



# [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



No.	Paper		Conference	Area	
1.	Client Insourcing		<b>Web Conference 2020</b> <b>(19%, 217/1129)</b>	Web Engineering	1st Author/2
2.	D-Goldilocks		<b>SANER 2020</b> <b>(21%, 42/199)</b>	Software Engineering	1st Author/2
3.	Catch&Release (CanDoR)		<b>ICWE 2019</b> <b>(25%, 26/106)</b>	Web Engineering	1st Author/2
4.	Project1	Paper1	<b>MobileSoft 2018</b> <b>(Nominated for Best Paper)</b>	Software Engineering	1st Author/3
5.	Project2	Paper1	<b>GPCE 2018</b> <b>(Invited to Journal)</b>	Software Engineering	2nd Author/3
6.		Paper2	<b>Journal of Computer Language</b>	Software Engineering	2nd Author/3
7.	Doctoral Symposium	Paper1	<b>Web Conference 2020</b>	Web Engineering	1st Author/1
8.		Paper2	<b>ICWE 2019</b>	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 <b>codes</b> for PX4 modules over OS optee( <b>Drone</b> )	2년	NSF
한국과학기술연구원 Robotics Research	Implementation of Technology for <b>identification</b> , <b>behavior</b> , and <b>location</b> of human based on <b>sensor network fusion</b> (12.09~15.07) <a href="http://www.robot-intelligence.kr/index.php/3W_for_HRI">http://www.robot-intelligence.kr/index.php/3W_for_HRI</a>	3년	산업통상자원부, KEIT, KU,KHU, PCU, POSTECH
POSTECH	Simulation for <b>802.15.4a</b> based <b>indoor location recognition</b>	7개월	DGIST
	Sensor Net <b>MAC</b> , <b>routing</b> Actors supporting <b>Ptolemy Tool</b>	9개월	DGIST, UC Berkeley
SK 텔레시스	LTE Optic/RF Repeater: <b>MiBOS</b> , <b>TRIO-LM/M</b>	9개월	SK telecom
	<b>WIP-300</b> (WiFi+IPPBX) , <b>eIBS</b> (WiFi + RF Repeater)	18개월	SK telink/telecom
	Outdoor WiBro Base Station: <b>Odcell</b> , <b>IBcell</b>	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

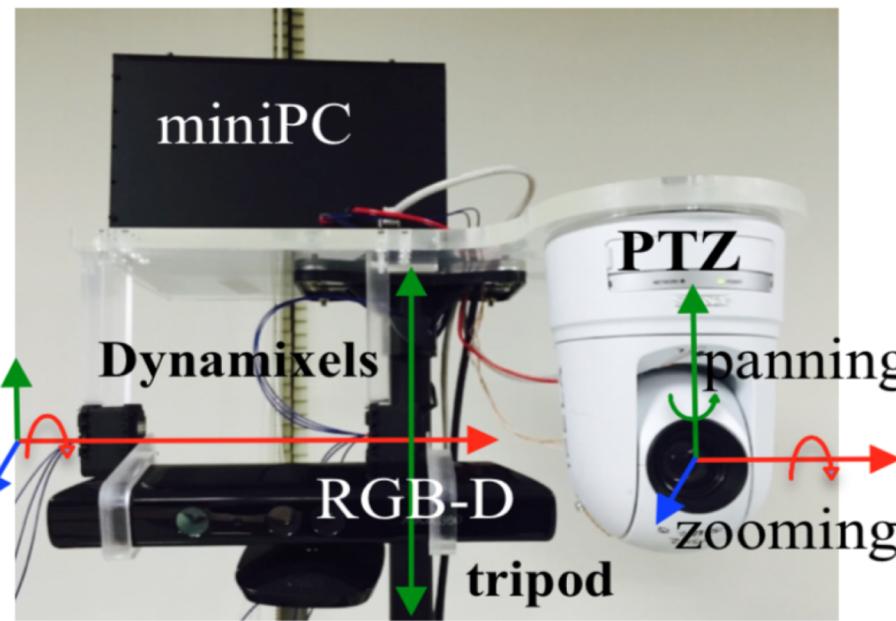
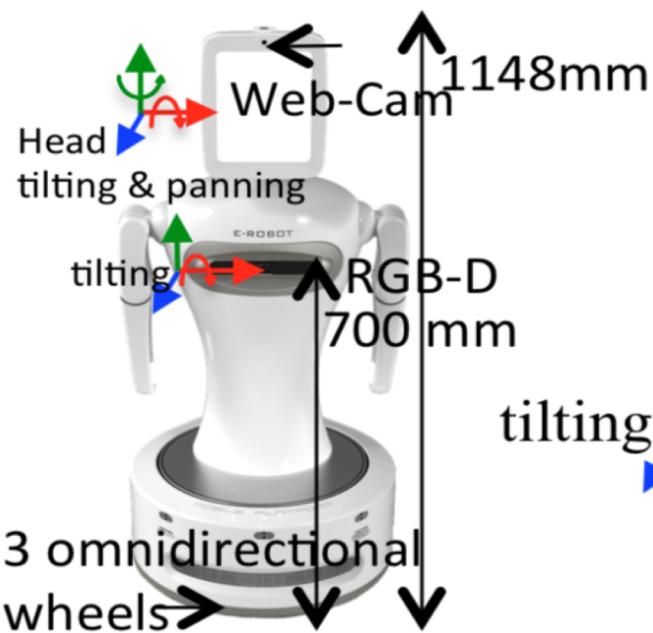
최종석 한국과학기술연구원(KIST) 로봇연구단장(사진)은 로봇의 다중센서를 활용해 사람의 위치와 행동, 신원 정보 등을 정확하게 인식하는 기술을 개발했다. 최 단장 연구팀은 실제 환경에서 로봇이 최대 30명의 신원과 행위 및 위치정보를 인식하는 '다중센터융합기반 휴먼인식' 기술을 개발했다.

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

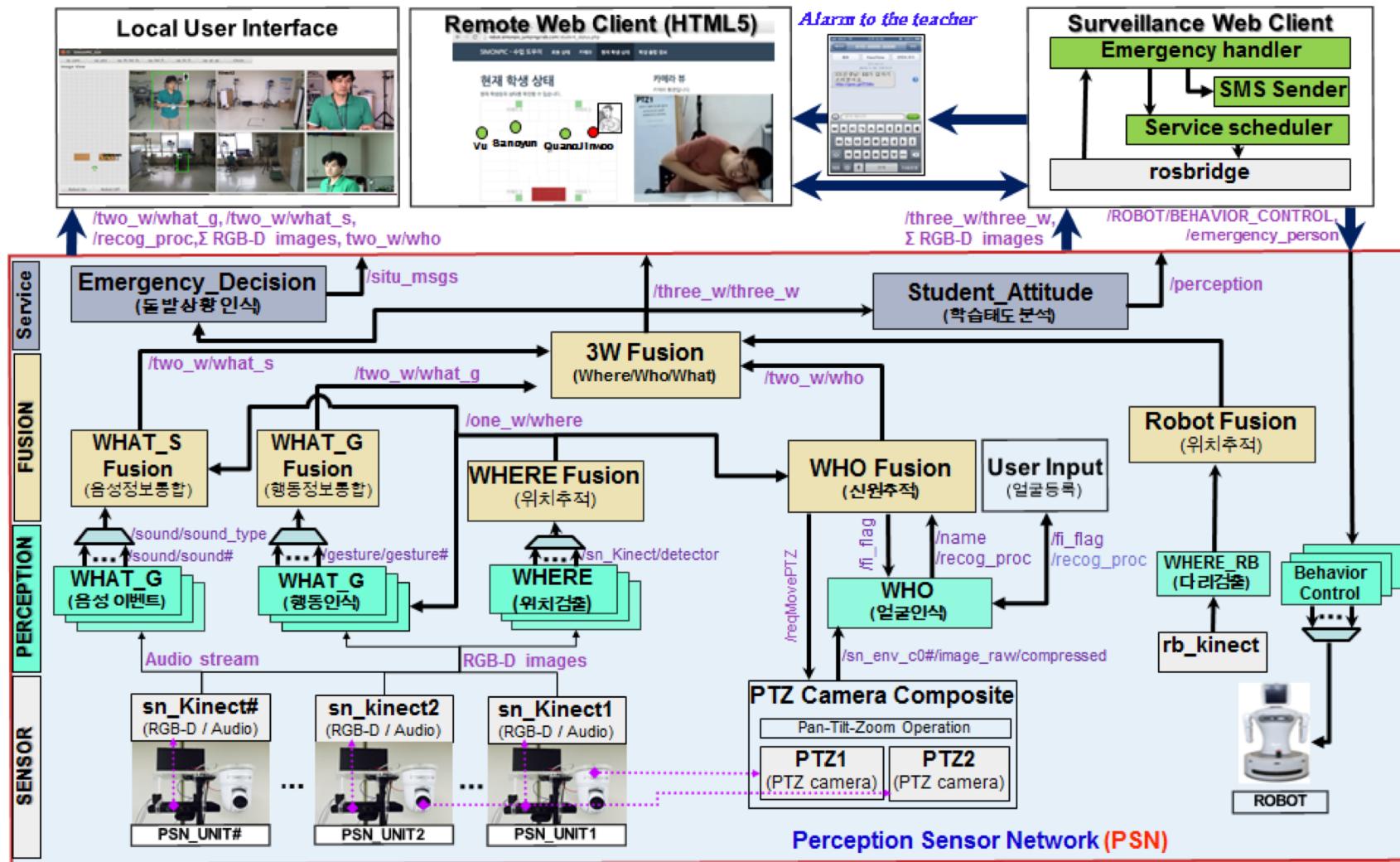
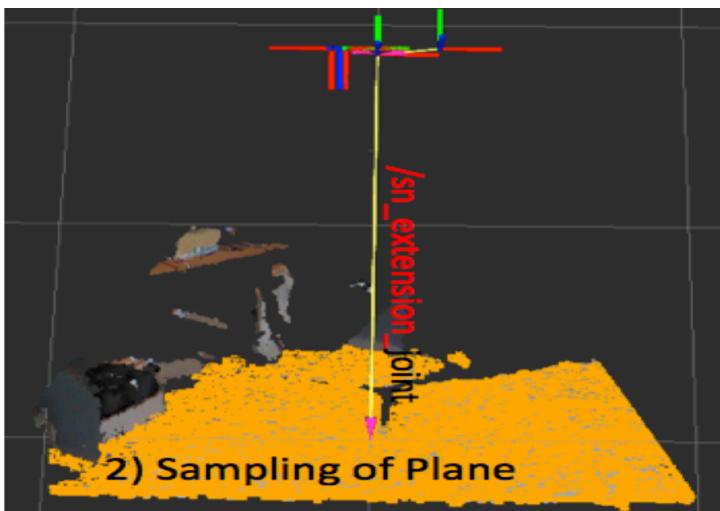
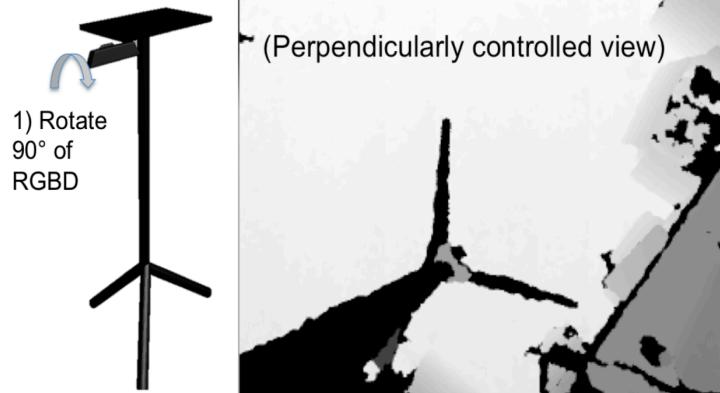
# Thank you!

## Q & A

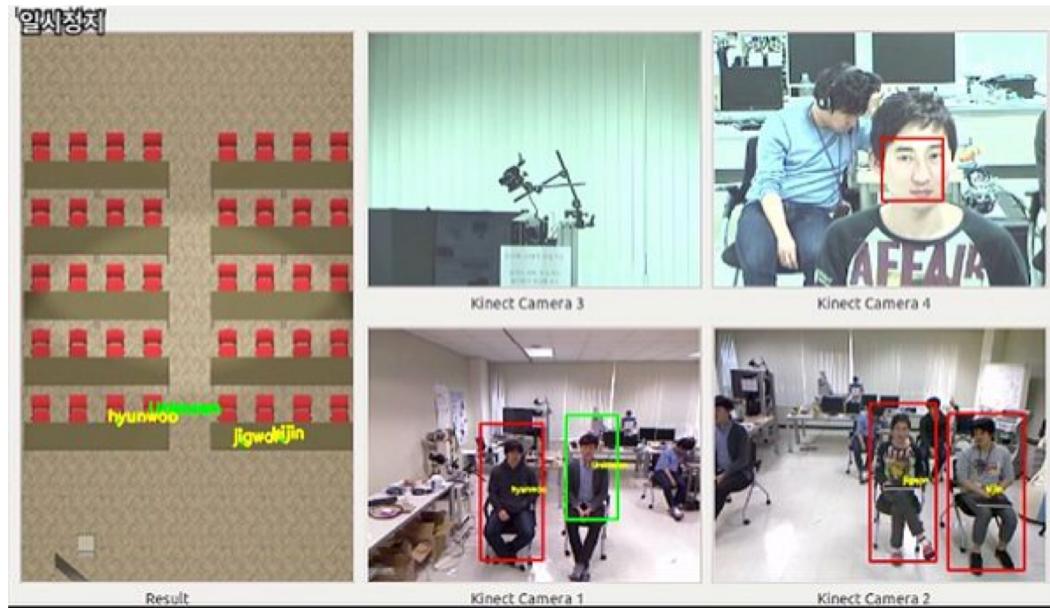
# Appendix: 센서네트워크 기반 휴먼인식 시스템



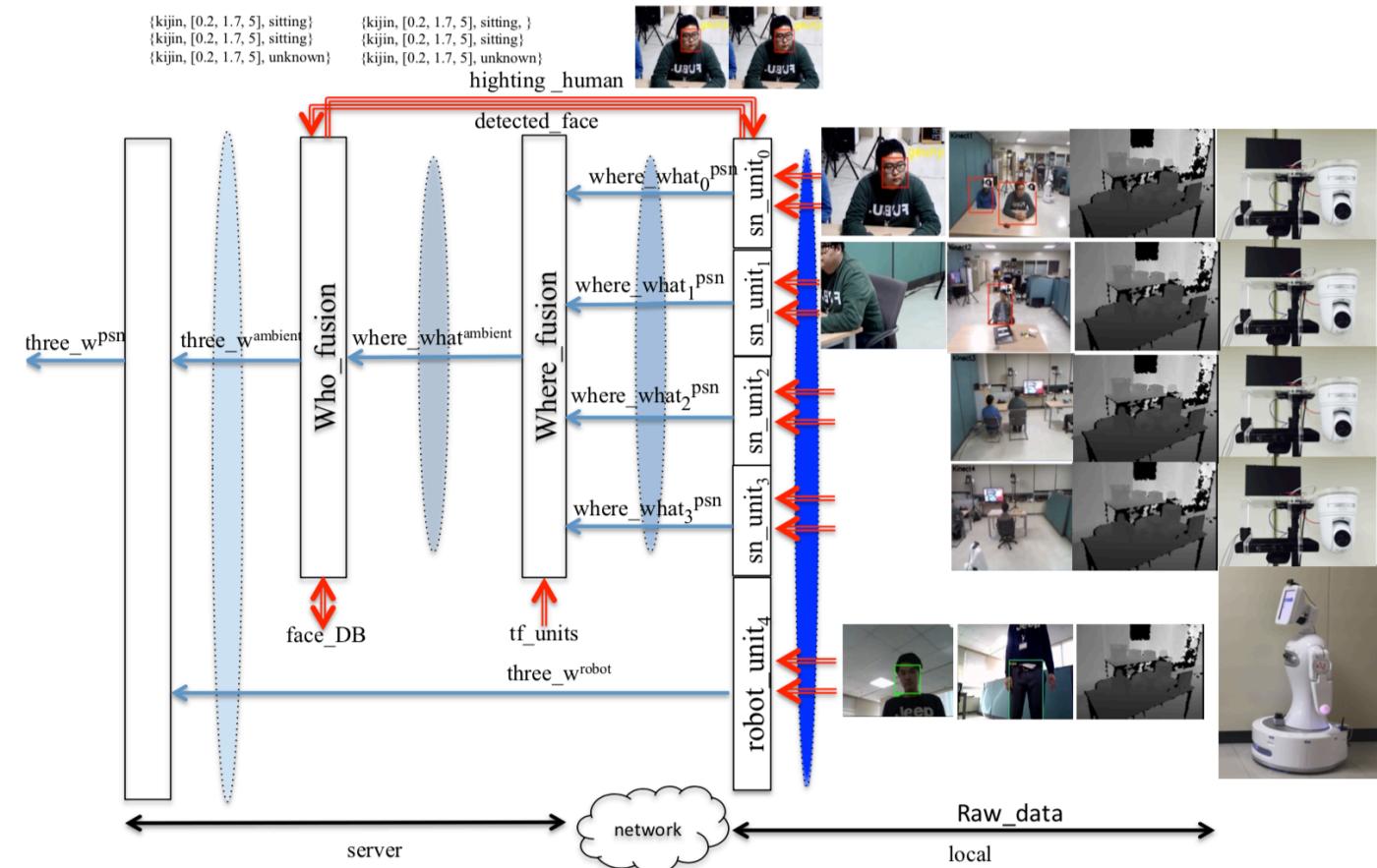
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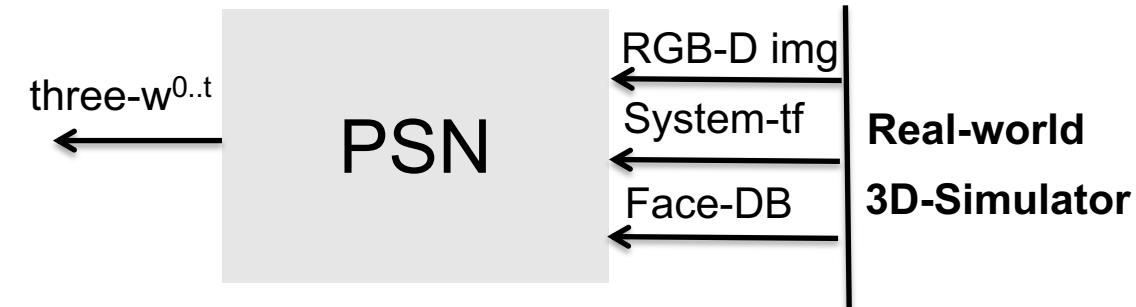
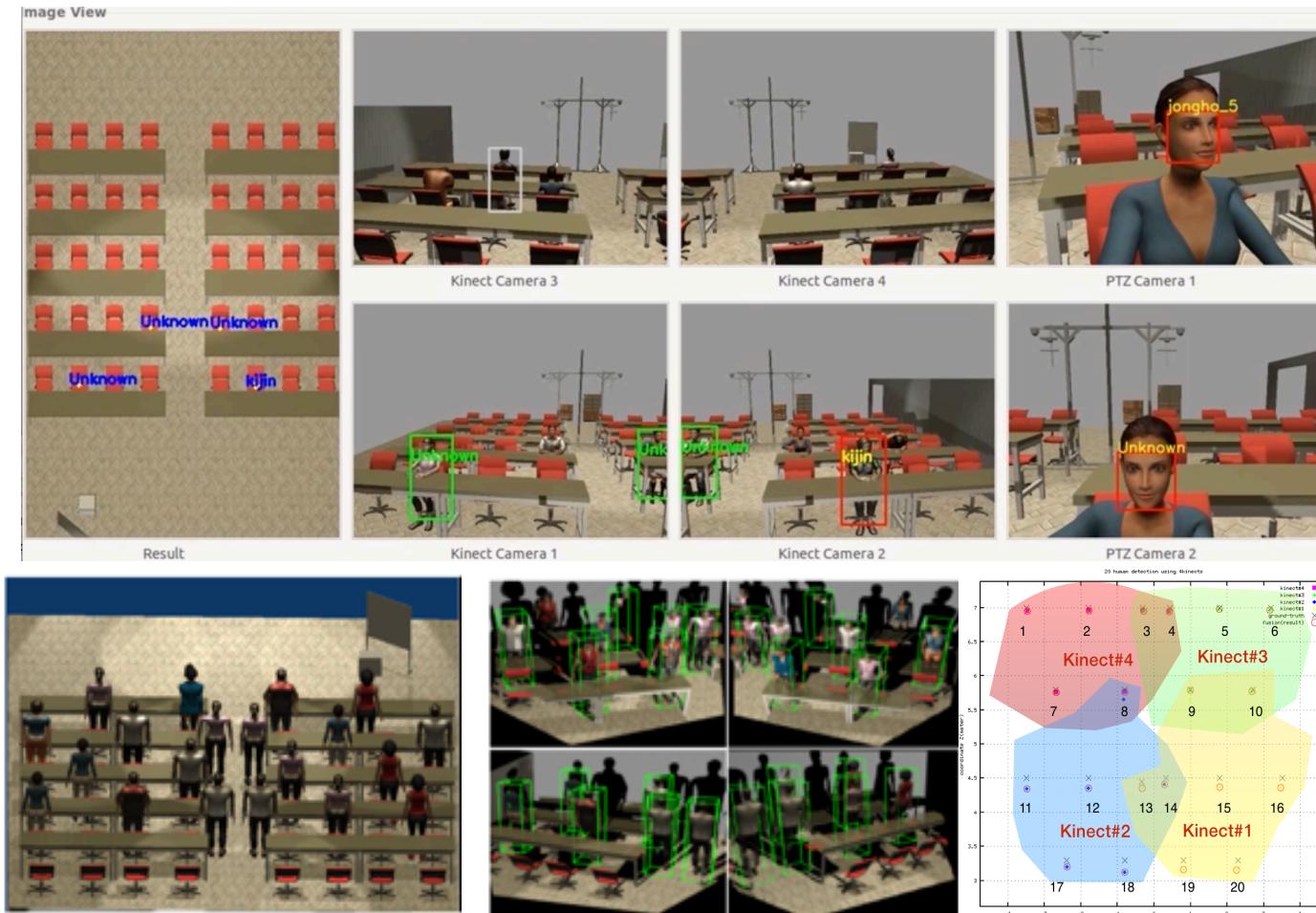
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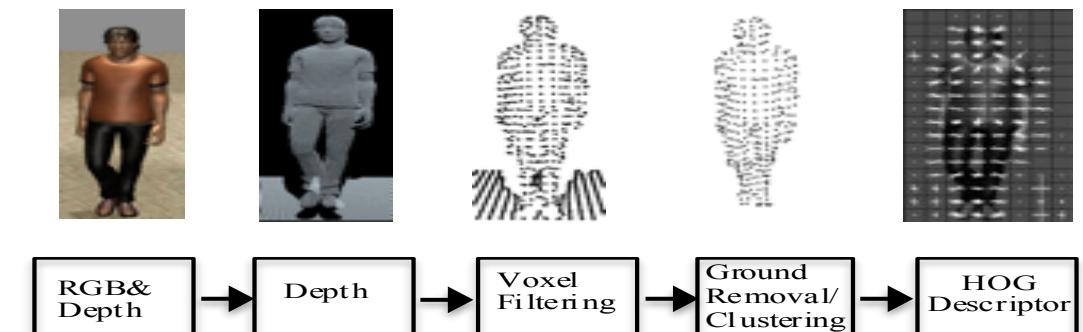
3W(who, what, where) fusion



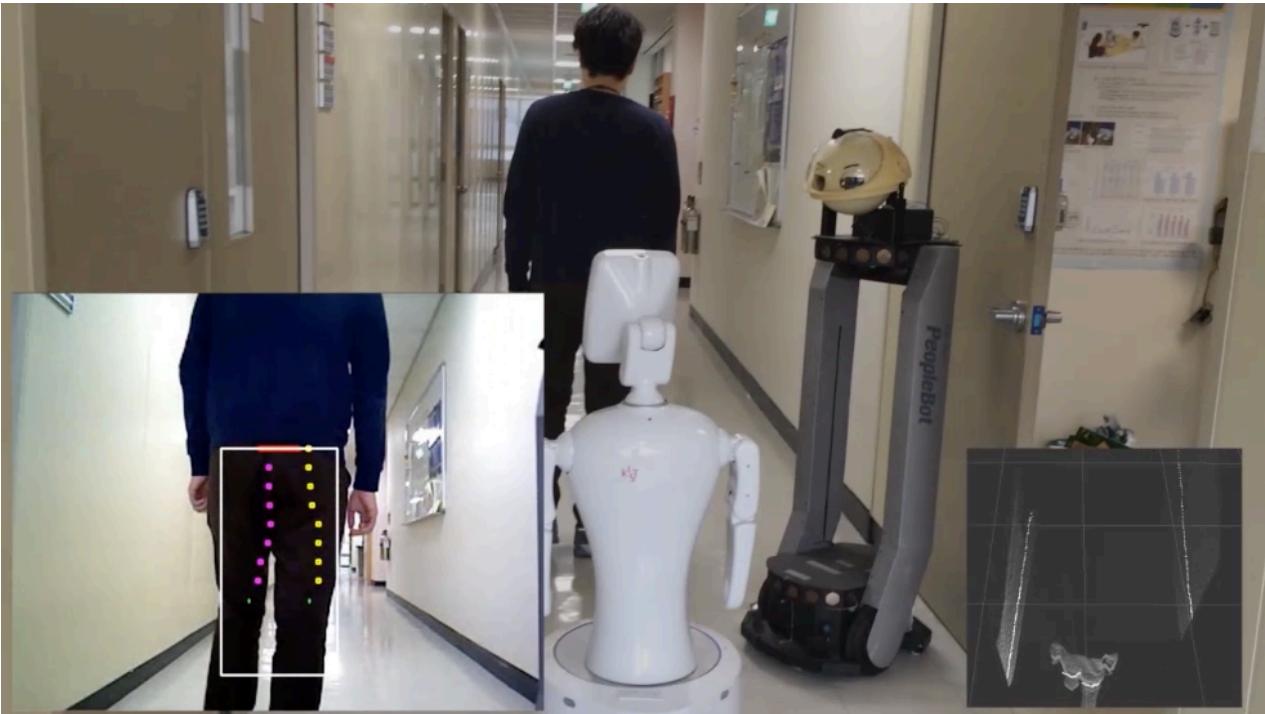
# Appendix: 3D Simulation (RO-MAN '14,'15)



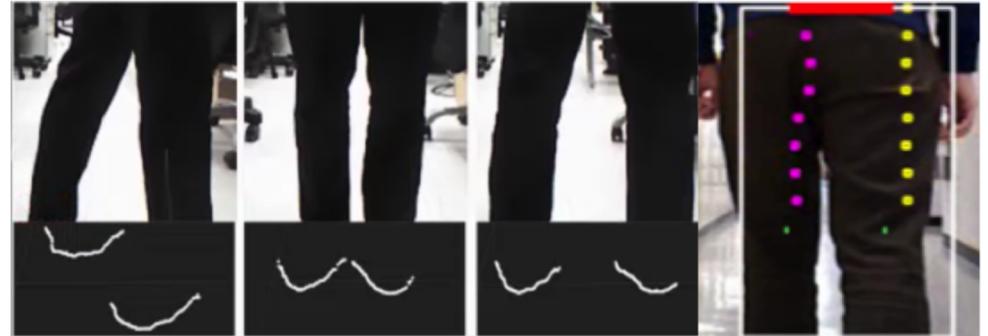
results of the process are summarized in Fig 5.



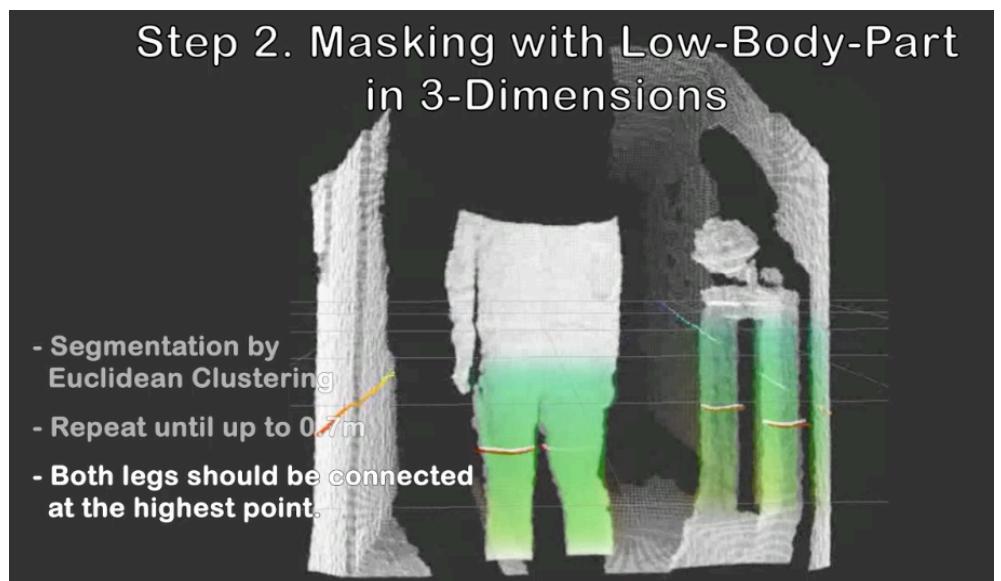
# Appendix: Leg Detection & Human Follower (HRI'15)



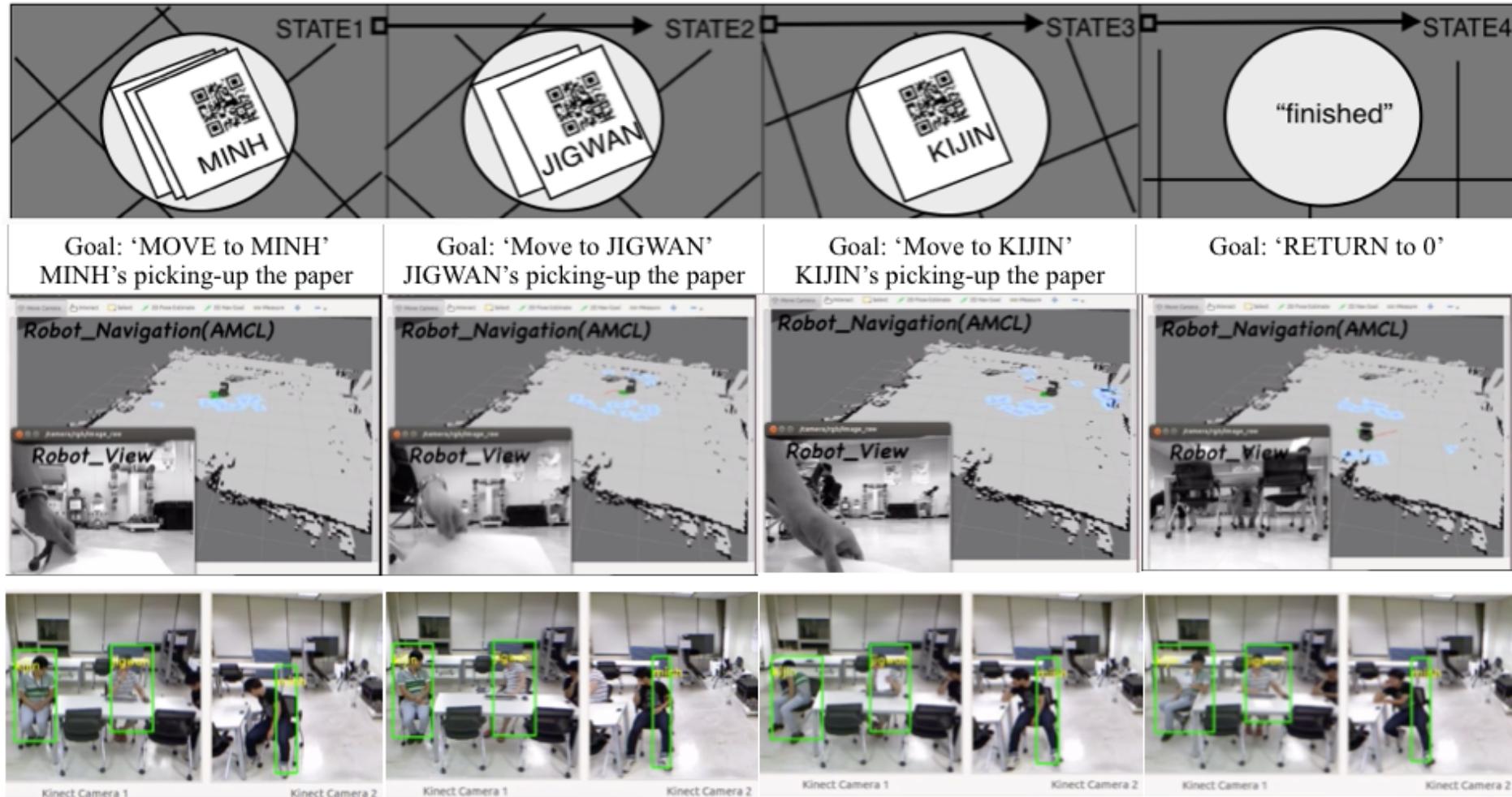
[https://drive.google.com/open?id=1VTJFn8Zjf2\\_th5Id4pMRFncQ--HrhfwK](https://drive.google.com/open?id=1VTJFn8Zjf2_th5Id4pMRFncQ--HrhfwK)



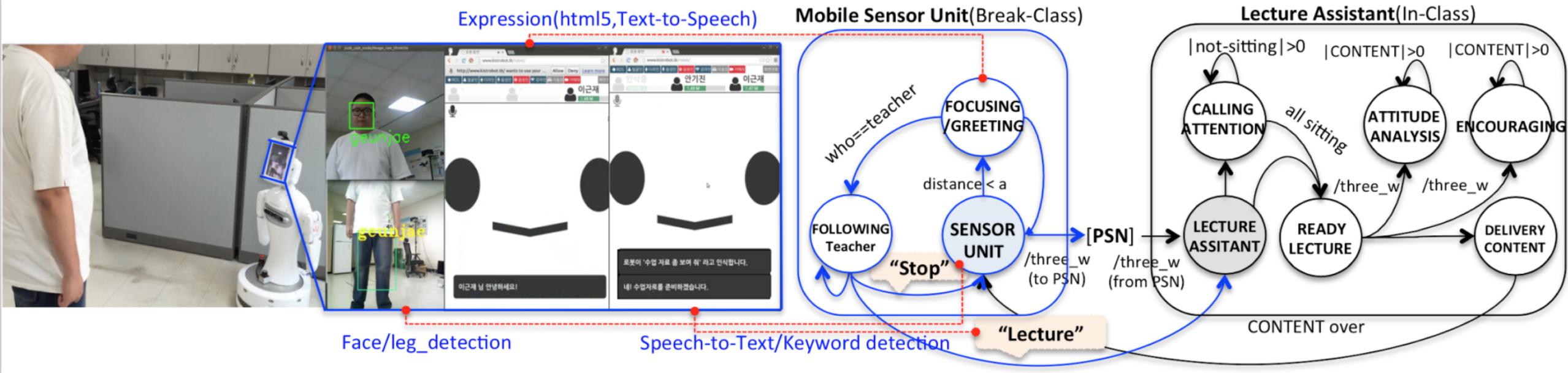
Step 2. Masking with Low-Body-Part  
in 3-Dimensions



# Appendix: 과제물배포(2차년도 Demo)



# Appendix: 자율학습진행 (3차년도 Demo)



<https://drive.google.com/open?id=1QA5bPaVXynyV4KLIT0IBdNaKNvuEFHXj>

# Appendix: Trusted Execution for low cost ARM architecture

