Gakuto Sasabe

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Personal Profile

GAKUTO SASABE was born in Japan, in 1992. He received the B.E. degree in electrical and electronic engineering.from the Tokyo University of Agriculture and Technology, and the M.E. degreein information technology from the Tokyo Institute of Technology, Tokyo, Japan, in 2018, under the supervision of Prof. Yasuhiro Miyake. After working on the development of the delivery of the Auto dish-serving system as a Robotics Technician, he is currently involved in the development of semiconductor manufacturing equipment as a Software Engineer. He is interested in augmenting human capabilities using technologies such as AR, VR and electrical engineering, as well as insights from cognitive psychology and human-computer interaction.

Education

School of Computing, Tokyo Institute of Technology   *Tokyo, Japan*
MASTER OF ENGINEERING.   *Apr 2016 - Mar 2018*
- Supervisor: Prof. Yoshihiro Miyake

Department of Electrical and Electronic Engineering, Tokyo University of Agriculture and Technology   *Tokyo, Japan*
BACHELOR OF ENGINEERING.   *Apr 2011 - May 2016*
- Supervisor: Prof. Hitoshi Kitazawa

Hamamatsu-Nishi Senior and Junior High Schools   *Shizuoka, Japan*
High School   *Apr 2008 - Mar 2011*

Work Experience

Panasonic Connect Co., Ltd.   *Osaka, Japan*
Software Engineer   *Apr 2018 - Dec 2023*
- At the first job, he worked as a robotics technician for development of the delivery of the Auto dish-serving system for chinese restaurant.
- Programming industrial robots for Mitsubishi Heavy Industries.
- Control design of the entire system.
- At his next job, he was a software engineer for semiconductor manufacturing equipment.
- Equipment UI design, specification creation and development using C and WPF
- Design, specification and implementation of control programs for equipment using TwinCAT
- Overall development efficiency using Jira, Markdown, and Subversion
- **Technical Skills:** C, VB.NET, PLC programming, TwinCAT, UML, Object oriented design, UI design, Subversion, AdobeXD, Git, Jira, Markdown
- **Soft Skills:** Teamwork, Time Management, Communication, Presentation skills.

University Projects

Increasing walking stride and speed by synchronization with avatar walking using mixed reality   *Tokyo, Japan*
School of Computing, Tokyo Institute of Technology   *Apr 2016 - Apr 2018*
- A 3D avatar whose walking rhythm was synchronized with the user was prepared, and the avatar was presented in front of the user by Hololens.
- Existing studies have attempted to improve gait by presenting rhythm as sound or timing as cue, but have not attempted to present gait as it is.
- Two types of avatars are provided: one that walks normally and one that has a large arm swing and foot lift.
- We checked for changes in walking speed and stride length in the two groups that walked while showing each avatar.
- The results showed that walking speed and stride length were significantly greater for users who showed avatars with greater arm and leg swing
- **Technical Skills:** C, Unity, Statistics, R, Psychological experiment design
- **Soft Skills:** Time Management, Teamwork, Presentation skills, Report writing.

Research on analysis methods for temporal signal changes in moving object detection.   *Tokyo, Japan*
Tokyo University of Agriculture and Technology   *Apr 2010 - Mar 2011*
- Clustering of temperature information by weather using DTW, RealAdaboost, and SVM as a study of machine learning of time series data.
- Next, we attempted to detect motion based on the time-series data of luminance information at a certain coordinate in the video.
- We created two waveforms, one connecting endpoints formed by monotonically increasing to monotonically decreasing time series data, and the other connecting endpoints formed by monotonically decreasing to monotonically increasing time series data.
- The width of the two segmented linearized waveforms enables more detailed detection of moving objects than the detection of moving objects using a single Gaussian distribution.
- **Technical Skills:** C++, Machine learning, Image recognition, Latex
- **Soft Skills:** Time Management, Teamwork, Presentation skills, Report writing.

Skills

Programming	Python (Pandas, PyTorch, NumPy, Scikit-learn. etc.), R, CSharp, Unity, OpenCV, Javascript, Arduino, PLC, TwinCAT
Miscellaneous	Linux, LaTeX,Adobe XD, Figma, Microsoft Office, Git, Jira.
Soft Skills	Time Management, Teamwork, Problem-solving, Documentation, Presentation, UI design.
Qualification	Fundamental Information Technology Engineer Examination, Applied Information Technology Engineer Examination

Achievements

2019	**Sponser Award**, GUGEN 2019(Hardware Contest)	*Japan*
2018	**CNS Golden Award**, CNS Golden Award	*Japan*

Publications

JOURNAL ARTICLES

Spatiotemporal Gait Guidance Using Audiovisual Cues of Synchronized Walking Avatar in Augmented Reality
Dane A. L. Miller, Taiki Ogata, Gakuto Sasabe, Liang Shan, Nozomi Tsumura, Yoshihiro Miyake
IEEE Access 10 (2022) pp. 90498–90506. 2022

CONFERENCE PRESANTATIONS

Development of a device that automatically adjusts the gain of specific keywords that appear in speech.
Shunichi Amano Gakuto Sasabe
23th Society of Instrument and Control Engineers System Integration Division Lecture (SI 2022), 2022, Chiba, Japan

Walking assist system utilizing the mirroring effect of visual information by mixed reality
Yoshihiro Miyake Gakuto Sasabe
30th SICE Symposium on Decentralized Autonomous Systems, 2018, Aichi, Japan

Interests

Reserch	Human Augmentation, Human Computer Interaction ,cognitive phycology,ghost engineering, Embodied cognition, AR/VR/MR
Maker	On weekends, he gathers with company volunteers and engages in maker activities, including the creation of body augmentation devices. They also participate in Makers Faire twice a year.
Technical Writing	I write descriptive blogs about my creation and reserch on my GitHub
Reading Books	I like to read about body extension research, philosophy and art.

Languages

Japanese	Professional proficiency
English	TOEIC: 765 IELTS Academic: Overall 5.5
French	Beginner

References available upon request.