2020 年　4月　30日
(Year/Month/Day)

名古屋大学 大学院情報学 研究科長 殿
To:　Dean of Graduate School of Informatics, Nagoya University

# 研究報告書

## RESEARCH REPORT

滞在期間における研究報告書を，添付のとおり提出いたします。
This is the cover page of my attached research report.

## A. Cover Page

1. 被招へい研究者　所属・職・氏名
   Affiliation (Country / Area), Position, Name of Visitor
   Republic of Korea/Chuncheon/Hallym University, Professor, Seon-Woo Lee

2. 受入研究者　所属・職・氏名
   Affiliation, Position, Name of Host
   Nagoya University, Professor, Kenji Mase

3. 滞在中の研究テーマ
   Research Theme during the Visit
   Development of Gait Analysis System for Smart Walker Users

4. 滞在期間 Period of Visit
   2019 年　9 月　1 日 ～ 2020 年　4 月　30 日
   From (Year/Month/Day)　To (Year/Month/Day)

5. 招へい教員の主な研究テーマ
   Main Research Themes of the Visitor
   - Indoor Localization Technology
   - Wearable Sensing Systems
   - Digital Signal Processing

6. 招へい教員の個人ページなどへのリンク
   Link (URL) to the Personal (or Project) Page of the Visitor
   http://web.hallym.ac.kr/~senu/

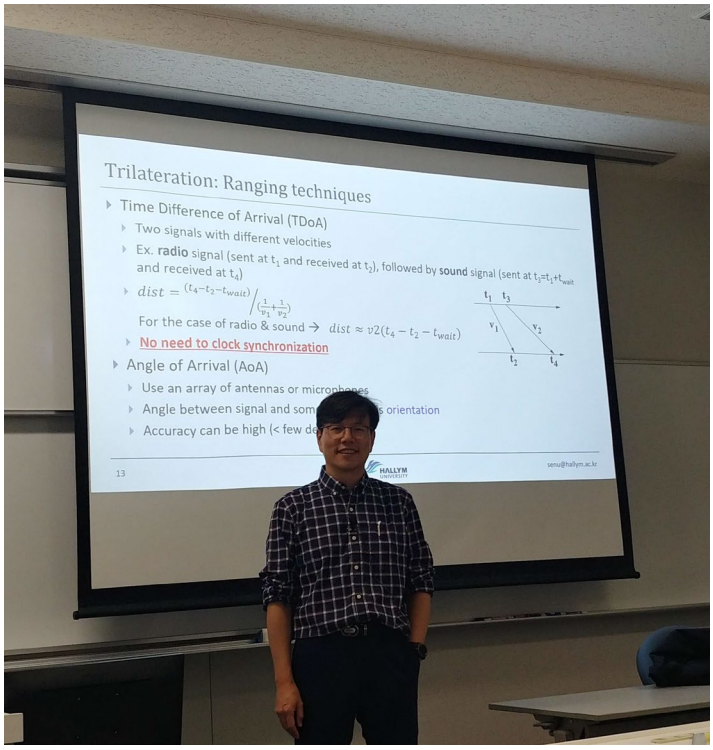
（注）「研究報告書」には、被招へい研究者の研究活動や講義等の写真を添付してください。なお、「研究報告書」（セクションA, B, C）及び写真は Web サイト等で公開される場合があります。個々の写真の公開を拒否される場合は、その旨記載して下さい。
Please select pictures which were taken when the visitor conducted his/her research or provided a lecture, and attach it to in this report. We may later upload the reports (sections A, B, and C) and/or pictures on our Web site. If the visitor does not want to have the picture(s) posted on our Web site, please indicate so per picture.

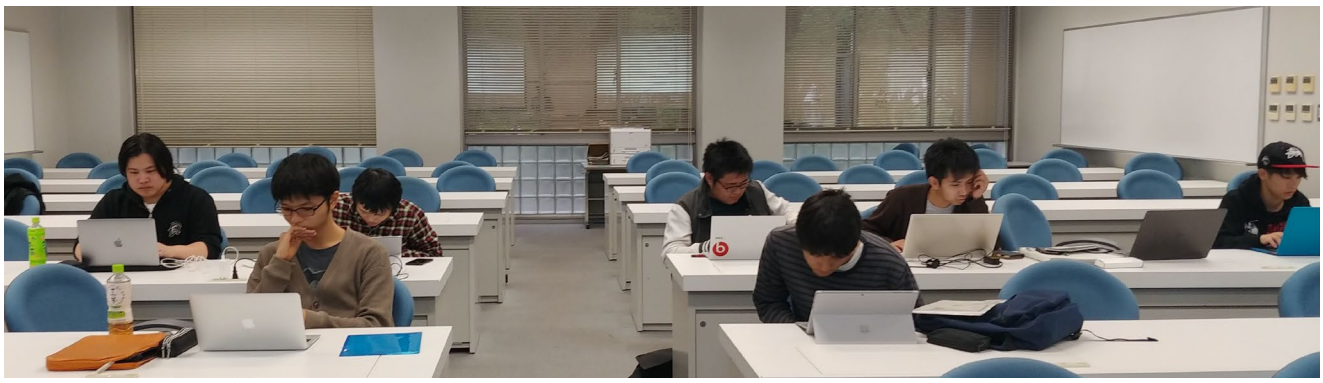
# B. Research Activities (to be published at the Faculty Web Site)

1. 滞在中の共同研究テーマや(可能なら)成果の紹介

   Brief Introduction of the Joint Research and Result (if possible) during the Visit

   A. During my visiting period, I have developed a simple gait analysis system for calculating some gait parameters of the users using a smart walker. The smart walker is a prototype for elderly people that was developed by Panasonic. The gait system has the 5 wearable IMUs (Inertial Measurement Units) and a force sensor installed in the smart walker. I have developed a set of programs to process the raw data of the sensors for gait analysis. The developed programs are implemented in Python 3 language and some open sourced packages such as numpy, scipy, and pandas. The current system can find the important gait events (heel strike, toe off etc.) and temporal parameters (gait cycle time, stance time, etc.), and then calculate the basic statistics for assessing the gait behavior of the user who uses the smart walker.
   B. In addition, I have lectured two classes of the subject 'Intelligent Robotics I' supervised under Prof. Mase at 2019-10-29 and 2019-11-05 with the topics including 'indoor localization technology'.



2. 滞在中に訪問した研究者

   Researcher(s) Visited during the Stay

   - Prof. Tomoko Yonezawa, Kansai University
   - Prof. Yasuyuki Sumi, Mirai Univeristy

3. 滞在中に参加したワークショップなど

Workshop/Symposium/Conference Attended during the Visit

- HCG Symposium 2019-12-11~12-13, Hiroshima
- IEICE SIG: MVE IPSJ-CVIM, 2020-01-23 ~ 2020-01-24, NAIST
- The 2nd International Symposium on Symbiotic Intelligent Systems, 2020-1-31~2-1, Osaka
- IEEE BigComp, 2020-2-19~2-22, Busan, Korea

## C. Life in Nagoya/Life in Japan (to be published at the Faculty Web Site)

観光/食/文化などなんでも.

名古屋あるいは日本に滞在して楽しかったことや印象に残ったことなど.

(Sightseeing, Food, Culture, etc. Please describe whatever you felt interesting or impressive during your stay in Nagoya and Japan.)

A. Ranking of sightseeing

1. Beautiful Higashiyama campus of Nagoya university
2. Cherry blossoms in near Nagoya castle area
3. Higashiyama botanical garden
4. Takayama city
5. Gero onsen

B. Ranking of food

1. Ton Katsu (Pork cutlet)
2. Hitsumabushi
3. Kaiten Sushi
4. Various Ramen
5. Kishimen