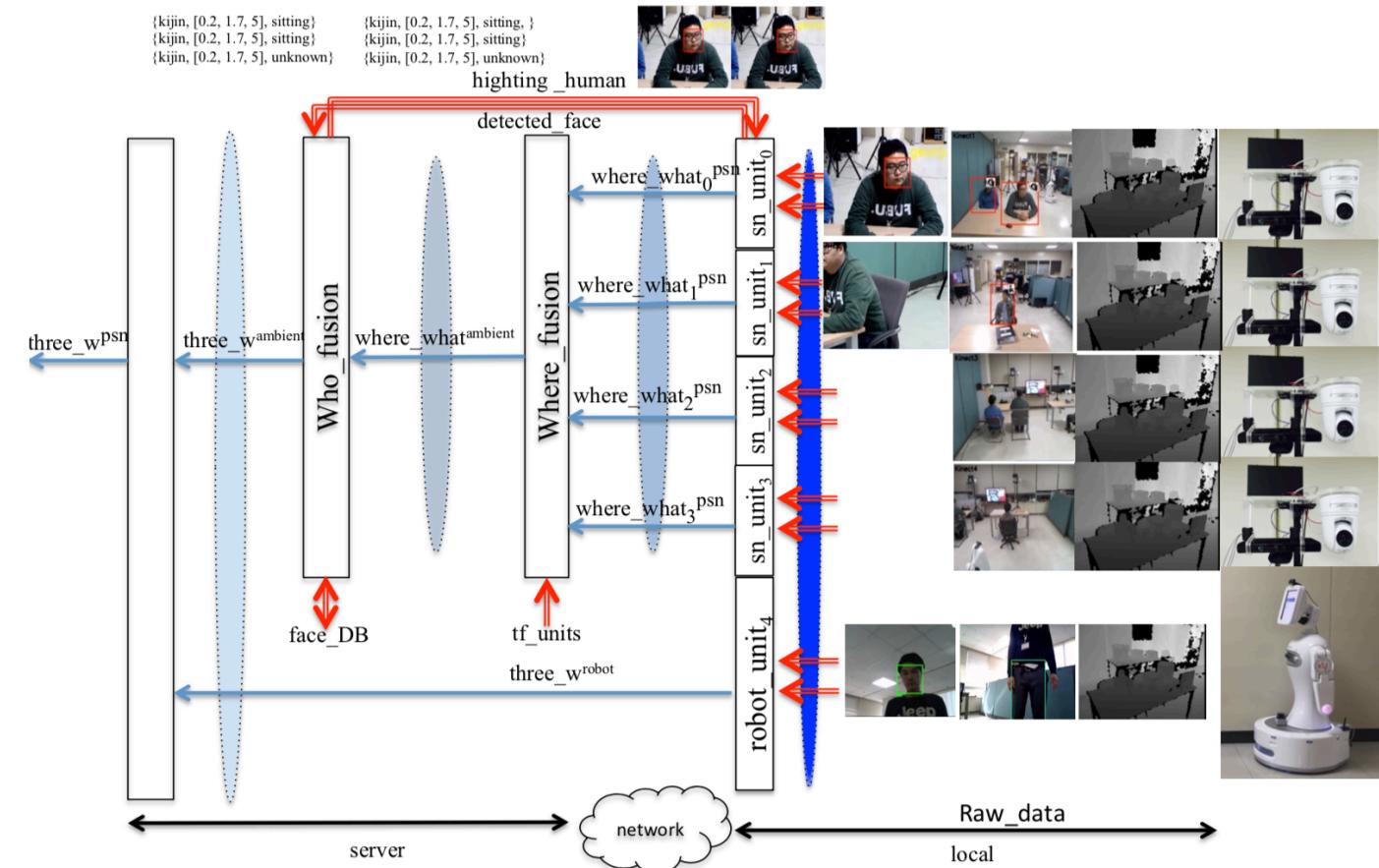
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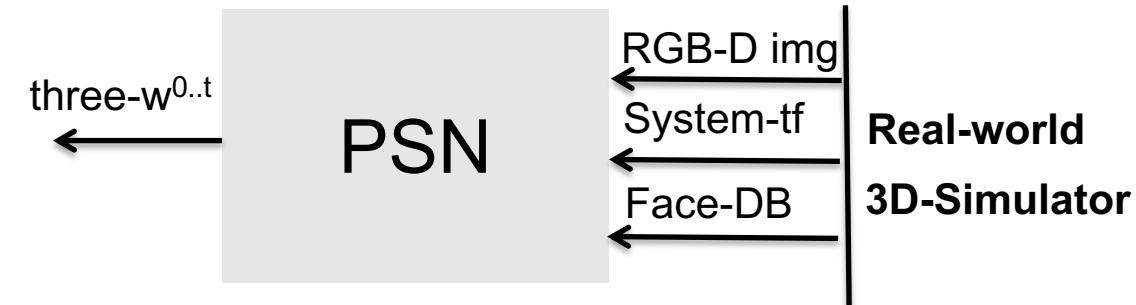
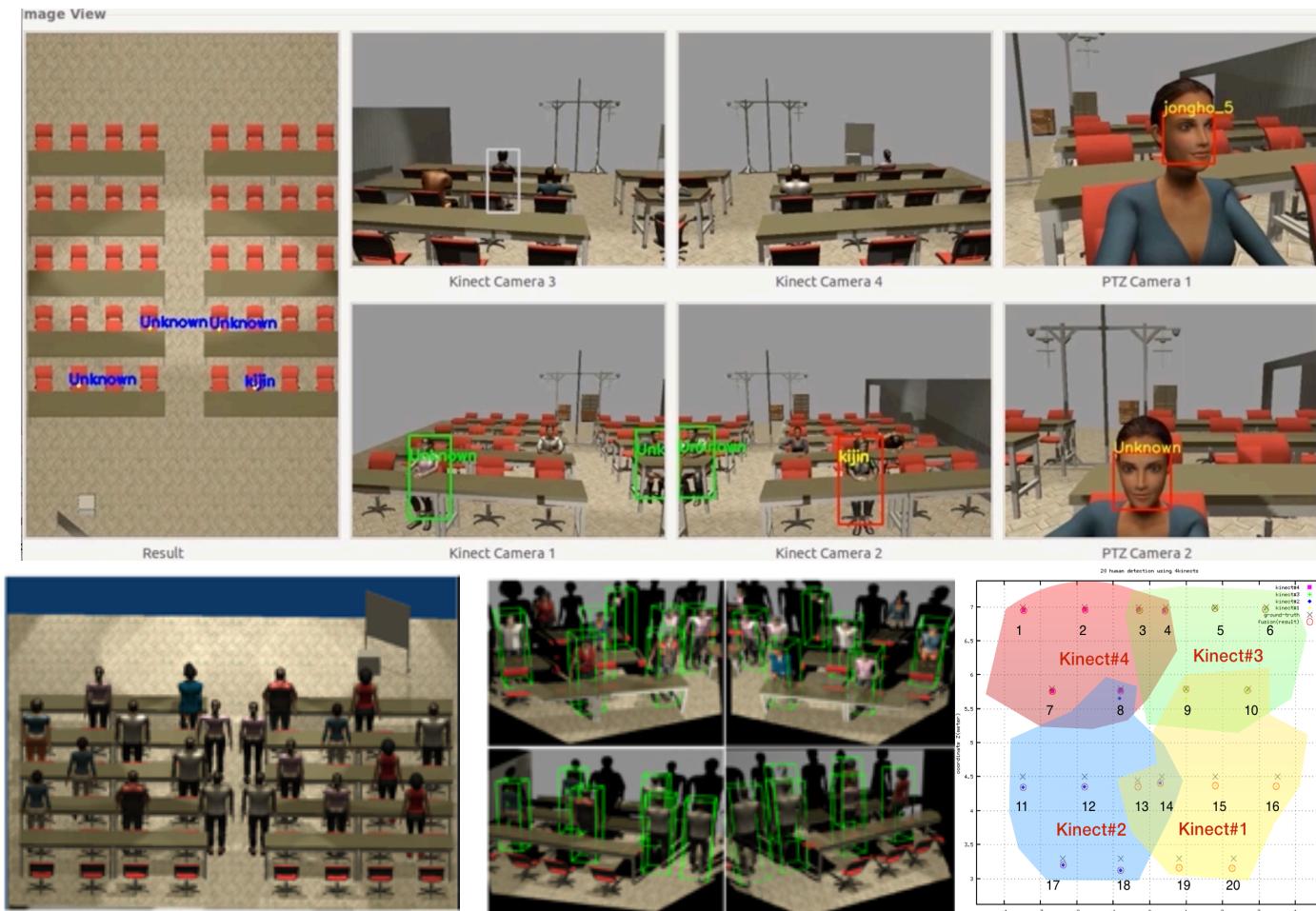
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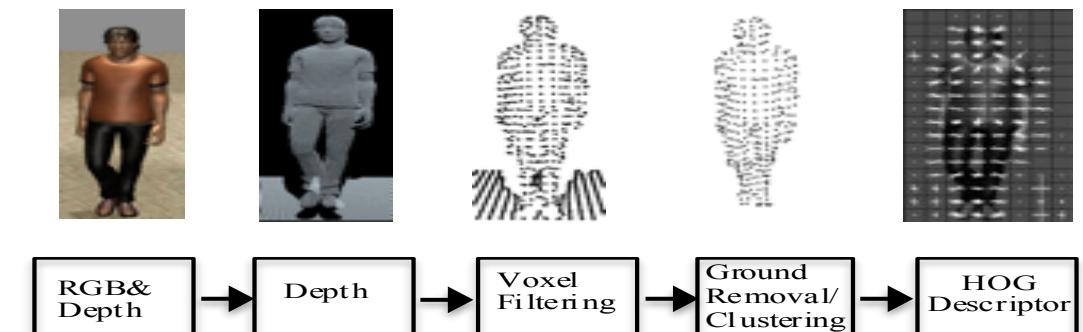
3W(who, what, where) fusion



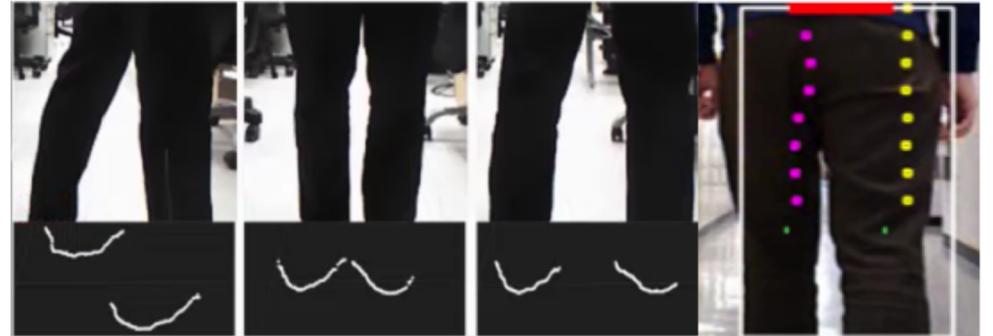
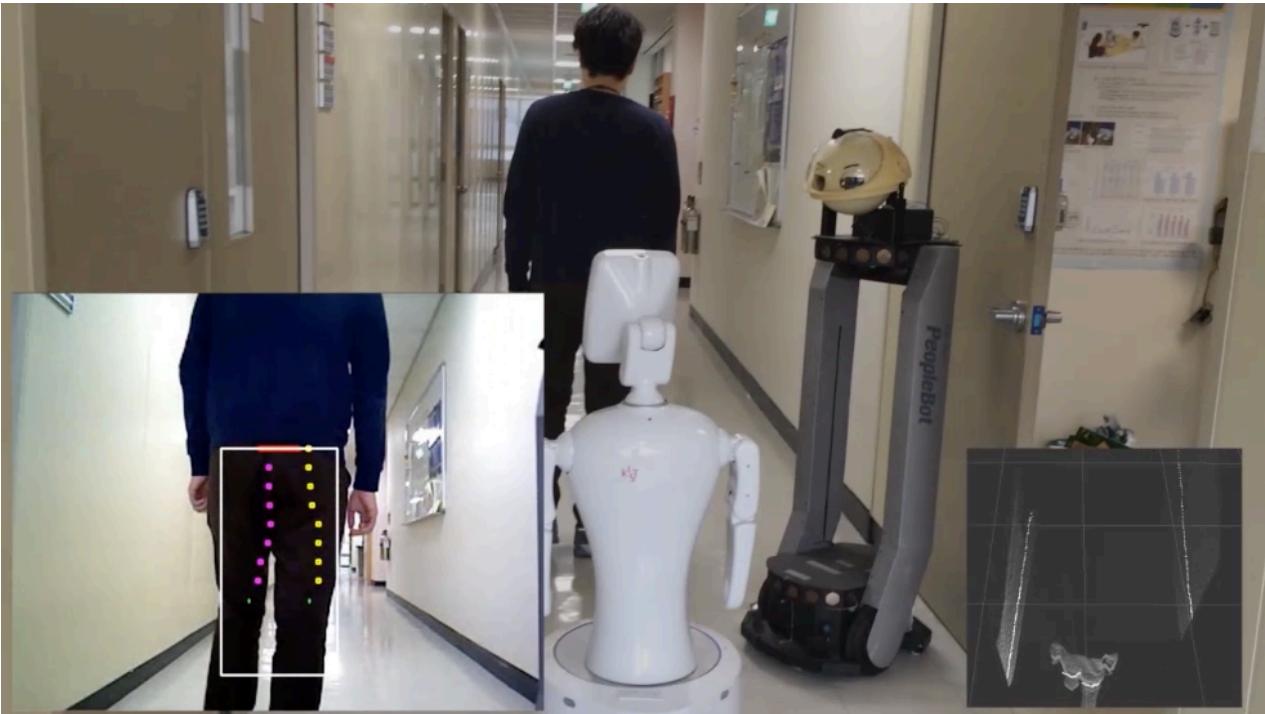
Appendix: 3D Simulation (RO-MAN '14,'15)



results of the process are summarized in Fig 5.



Appendix: Leg Detection & Human Follower (HRI'15)

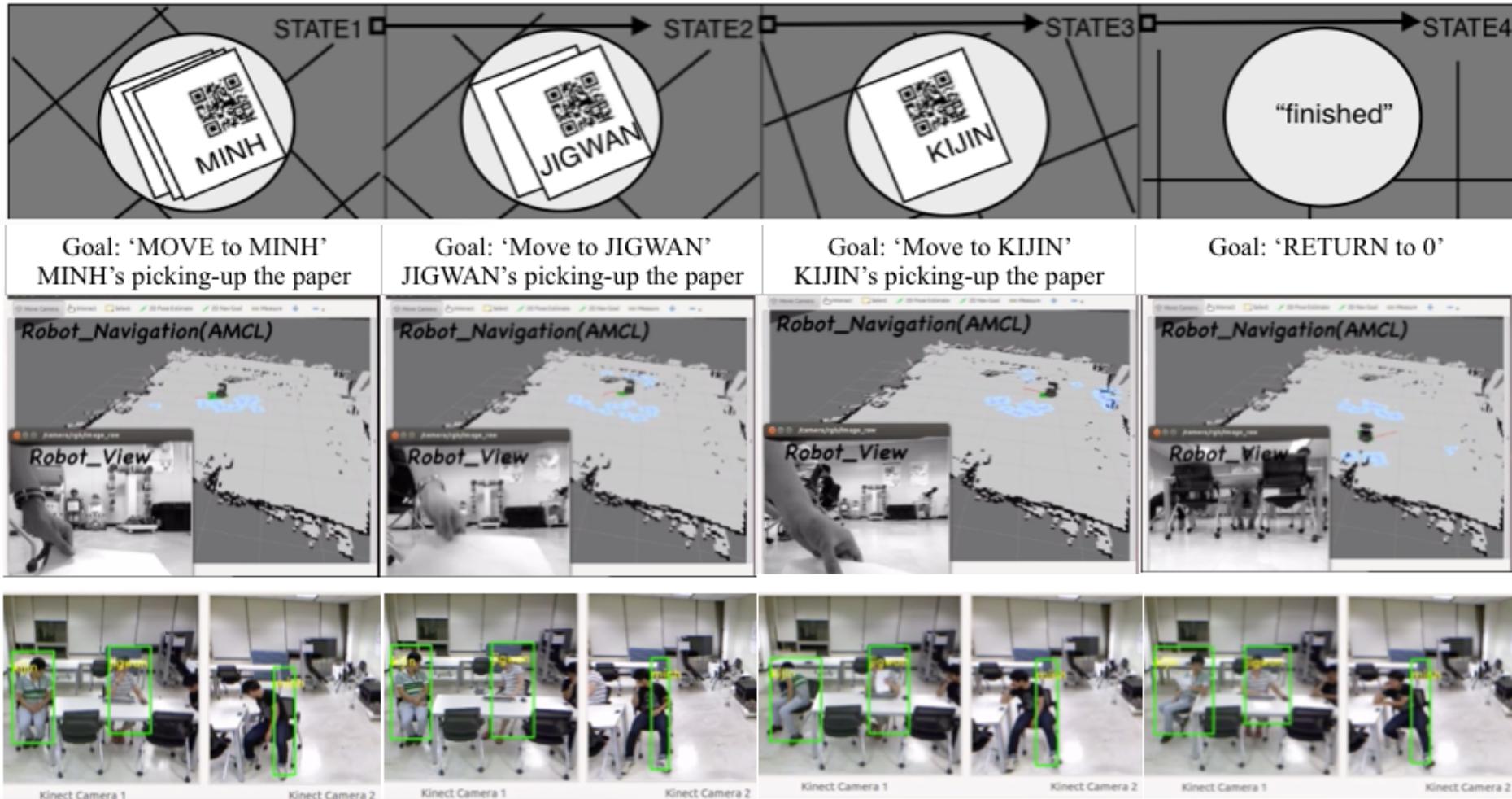


Step 2. Masking with Low-Body-Part in 3-Dimensions

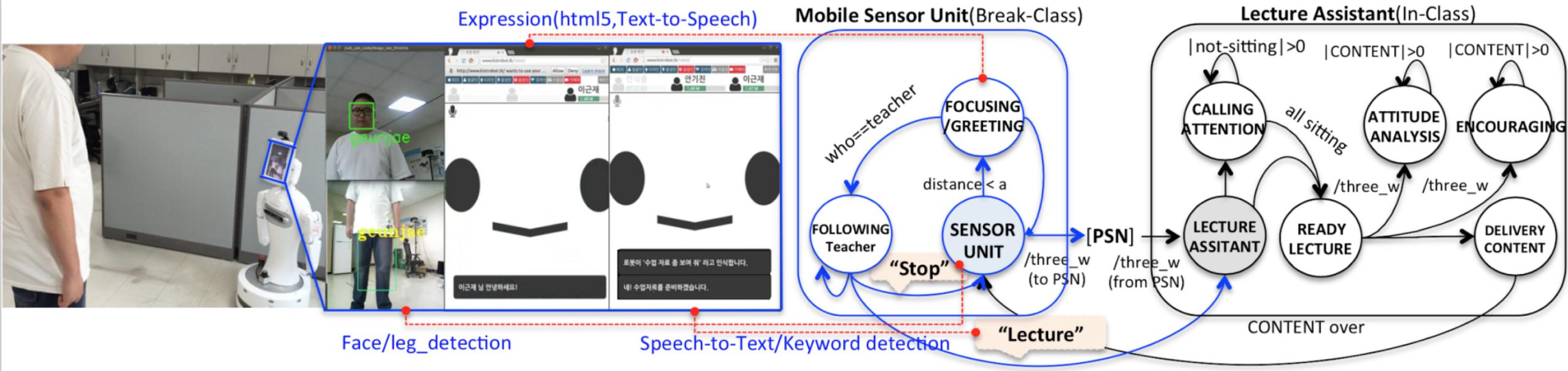
- Segmentation by Euclidean Clustering
- Repeat until up to 0.7m
- Both legs should be connected at the highest point.

A 3D point cloud visualization of a person's legs, with green and yellow colors applied to specific points, likely representing the results of the masking step.

Appendix: 과제물배포(2차년도 Demo)



Appendix: 자율학습진행 (3차년도 Demo)



<https://drive.google.com/file/d/1QA5bPaVXynyV4KLIT0IBdNaKNvuEFHXj/view?usp=sharing>

Appendix: Trusted Execution for low cost ARM architecture

