**SWAGATA DAS**

**swagata.das.2013@gmail.com**

**WORK EXPERIENCE**



Project Assistant Professor, Hiroshima University (Oct 20’ – present)

Engaged in the project called “Smart society for enjoying long healthy life - Developing AI smart coaching technology that facilitates voluntary skill-up for elderlies” commissioned by the New Energy and Industrial Technology Development Organization (NEDO), Japan under Prof. Yuichi Kurita.

**EDUCATION**



PhD – Soft robotics, System Cybernetics (Apr 18’ – Oct 20’) **Hiroshima** **University**, Higashihiroshima, Japan–7390046.

CGPA – 3.4/4

(under Prof. Yuichi Kurita)

TAOYAKA Program M.S. – System Cybernetics (Apr 16’ – Apr 18’) **Hiroshima** **University**, Higashihiroshima, Japan–7390046.

CGPA – 3.5/4

M.Tech – Electronics Design and Technology (July 13’ – June 15’) **Tezpur Central** **University**, Tezpur, Assam, India - 784028.

CGPA - 9.45/10

(Project supervised and completed at **Council of Scientific and Industrial Research- Central** **Electronics Engineering Research Institute, India** under Prof. Jagdish Lal Raheja)

B.Tech – Electronics and Communication Engineering (July 09’ – May 13’) **North Eastern Regional Institute of Science and Tech. (NERIST)**, Itanagar, India - 791109.CGPA - 4.91/5

**TECHNICAL SKILLS**



Languages: C, C++, C#, Fortran, i8085, masm (32-bit), MATLAB, Python

Simulation and interface: Opensim, Simulink, Blender, Unity, LaTex, Figma, Sketch, Adobe XD

Data processing: MATLAB, Mathematica, R, Multisim

Hardware: Arduino, Expressif ESP32, OptiTrack Motive motion capture, Delsys Trigno Wireless EMG Sensors, Vive/Oculus VR, LeapMotion, GSR (Galvanic Skin Response) sensors, Emotiv EPOC/Insight, Pneumatic control modules (sensors & valves)

**LANGUAGES**



English: Fluent (GRE: 305; TOEFL iBT: 85; TOEIC: 945)

Japanese: Intermediate (JLPT N3: 120)

Hindi: Fluent

**PUBLICATIONS**



**Journal papers and book**

1. Das, S., Sakoda, W., Ramasamy, P., Tadayon, R., Ramirez, A. V., & Kurita, Y. Feature Selection and Validation of a Machine Learning-Based Lower Limb Risk Assessment Tool: A Feasibility Study. In MDPI Sensors, vol. 21, no. 19. MDPI. 2021.
2. Das, S., Ishibashi, Y., Minakata, M., & Kurita, Y. Estimating Signal-Dependent Noise (SDN)-based motion variations to enhance gesture recognition. Advanced Robotics. In press. Taylor & Francis.
3. Das, S., & Kurita, Y. ForceArm: A wearable pneumatic gel muscle (PGM)-based assistive suit for the upper limb. In IEEE Transactions on Medical Robotics and Bionics, vol 2, no. 2, PP. 269-281. IEEE. 2020.
4. Das, S., Kishishita, Y., Tsuji, T., Lowell, C., Ogawa, K., & Kurita, Y. ForceHand glove: a wearable force feedback glove with pneumatic artificial muscles (PAMs). In IEEE Robotics and Automation Letters, vol 3, no. 3, PP. 2416-2423. IEEE. 2018.
5. Das, S., Tripathy, D., & Raheja, J. L. Real-time BCI System Design to Control Arduino Based Speed Controllable Robot Using EEG. Springer. 2018.

**Book chapters**

1. Gunarajulu, R., Kurita, Y., Cukovic, S., & Das, S.\*, Foot Biomechanics with emphasis on the Plantar Pressure Sensing: A review. In Revolutions in Product Design for Healthcare - Advances in Product Design and Design Methods for Healthcare. In Press. Springer. (\*Corresponding author)
2. Das, S., Kurita, Y., & Tadayon, R. Accessible Smart Coaching Technologies Inspired by Elderly Requisites. In Multimedia for Accessible Human Computer Interfaces. PP. 175-215. Springer. 2021.
3. Kurita, Y., Thakur, C., & Das, S. Assistive Soft Exoskeletons with Pneumatic Artificial Muscles. In Haptic Interfaces for Accessibility, Health, and Enhanced Quality of Life, PP. 217-242. Springer. 2020.

**Conference papers**

1. Ramasamy, P., Das, S.\*, & Kurita, Y. Ski for Squat: A Squat Exergame with Pneumatic Gel Muscle-based Dynamic Difficulty Adjustment. In 23rd International Conference on Human-Computer Interaction (HCII), Online. PP. 449-467. Springer. 2021. (\*Corresponding author)
2. Das, S., Wongchadakul, V., & Kurita, Y. SmartAidView Jacket: Providing visual aid to lower the underestimation of assistive forces. In Proceedings of the Augmented Humans International Conference (AHs). PP. 152-156. ACM. 2021.
3. Das, S., Wongchadakul, V., Tadayon, R., & Kurita, Y. Creating illusive perceived assistive force using visual feedback. In IEEE International Conference on Systems, Man, and Cybernetics (SMC), PP. 3260-3267. IEEE. 2020.
4. Das, S., Thakur, C., & Kurita, Y. Force-feedback in Virtual Reality through PGM-based ForceHand glove. In IEEE/SICE International Symposium on System Integration (SII), PP. 1016-1021. IEEE. 2020.
5. Das, S., & Kurita, Y. Providing navigation assistance through ForceHand: a wearable force-feedback glove. In IEEE Global Conference on Signal and Information Processing (GlobalSIP), PP. 1-5. IEEE. 2019.
6. Das, S., Ishibashi, Y., Minakata, M., & Kurita, Y. Gesture recognition considering the estimation of signal-dependent noise (SDN)-based motion variation. In Proceedings of the Robotics Symposia (RS), PP. 217-220. 2021.
7. Goto, T., Das, S., Wolf, K., Lopes, P., Kurita, Y., & Kunze, K. Accelerating Skill Acquisition of Two-Handed Drumming using Pneumatic Artificial Muscles. In Proceedings of the Augmented Humans International Conference (AHs), PP. 1-9. ACM. 2020
8. Kishishita, Y., Das, S., Ramirez, A. V., Thakur, C., Tadayon, R., & Kurita, Y. Muscleblazer: Force-Feedback Suit for Immersive Experience. In IEEE Conference on Virtual Reality and 3D User Interfaces (VR), PP. 1813-1818. IEEE. 2019.
9. Tadayon, R., Ramirez, A. V., Das, S., Kishishita, Y., Yamamoto, M., & Kurita, Y. Automatic Exercise Assistance for the Elderly Using Real-Time Adaptation to Performance and Affect. In International Conference on Human-Computer Interaction (HCII), PP. 556-574. Springer. 2019.
10. Goto, T., Das, S., Kurita, Y., & Kunze, K. Artificial Motion Guidance: an Intuitive Device based on Pneumatic Gel Muscle (PGM). In The 31st Annual ACM Symposium on User Interface Software and Technology Adjunct Proceedings (UIST), PP. 182-184. ACM. 2018.
11. Kishishita, Y., Ramirez, A. V., Das, S., Thakur, C., Yanase, Y., & Kurita, Y. Muscleblazer: a wearable laser tag module powered by PGM-induced force-feedback. In Proceedings of the First Superhuman Sports Design Challenge: First International Symposium on Amplifying Capabilities and Competing in Mixed Realities (SHS), PP. 1-6. ACM. 2018.
12. Das, S., Lowell, C. and Kurita, Y. Force Your Hand—PAM Enabled Wrist Support. In International AsiaHaptics conference, PP. 239-245. Springer. 2016.
13. Dinamani, A., Das, S., Bijendra, L., Shruti, R., Babina, S. & Kiran, B. Performance of a hybrid MRC/SC diversity receiver over Rayleigh fading channel. In International conference on Circuits, Controls and Communications (CCUBE), PP. 1-4. IEEE. 2013.

**Invited Lectures**

1. CEDEC2018 (Computer Entertainment Developers Conference 2018), Yokohama, 一般社団法人コンピュータエンターテインメント協会: 空気圧人工筋を利用したウェアラブル力覚提示スーツ 2018. 08. 23
2. ICRA2017 (International Conference on Robotics and Automation 2017) Workshop on Advances and challenges on the development, testing and assessment of assistive and rehabilitation robots: Experiences from engineering and human science research, Singapore, Design and development of a PAM-enabled wrist assist glove 2017. 05. 29