## LIST OF PUBLICATIONS

- [1].Herath, H. M. K. K. M. B., Jayasekara, A. G. B. P., Madhusanka, B. G. D. A., & Karunasena, G. M. K. B. (2023). Attentive Vision-Based Model for Sarcopenia Screening by Automating Timed Up-and-Go (TUG) Test. In Enabling Person-Centric Healthcare Using Ambient Assistive Technology, Springer, pp. 85–103, Jan. 2023, doi: https://doi.org/10.1007/978-3-031-38281-9\_4.
- [2]. H. M. K. K. M. B. Herath, A. G. B. P. Jayasekara, and B. G. D. A. Madhusanka, Vision Attentive-based Geriatric Assessment for Sarcopenia with Limited Mobility: Integrating TUG and 3m Walk Test, International Journal of Cognitive Computing in Engineering. Elsevier (*Revise Submitted*), 2023.
- [3]. H. M. K. K. M. B. Herath, A. G. B. P. Jayasekara, and B. G. D. A. Madhusanka, Vision Attentive Technology: AI Approaches for Functional Mobility Assessment in Elderly Healthcare. Taylor and Francis (*Accepted*), 2023.
- [4].H. M. K. K. M. B. Herath, A. G. B. P. Jayasekara, and B. G. D. A. Madhusanka, and G.M.K.B. Karunasena, "Non-Invasive Tools for Early Detection and Monitoring of Sarcopenia in Older Individuals," in Moratuwa Engineering Research Conference 2023 (MERCon) (*Presented*), 2023.

## REFERENCES

- [1]. World Health Organization, World report on ageing and health, World Health Organization, 2015.
- [2]. World Health Organization, WHO Global Report on Falls Prevention in Older Age. World Health Organization, 2008. Accessed: Oct. 15, 2023.
- [3]. E. Soto-Pérez-de-Celis, D. Li, Y. Yuan, Y. Lau, and Arti Hurria, "Functional versus chronological age: geriatric assessments to guide decision making in older patients with cancer," Lancet Oncology, vol. 19, no. 6, pp. e305–e316, Jun. 2018.
- [4]. P. Gunaratna, "Let's add 'life' to the years of the elderly." [Online]. Available: https://www.sundaytimes.lk/181021/news/lets-add-life-to-the-years-of-theelderly-316853.html
- [5].K. C. Kregel and H. J. Zhang, "An integrated view of oxidative stress in aging: basic mechanisms, functional effects, and pathological considerations," American Journal of Physiology-regulatory Integrative and Comparative Physiology, vol. 292, no. 1, pp. R18–R36, Jan. 2007.
- [6].D. H. Paterson and Darren, "Physical activity and functional limitations in older adults: a systematic review related to Canada's Physical Activity Guidelines," International Journal of Behavioral Nutrition and Physical Activity, vol. 7, no. 1, pp. 38–38, Jan. 2010.
- [7]. T. J. Iwashyna, E. Wesley Ely, D. M. Smith, and K. M. Langa, "Long-term Cognitive Impairment and Functional Disability Among Survivors of Severe Sepsis," JAMA, vol. 304, no. 16, pp. 1787–1787, Oct. 2010.
- [8].F. Lattanzio et al., "Advanced Technology Care Innovation for Older People in Italy: Necessity and Opportunity to Promote Health and Wellbeing," Journal of the American Medical Directors Association, vol. 15, no. 7, pp. 457–466, Jul. 2014.
- [9].J. Michel, C Dreux, and A Vacheron, "Healthy ageing: Evidence that improvement is possible at every age," European Geriatric Medicine, vol. 7, no. 4, pp. 298–305, Jul. 2016.
- [10]. S. M. Ribeiro and J. J. Kehayias, "Sarcopenia and the analysis of body composition," Advances in nutrition, vol. 5, no. 3, pp. 260–267, 2014.
- [11]. J. Bauer, G. Biolo, T. Cederholm, M. Cesari, A. J. Cruz-Jentoft, J. E. Morley, S. Phillips, C. Sieber, P. Stehle, D. Teta et al., "Evidence-based recommendations for optimal dietary protein intake in older people: a position

paper from the protage study group," Journal of the american Medical Directors association, vol. 14, no. 8, pp. 542–559, 2013.

- [12]. H. D. W. T. Damayanthi, F. M. Moy, K. L. Abdullah, and S. D. Dharmaratne, "Prevalence of malnutrition and associated factors among community-dwelling older persons in sri lanka: a cross-sectional study," BMC geriatrics, vol. 18, no. 1, pp. 1–10, 2018.
- [13]. L. Liu, B. Zhu, and G.-X. Wang, "Azoxystrobin-induced excessive reactive oxygen species (ros) production and inhibition of photosynthesis in the unicellular green algae chlorella vulgaris," Environmental Science and Pollution Research, vol. 22, no. 10, pp. 7766–7775, 2015.
- J. A. Morais, R. Ross, R. Gougeon, P. B. Pencharz, P. J. Jones, and E. B. Marliss, "Distribution of protein turnover changes with age in humans as assessed by whole-body magnetic resonance image analysis to quantify tissue volumes," The Journal of nutrition, vol. 130, no. 4, pp. 784–791, 2000.
- [15]. J. E. Brown and E. Lechtenberg, Nutrition through the life cycle. Cengage Leaning, 2017.
- [16]. A. E. Thalacker-Mercer, J. C. Fleet, B. A. Craig, N. S. Carnell, and W. W. Campbell, "Inadequate protein intake affects skeletal muscle transcript profiles in older humans," The American journal of clinical nutrition, vol. 85, no. 5, pp. 1344–1352, 2007.
- [17]. M. Mazariegos, C. Valdez, S. Kraaij, C. van Setten, C. Luirink, K. Breuer, M. Haskell, I. Mendoza, N. W. Solomons, and P. Deurenberg, "Comparative body composition estimates for institutionalized and free-living elderly in metropolitan areas of the republic of guatemala," Nutrition Research, vol. 16, no. 3, pp. 443–457, 1996. 24
- [18]. O. F. Onunkwor, S. A. R. Al-Dubai, P. P. George, J. Arokiasamy, H. Yadav, A. Barua, and H. O. Shuaibu, "A cross-sectional study on quality of life among the elderly in non-governmental organizations' elderly homes in kuala lumpur," Health and quality of life outcomes, vol. 14, no. 1, pp. 1–10, 2016.
- [19]. A. J. Cruz-Jentoft et al., "Sarcopenia: European consensus on definition and diagnosis," Age and Ageing, vol. 39, no. 4, pp. 412–423, Apr. 2010.
- [20]. E. Commodari and M. Guarnera, "Attention and aging," vol. 20, no.6, pp. 578–584, Dec. 2008.
- [21]. N. C. Sharts-Hopko, "Low Vision and Blindness Among Midlife and Older Adults," Mar. 2009.

- [22]. M. Leo, Pierluigi Carcagnì, Pier Luigi Mazzeo, P. Spagnolo, D. Cazzato, and Cosimo Distante, "Analysis of Facial Information for Healthcare Applications: A Survey on Computer Vision-Based Approaches," vol. 11, no. 3, pp. 128–128, Feb. 2020.
- [23]. R. WE, "The neuropsychology of facial expression: a review of the neurological and psychological mechanisms for producing facial expressions," Psychological bulletin, vol. 95, no. 1, 2023, Accessed: Oct. 18, 2023.
- [24]. Diraco, Leone, and B. Siciliano, "An active vision system for fall detection and posture recognition in elderly healthcare," Mar. 2010.
- [25]. B. P. Martinez et al., "Accuracy of the timed up and go test for predicting sarcopenia in elderly hospitalized patients," Clinics, vol. 70, no. 5, pp. 369–372, 2015.
- [26]. A. Dubois, T. Bihl, and J.-P. Bresciani, "Automating the timed up and go test using a depth camera," Sensors, vol. 18, no. 2, p. 14, 2017.
- [27]. A. J. Cruz-Jentoft et al., "Sarcopenia: Revised European consensus on definition and diagnosis," Age and Ageing, vol. 48, no. 4, pp. 601–601, 2019.
- [28]. S. Phu et al., The diagnostic value of the short physical performance battery for sarcopenia, 2020.
- [29]. M. Kim and C. W. Won, "Sarcopenia in Korean community-dwelling adults aged 70 years and older: Application of screening and diagnostic tools from the Asian Working Group for sarcopenia 2019 update," Journal of the American Medical Directors Association, vol. 21, no. 6, pp. 752–758, 2020.
- [30]. P. Savoie, J. A. Cameron, M. E. Kaye, and E. J. Scheme, "Automation of the timed-up-and-go test using a conventional video camera," IEEE Journal of Biomedical and Health Informatics, vol. 24, no. 4, pp. 1196–1205, 2020.
- [31]. F. Buisseret et al., "Timed up and go and six-minute walking tests with wearable inertial sensor: One step further for the prediction of the risk of fall in elderly nursing home people," Sensors, vol. 20, no. 11, p. 3207, 2020.
- [32]. E. Dent, J. Woo, D. Scott, and E. O. Hoogendijk, "Sarcopenia measurement in research and clinical practice," European Journal of Internal Medicine, vol. 90, pp. 1–9, 2021.
- [33]. J. B. Ko et al., "Predicting sarcopenia of female elderly from physical activity performance measurement using machine learning classifiers," Clinical Interventions in Aging, vol. Volume 16, pp. 1723–1733, 2021.
- [34]. F. Dierick, P.-L. Stoffel, G. Schütz, and F. Buisseret, "High specificity of single inertial sensor-supplemented timed up and go test for assessing fall risk in elderly nursing home residents," Sensors, vol. 22, no. 6, p. 2339, 2022.

- [35]. M. Dhar et al., "South Asian Working Action Group on sarcopenia (SWAG-SARCO) – A consensus document," Osteoporosis and Sarcopenia, vol. 8, no. 2, pp. 35–57, 2022.
- [36]. A. Montemurro, J. D. Ruiz-Cárdenas, M. del Martínez-García, and J. J. Rodríguez-Juan, "Validity of an iphone app to detect Pre-Frailty and sarcopenia syndromes in community-dwelling older adults: The protocol for a diagnostic accuracy study," Sensors, vol. 22, no. 16, p. 6010, 2022.
- [37]. F. Addante et al., "An innovative AAL system based on IOT Technologies for patients with sarcopenia," Sensors, vol. 19, no. 22, p. 4951, 2019.
- [38]. J.-K. Kim, M.-N. Bae, K. B. Lee, and S. G. Hong, "Identification of patients with sarcopenia using gait parameters based on inertial sensors," Sensors, vol. 21, no. 5, p. 1786, 2021.
- [39]. Pei Ling Choo et al., "Timed Up and Go (TUG) Reference Values and Predictive Cutoffs for Fall Risk and Disability in Singaporean Community-Dwelling Adults: Yishun Cross-Sectional Study and Singapore Longitudinal Aging Study," Journal of the American Medical Directors Association, vol. 22, no. 8, pp. 1640–1645, Aug. 2021.
- [40]. Bruno Prata Martinez et al., "Accuracy of the Timed Up and Go test for predicting sarcopenia in elderly hospitalized patients," Clinics, vol. 70, no. 5, pp. 369–372, May 2015.
- [41]. H. Bischoff et al., "Identifying a cut-off point for normal mobility: a comparison of the timed 'up and go' test in community-dwelling and institutionalised elderly women," Age and Ageing, vol. 32, no. 3, pp. 315–320, May 2003.
- [42]. Lidiane Isabel Filippin, F. Miraglia, Vivian, and Márcio Manozzo Boniatti, "Timed Up and Go test as a sarcopenia screening tool in homedwelling elderly persons," Revista Brasileira de Geriatria e Gerontologia, Aug. 2017.
- [43]. A. J. Cruz-Jentoft et al., "Sarcopenia: European consensus on definition and diagnosis," Age and Ageing, vol. 39, no. 4, pp. 412–423, Apr. 2010.
- [44]. N. Shaikh, R Harshitha, and M. Bhargava, "Prevalence of sarcopenia in an elderly population in rural South India: a cross-sectional study," F1000Research, vol. 9, pp. 175–175, Mar. 2020.
- [45]. Nirmala Rathnayake, Gayani Alwis, Janaka Lenora, and Sarath Lekamwasam, "Cutoff values for the determination of sarcopenia and the prevalence of the condition in middle-aged women: A study from Sri Lanka," Ceylon Medical Journal, vol. 64, no. 1, pp. 9–9, Mar. 2019.
- [46]. S. A. Studenski et al., "Gait Speed and Survival in Older Adults," JAMA, vol. 305, no. 1, pp. 50–50, Jan. 2011.

- [47]. V. Bazarevsky, I. Grishchenko, K. Raveendran, T. Zhu, F. Zhang, and M. Grundmann, "BlazePose: On-device Real-time Body Pose tracking," arXiv.org, 2020.
- [48]. S. Kreiss, L. Bertoni, and Alexandre Alahi, "OpenPifPaf: Composite Fields for Semantic Keypoint Detection and Spatio-Temporal Association," vol. 23, no. 8, pp. 13498–13511, Mar. 2021.
- [49]. V. Bazarevsky, Yury Kartynnik, Andrey Vakunov, Karthik Raveendran, and M. Grundmann, "BlazeFace: Sub-millisecond Neural Face Detection on Mobile GPUs," Google Research, 2019.
- [50]. T.-Y. Lin et al., "Microsoft COCO: Common Objects in Context," pp. 740–755, Sep. 2014.
- [51]. E. Stone and M. Skubic, "Evaluation of an inexpensive depth camera for in-home gait assessment," Journal of Ambient Intelligence and Smart Environments, vol. 3, no. 4, pp. 349–361, 2011.
- [52]. L. I. Filippin, F. Miraglia, V. N. Teixeira, and M. M. Boniatti, "Timed up and go test as a sarcopenia screening tool in home-dwelling elderly persons," Revista Brasileira de Geriatria e Gerontologia, vol. 20, no. 4, pp. 556–561, 2017.
- [53]. T. Tang et al., "A sarcopenia screening test predicts mortality in hospitalized older adults," Scientific Reports, vol. 8, no. 1, 2018.
- [54]. G. Bahat, O. Yilmaz, C. Kilic, M. M. Oren, and M. A. Karan, "Performance of SARC-F Turkish in regard to sarcopenia definitions, muscle mass and functional measures," Clinical Nutrition, vol. 37, 2018.
- [55]. S. J. Sanabria et al., "Speed of sound ultrasound: A pilot study on a novel technique to identify sarcopenia in seniors," European Radiology, vol. 29, no. 1, pp. 3–12, 2018.
- [56]. A. J. Cruz-Jentoft and A. A. Sayer, "Sarcopenia," The Lancet, vol. 393, no. 10191, pp. 2636–2646, 2019.
- [57]. Y.-C. Ha, C. W. Won, M. Kim, K.-J. Chun, and J.-I. Yoo, "SARC-F as a useful tool for screening sarcopenia in elderly patients with hip fractures," The journal of nutrition, health & aging, vol. 24, no. 1, pp. 78–82, 2019.
- [58]. Y. Li, P. Zhang, Y. Zhang, and K. Miyazaki, "Gait analysis using stereo camera in daily environment," 2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2019.
- [59]. V. K. Lage et al., "Functional tests associated with sarcopenia in moderate chronic obstructive pulmonary disease," Expert Review of Respiratory Medicine, vol. 15, no. 4, pp. 569–576, 2020.
- [60]. G. Bahat, C. Kilic, M. Altinkaynak, and M. Akif Karan, "Comparison of standard versus population-specific handgrip strength cut-off points in the

detection of probable sarcopenia after launch of EWGSOP2," The Aging Male, vol. 23, no. 5, pp. 1564–1569, 2020.

- [61]. R. A. Merchant et al., "Relationship between fear of falling, fear-related activity restriction, Frailty, and sarcopenia," Journal of the American Geriatrics Society, vol. 68, no. 11, pp. 2602–2608, 2020.
- [62]. G. Bahat Öztürk, C. Kiliç, M. E. Bozkurt, and M. A. Karan, "Prevalence and associates of fear of falling among community-dwelling older adults," The journal of nutrition, health & aging, vol. 25, no. 4, pp. 433–439, 2020.
- [63]. Y. Ishida et al., "SARC-F as a screening tool for sarcopenia and possible sarcopenia proposed by AWGS 2019 in Hospitalized Older Adults," The journal of nutrition, health & aging, vol. 24, no. 10, pp. 1053–1060, 2020.
- [64]. Y.-H. Mo et al., "Comparison of three screening methods for sarcopenia in community-dwelling older persons," Journal of the American Medical Directors Association, vol. 22, no. 4, 2021.
- [65]. S. Mohieldin, C. M. Minor, C. L. Petersen, J. A. Batsis, and R. J. Halter, "Bandpass: A bluetooth-enabled remote monitoring device for sarcopenia," 2021 IEEE International Conference on Communications Workshops (ICC Workshops), 2021.
- [66]. H. E. Shin, M. Kim, and C. W. Won, "Differences in characteristics between older adults meeting criteria for sarcopenia and possible sarcopenia: From Research to Primary Care," International Journal of Environmental Research and Public Health, vol. 19, no. 7, p. 4312, 2022.
- [67]. J.-K. Kim, M.-N. Bae, K. Lee, J.-C. Kim, and S. G. Hong, "Explainable artificial intelligence and wearable sensor-based gait analysis to identify patients with osteopenia and sarcopenia in daily life," Biosensors, vol. 12, no. 3, p. 167, 2022.
- [68]. M. Mungiole and P. E. Martin, "Estimating segment inertial properties: Comparison of magnetic resonance imaging with existing methods," Journal of Biomechanics, vol. 23, no. 10, pp. 1039–1046, Jan. 1990.
- [69]. Ömer Kaynakli, Erhan Pulat, and M. Kilic, "Thermal comfort during heating and cooling periods in an automobile," Heat and Mass Transfer, vol. 41, no. 5, pp. 449–458, Sep. 2004.