

## REFERENCES

---

- [1] Merriam-Webster, “Robot.” [Online]. Available: <https://www.merriam-webster.com/dictionary/robot>. [Accessed on 22-Aug-2018].
- [2] S. Kalan, S. Chauhan, R. F. Coelho, M. A. Orvieto, I. R. Camacho, K. J. Palmer, and V. R. Patel, “History of robotic surgery,” *Journal of Robotic Surgery*, vol. 4, no. 3, pp. 141–147, 2010.
- [3] C. C. Kemp, A. Edsinger, and E. Torres-Jara, “Challenges for robot manipulation in human environments [grand challenges of robotics],” *IEEE Robotics & Automation Magazine*, vol. 14, no. 1, pp. 20–29, 2007.
- [4] T. Fong, I. Nourbakhsh, and K. Dautenhahn, “A survey of socially interactive robots,” *Robotics and autonomous systems*, vol. 42, no. 3-4, pp. 143–166, 2003.
- [5] R. A. R. C. Gopura, D. S. V. Bandara, K. Kiguchi, and G. K. I. Mann, “Developments in hardware systems of active upper-limb exoskeleton robots: A review,” *Robotics and Autonomous Systems*, vol. 75, pp. 203–220, 2016.
- [6] K. M. Norton, “A Brief History of Prosthetics.” [Online]. Available: <https://www.amputee-coalition.org/resources/a-brief-history-of-prosthetics/>. [Accessed on 22-Aug-2018].
- [7] D. S. V. Bandara, R. A. R. C. Gopura, K. T. M. U. Hemapala, and K. Kiguchi, “Upper extremity prosthetics: current status, challenges and future directions,” in *Seventeenth International Symposium on Artificial Life Robot*, Citeseer, 2012.

- [8] D. G. K. Madusanka, R. A. R. C. Gopura, Y. W. R. Amarasinghe, and G. K. I. Mann, “Spatial path following scheme for a trans-humeral prosthesis,” in *Robotics and Biomimetics (ROBIO), 2017 IEEE International Conference on*, pp. 737–742, IEEE, 2017.
- [9] C. Lake and R. Dodson, “Progressive upper limb prosthetics,” *Physical Medicine and Rehabilitation Clinics*, vol. 17, no. 1, pp. 49–72, 2006.
- [10] C. A. Krueger, J. C. Rivera, D. J. Tennent, A. J. Sheean, D. J. Stinner, and J. C. Wenke, “Late amputation may not reduce complications or improve mental health in combat-related, lower extremity limb salvage patients,” *Injury*, vol. 46, no. 8, pp. 1527–1532, 2015.
- [11] D. G. K. Madusanka, “Development of a vision aided reach-to-grasp path planning and controlling method for trans-humeral robotic prostheses,” PhD [Dissertation]. Moratuwa, University of Moratuwa, 2018.
- [12] M. Allami, B. Mousavi, M. Masoumi, E. Modirian, H. Shojaei, F. Mirsalimi, M. Hosseini, and P. Pirouzi, “A comprehensive musculoskeletal and peripheral nervous system assessment of war-related bilateral upper extremity amputees,” *Military Medical Research*, vol. 3, no. 1, p. 34, 2016.
- [13] R. Gailey, K. Allen, J. Castles, J. Kucharik, and M. Roeder, “Review of secondary physical conditions associated with lower-limb amputation and long-term prosthesis use.,” *Journal of Rehabilitation Research & Development*, vol. 45, no. 1, pp. 15–28, 2008.
- [14] F. Cordella, A. L. Ciancio, R. Sacchetti, A. Davalli, A. G. Cutti, E. Guglielmelli, and L. Zollo, “Literature review on needs of upper limb prosthesis users,” *Frontiers in neuroscience*, vol. 10, p. 209, 2016.
- [15] L. Flynn, J. Geeroms, R. Jimenez-Fabian, B. Vanderborght, and D. Lefever, “Cyberlegs beta-prosthesis active knee system,” in *2015 IEEE International Conference on Rehabilitation Robotics (ICORR)*, pp. 410–415, IEEE, 2015.

- [16] C. L. Semasinghe, J. L. B. Prasanna, H. M. Kandamby, R. K. P. S. Ranaweera, D. G. K. Madusanka, and R. A. R. C. Gopura, “Transradial prostheses: Current status and future directions,” in *Manufacturing & Industrial Engineering Symposium (MIES)*, pp. 1–7, IEEE, 2016.
- [17] R. J. Schwarz and C. Taylor, “The anatomy and mechanics of the human hand,” *Artificial limbs*, vol. 2, no. 2, pp. 22–35, 1955.
- [18] A. R. Tilley, *The measure of man and woman: human factors in design*, vol. 1. John Wiley & Sons, 2002.
- [19] K.-N. An, E. Y. Chao, W. P. Cooney III, and R. L. Linscheid, “Normative model of human hand for biomechanical analysis,” *Journal of biomechanics*, vol. 12, no. 10, pp. 775–788, 1979.
- [20] T. Tsuji, P. G. Morasso, K. Goto, and K. Ito, “Human hand impedance characteristics during maintained posture,” *Biological cybernetics*, vol. 72, no. 6, pp. 475–485, 1995.
- [21] H. Haken, J. S. Kelso, and H. Bunz, “A theoretical model of phase transitions in human hand movements,” *Biological cybernetics*, vol. 51, no. 5, pp. 347–356, 1985.
- [22] J. J. Uicker, J. Denavit, and R. S. Hartenberg, “An iterative method for the displacement analysis of spatial mechanisms,” *Journal of Applied Mechanics*, vol. 31, no. 2, pp. 309–314, 1964.
- [23] F. Piltan, S. H. T. Haghghi, N. Sulaiman, I. Nazari, and S. Siamak, “Artificial control of puma robot manipulator: A-review of fuzzy inference engine and application to classical controller,” *International Journal of Robotics and Automation*, vol. 2, no. 5, pp. 401–425, 2011.
- [24] T. Yoshikawa, “Analysis and control of robot manipulators with redundancy,” in *Robotics research: the first international symposium*, pp. 735–747, MIT press Cambridge, MA, 1984.

- [25] T. Yoshikawa, “Manipulability of robotic mechanisms,” *The international journal of Robotics Research*, vol. 4, no. 2, pp. 3–9, 1985.
- [26] R. M. Murray, *A mathematical introduction to robotic manipulation*. CRC press, 2017.
- [27] A. Torabi, M. Khadem, K. Zareinia, G. R. Sutherland, and M. Tavakoli, “Manipulability of teleoperated surgical robots with application in design of master/slave manipulators,” in *Medical Robotics (ISMР), 2018 International Symposium on*, pp. 1–6, IEEE, 2018.
- [28] “Medical dictionary.” [Online]. Available: <https://medical-dictionary.thefreedictionary.com/orthosis>. [Accessed on 22-Aug-2018].
- [29] T. Rahman, W. Sample, R. Seliktar, M. Alexander, and M. Scavina, “A body-powered functional upper limb orthosis,” *Journal of rehabilitation research and development*, vol. 37, no. 6, pp. 675–680, 2000.
- [30] J. C. Perry, J. Rosen, and S. Burns, “Upper-limb powered exoskeleton design,” *IEEE/ASME transactions on mechatronics*, vol. 12, no. 4, pp. 408–417, 2007.
- [31] R. A. R. C. Gopura and K. Kiguchi, “Mechanical designs of active upper-limb exoskeleton robots: State-of-the-art and design difficulties,” in *Rehabilitation Robotics, 2009. ICORR 2009. IEEE International Conference on*, pp. 178–187, IEEE, 2009.
- [32] J. Klein, S. Spencer, J. Allington, K. Minakata, E. Wolbrecht, R. Smith, J. Bobrow, and D. Reinkensmeyer, “Biomimetic orthosis for the neurorehabilitation of the elbow and shoulder (BONES),” in *Biomedical Robotics and Biomechatronics, 2008. BioRob 2008. 2nd IEEE RAS & EMBS International Conference on*, pp. 535–541, IEEE, 2008.
- [33] A. Ebrahimi, D. Gröninger, R. Singer, and U. Schneider, “Control parameter optimization of the actively powered upper body exoskeleton using subjective

- feedbacks,” in *2017 3rd International Conference on Control, Automation and Robotics (ICCAR)*, pp. 432–437, IEEE, 2017.
- [34] T. D. R. G. Thalagala, S. D. K. C. Silva, L. K. A. H. Maduwantha, R. K. P. S. Ranaweera, and R. A. R. C. Gopura, “A 4 dof exoskeleton robot with a novel shoulder joint mechanism,” in *2016 IEEE/SICE International Symposium on System Integration (SII)*, pp. 132–137, IEEE, 2016.
- [35] L. Colizzi, A. Lidonnici, and L. Pignolo, “The aramis project: a concept robot and technical design,” *Journal of rehabilitation medicine*, vol. 41, no. 12, pp. 1011–1015, 2009.
- [36] L. Pignolo, G. Dolce, G. Basta, L. Lucca, S. Serra, and W. Sannita, “Upper limb rehabilitation after stroke: ARAMIS a robo-mechatronic innovative approach and prototype,” in *2012 4th IEEE RAS & EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob)*, pp. 1410–1414, IEEE, 2012.
- [37] Y. Mao and S. K. Agrawal, “Design of a Cable-Driven Arm Exoskeleton (CAREX) for Neural Rehabilitation,” *IEEE Transactions on Robotics*, vol. 28, pp. 922–931, Aug. 2012.
- [38] Y. Mao, X. Jin, G. G. Dutta, J. P. Scholz, and S. K. Agrawal, “Human movement training with a cable driven arm exoskeleton (carex),” *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, vol. 23, no. 1, pp. 84–92, 2015.
- [39] R. A. R. C. Gopura, K. Kiguchi, and Y. Li, “SUEFUL-7: A 7dof upper-limb exoskeleton robot with muscle-model-oriented EMG-based control,” in *2009 IEEE/RSJ International Conference on Intelligent Robots and Systems*, pp. 1126–1131, Oct. 2009.
- [40] T. Nef and R. Riener, “Three-dimensional multi-degree-of-freedom arm therapy robot (ARMin),” in *Neurorehabilitation technology*, pp. 141–157, Springer, 2012.

- [41] A. Frisoli, F. Rocchi, S. Marcheschi, A. Dettori, F. Salsedo, and M. Bergamasco, “A new force-feedback arm exoskeleton for haptic interaction in virtual environments,” in *First Joint Eurohaptics Conference and Symposium on Haptic Interfaces for Virtual Environment and Teleoperator Systems. World Haptics Conference*, pp. 195–201, IEEE, 2005.
- [42] P. Letier and A. Preumont, “Portable haptic arm exoskeleton,” in *Prototyping of Robotic Systems: Applications of Design and Implementation*, pp. 122–145, IGI Global, 2012.
- [43] A. Schiele and G. Hirzinger, “A new generation of ergonomic exoskeletons - The high-performance X-Arm-2 for space robotics telepresence,” in *2011 IEEE/RSJ International Conference on Intelligent Robots and Systems*, pp. 2158–2165, Sept. 2011.
- [44] M. H. Rahman, M. J. Rahman, O. Cristobal, M. Saad, J.-P. Kenné, and P. S. Archambault, “Development of a whole arm wearable robotic exoskeleton for rehabilitation and to assist upper limb movements,” *Robotica*, vol. 33, no. 1, pp. 19–39, 2015.
- [45] A. Frisoli, L. Borelli, A. Montagner, S. Marcheschi, C. Procopio, F. Salsedo, M. Bergamasco, M. C. Carboncini, M. Tolaini, and B. Rossi, “Arm rehabilitation with a robotic exoskeleton in virtual reality,” in *Rehabilitation Robotics, 2007. ICORR 2007. IEEE 10th International Conference on*, pp. 631–642, IEEE, 2007.
- [46] K. Kiguchi, M. H. Rahman, M. Sasaki, and K. Teramoto, “Development of a 3dof mobile exoskeleton robot for human upper-limb motion assist,” *Robotics and Autonomous systems*, vol. 56, no. 8, pp. 678–691, 2008.
- [47] L. Resnik, S. L. Klinger, and K. Etter, “The deka arm: Its features, functionality, and evolution during the veterans affairs study to optimize the deka arm,” *Prosthetics and orthotics international*, vol. 38, no. 6, pp. 492–504, 2014.

- [48] L. Resnik, M. R. Meucci, S. Lieberman-Klinger, C. Fantini, D. L. Kelty, R. Disla, and N. Sasson, “Advanced upper limb prosthetic devices: implications for upper limb prosthetic rehabilitation,” *Archives of physical medicine and rehabilitation*, vol. 93, no. 4, pp. 710–717, 2012.
- [49] K. B. Fite, T. J. Withrow, K. W. Wait, and M. Goldfarb, “A gas-actuated anthropomorphic transhumeral prosthesis,” in *2007 IEEE International Conference on Robotics and Automation*, pp. 3748–3754, IEEE, 2007.
- [50] S. K. Kundu, K. Kiguchi, and E. Horikawa, “Design and Control Strategy for a 5 DOF Above-Elbow Prosthetic Arm,” *International Journal of Assistive Robotics and Mechatronics*, vol. 9, pp. 79–93, 2008.
- [51] L. Resnik, J. Cancio, S. Klinger, G. Latlief, N. Sasson, and L. Smurr-Walters, “Predictors of retention and attrition in a study of an advanced upper limb prosthesis: Implications for adoption of the deka arm,” *Disability and Rehabilitation: Assistive Technology*, vol. 13, no. 2, pp. 206–210, 2018.
- [52] K. B. Fite, T. J. Withrow, X. Shen, K. W. Wait, J. E. Mitchell, and M. Goldfarb, “A gas-actuated anthropomorphic prosthesis for transhumeral amputees,” *IEEE Transactions on Robotics*, vol. 24, no. 1, pp. 159–169, 2008.
- [53] “A’Manhattan Project’for the Next Generation of Bionic Arms.” [Online]. Available: <https://spectrum.ieee.org/biomedical/bionics/a-manhattan-project-for-the-next-generation-of-bionic-arms>. [Accessed on 22-Aug-2018].
- [54] C. D. Brenner and J. K. Brenner, “The use of preparatory/evaluation/training prostheses in developing evidenced-based practice in upper limb prosthetics,” *JPO: Journal of Prosthetics and Orthotics*, vol. 20, no. 3, pp. 70–82, 2008.
- [55] G. R. Hurley and J. R. Williams, “Modular prosthetic sockets and methods for making same,” Mar. 17 2015. US Patent 8,978,224.

- [56] L. Resnik, T. Patel, S. G. Cooney, J. J. Crisco, and C. Fantini, “Comparison of transhumeral socket designs utilizing patient assessment and in vivo skeletal and socket motion tracking: a case study,” *Disability and Rehabilitation: Assistive Technology*, vol. 11, no. 5, pp. 423–432, 2016.
- [57] A. Esquenazi and R. H. Meier, “Rehabilitation in limb deficiency. 4. limb amputation,” *Archives of physical medicine and rehabilitation*, vol. 77, no. 3, pp. S18–S28, 1996.
- [58] T. A. K. Gaber, C. Gardner, and S. Kirker, “Silicone roll-on suspension for upper limb prostheses: users views,” *Prosthetics and orthotics international*, vol. 25, no. 2, pp. 113–118, 2001.
- [59] C. Lake, “The evolution of upper limb prosthetic socket design,” *JPO: Journal of Prosthetics and Orthotics*, vol. 20, no. 3, pp. 85–92, 2008.
- [60] S. Jönsson, K. Caine-Winterberger, and R. Bränemark, “Osseointegration amputation prostheses on the upper limbs: methods, prosthetics and rehabilitation,” *Prosthetics and orthotics international*, vol. 35, no. 2, pp. 190–200, 2011.
- [61] M. Ortiz-Catalan, B. Håkansson, and R. Bränemark, “An osseointegrated human-machine gateway for long-term sensory feedback and motor control of artificial limbs,” *Science translational medicine*, vol. 6, no. 257, pp. 257re6–257re6, 2014.
- [62] D. Farina and S. Amsüss, “Reflections on the present and future of upper limb prostheses,” *Expert review of medical devices*, vol. 13, no. 4, pp. 321–324, 2016.
- [63] G. Li and T. A. Kuiken, “Modeling of prosthetic limb rotation control by sensing rotation of residual arm bone,” *IEEE Transactions on Biomedical Engineering*, vol. 55, no. 9, pp. 2134–2142, 2008.

- [64] E. Witsø, T. Kristensen, P. Benum, S. Sivertsen, L. Persen, A. Funderud, T. Magne, H. P. Aursand, and A. Aamodt, “Improved comfort and function of arm prosthesis after implantation of a humerus-t-prosthesis in transhumeral amputees,” *Prosthetics and orthotics international*, vol. 30, no. 3, pp. 270–278, 2006.
- [65] P. K. Tomaszewski, M. Van Diest, S. K. Bulstra, N. Verdonschot, and G. J. Verkerke, “Numerical analysis of an osseointegrated prosthesis fixation with reduced bone failure risk and periprosthetic bone loss,” *Journal of Biomechanics*, vol. 45, no. 11, pp. 1875–1880, 2012.
- [66] S. Lathers and J. La Belle, “Advanced manufactured fused filament fabrication 3d printed osseointegrated prosthesis for a transhumeral amputation using taulman 680 fda,” *3D Printing and Additive Manufacturing*, vol. 3, no. 3, pp. 166–174, 2016.
- [67] G. Tsikandylakis, Ö. Berlin, and R. Bränemark, “Implant survival, adverse events, and bone remodeling of osseointegrated percutaneous implants for transhumeral amputees,” *Clinical Orthopaedics and Related Research®*, vol. 472, no. 10, pp. 2947–2956, 2014.
- [68] D. A. Bennett, J. E. Mitchell, D. Truex, and M. Goldfarb, “Design of a Myoelectric Transhumeral Prosthesis,” *IEEE/ASME Transactions on Mechatronics*, vol. 21, pp. 1868–1879, Aug. 2016.
- [69] T. Lenzi, J. Lipsey, and J. W. Sensinger, “The ric arma small anthropomorphic transhumeral prosthesis,” *IEEE/ASME Transactions on Mechatronics*, vol. 21, no. 6, pp. 2660–2671, 2016.
- [70] G. Kejlaa, “Consumer concerns and the functional value of prostheses to upper limb amputees,” *Prosthetics and orthotics international*, vol. 17, no. 3, pp. 157–163, 1993.
- [71] K. A. Raichle, M. A. Hanley, I. Molton, N. J. Kadel, K. Campbell, E. Phelps, D. Ehde, and D. G. Smith, “Prosthesis use in persons with lower-and

- upper-limb amputation,” *Journal of rehabilitation research and development*, vol. 45, no. 7, p. 961, 2008.
- [72] K. Østlie, R. J. Franklin, O. H. Skjeldal, A. Skrondal, and P. Magnus, “Musculoskeletal pain and overuse syndromes in adult acquired major upper-limb amputees,” *Archives of physical medicine and rehabilitation*, vol. 92, no. 12, pp. 1967–1973, 2011.
- [73] K. M. Flood, M. E. Huang, T. L. Roberts, P. F. Pasquina, V. S. Nelson, and P. R. Bryant, “Limb deficiency and prosthetic management. 2. aging with limb loss,” *Archives of physical medicine and rehabilitation*, vol. 87, no. 3, pp. 10–14, 2006.
- [74] I. Vujaklija, D. Farina, and O. C. Aszmann, “New developments in prosthetic arm systems,” *Orthopedic Research and Reviews*, vol. 8, pp. 31–39, 2016.
- [75] N. A. A. Razak, N. A. A. Osman, H. Gholizadeh, and S. Ali, “Biomechanics principle of elbow joint for transhumeral prostheses: comparison of normal hand, body-powered, myoelectric & air splint prostheses,” *Biomedical engineering online*, vol. 13, no. 1, p. 134, 2014.
- [76] F. Casolo, “Elbow prosthesis for partial or total upper limb replacements,” in *Motion control*, InTech, 2010.
- [77] W. D. I. G. Dasanayake, R. A. R. C. Gopura, V. P. C. Dassanayake, and G. K. I. Mann, “Estimation of prosthetic arm motions using stump arm kinematics,” in *Information and Automation for Sustainability (ICIAfS), 2014 7th International Conference on*, pp. 1–6, IEEE, 2014.
- [78] “The anatomy body.” [Online]. Available: <http://www.danafarberbostonchildrens.org/why-choose-us/expertise/surgery/rotationplasty.aspx>. [Accessed on 22-Aug-2018].
- [79] E. MARQUARDT, “The operative treatment of congenital limb malformation part III,” *Prosthetics and Orthotics International*, p. 61.

- [80] F. Schiedel and R. Rödl, “Lower limb lengthening in patients with disproportionate short stature with achondroplasia: a systematic review of the last 20 years,” *Disability and rehabilitation*, vol. 34, no. 12, pp. 982–987, 2012.
- [81] L. E. Ramseier, C. E. Dumont, and G. Ulrich Exner, “Rotationplasty (borggreve/van nes and modifications) as an alternative to amputation in failed reconstructions after resection of tumours around the knee joint,” *Scandinavian journal of plastic and reconstructive surgery and hand surgery*, vol. 42, no. 4, pp. 199–201, 2008.
- [82] A. S. Niyetkaliyev, S. Hussain, M. H. Ghayesh, and G. Alici, “Review on design and control aspects of robotic shoulder rehabilitation orthoses,” *IEEE Transactions on Human-Machine Systems*, vol. 47, no. 6, pp. 1134–1145, 2017.
- [83] S. B. Kesner, L. P. Jentoft, F. Hammond, R. D. Howe, and M. Popovic, “Design considerations for an active soft orthotic system for shoulder rehabilitation,” 2011.
- [84] D. J. Magermans, E. K. J. Chadwick, H. E. J. Veeger, and F. C. T. van der Helm, “Requirements for upper extremity motions during activities of daily living,” *Clinical Biomechanics*, vol. 20, pp. 591–599, July 2005.
- [85] B. D. Rubin and J. A. Schlechter, “Shoulder Biomechanics, Examination, and Rehabilitation Principles,” *AANA Advanced Arthroscopy: The Shoulder E-Book*, pp. 24–33, 2010.
- [86] C. Carignan, M. Liszka, and S. Roderick, “Design of an arm exoskeleton with scapula motion for shoulder rehabilitation,” in *ICAR’05. Proceedings., 12th International Conference on Advanced Robotics*, 2005.
- [87] H. S. Lo and S. S. Xie, “Optimization of a redundant 4r robot for a shoulder exoskeleton,” in *2013 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM)*, pp. 798–803, IEEE, 2013.

- [88] T. Kijima, K. Matsuki, N. Ochiai, T. Yamaguchi, Y. Sasaki, E. Hashimoto, Y. Sasaki, H. Yamazaki, T. Kenmoku, S. Yamaguchi, *et al.*, “In vivo 3-dimensional analysis of scapular and glenohumeral kinematics: comparison of symptomatic or asymptomatic shoulders with rotator cuff tears and healthy shoulders,” *Journal of shoulder and elbow surgery*, vol. 24, no. 11, pp. 1817–1826, 2015.
- [89] T. Albrektsson and C. Johansson, “Osteoinduction, osteoconduction and osseointegration,” *European spine journal*, vol. 10, no. 2, pp. S96–S101, 2001.
- [90] P. Helliwell, “Biomechanics of the upper limbs: Mechanics, modeling, and musculoskeletal injuries,” 2007.
- [91] F. Parisi and G. Raiola, “Video analysis in youth volleyball team,” 2014.
- [92] A. Oosterwijk, M. Nieuwenhuis, C. van der Schans, and L. Mouton, “Shoulder and elbow range of motion for the performance of activities of daily living: A systematic review,” *Physiotherapy theory and practice*, vol. 34, no. 7, pp. 505–528, 2018.
- [93] C.-M. Shih, K.-C. Huang, C.-C. Pan, C.-H. Lee, and K.-C. Su, “Biomechanical analysis of acromioclavicular joint dislocation treated with clavicle hook plates in different lengths,” *International orthopaedics*, vol. 39, no. 11, pp. 2239–2244, 2015.
- [94] L. Jin, S. Li, H. M. La, and X. Luo, “Manipulability optimization of redundant manipulators using dynamic neural networks,” *IEEE Transactions on Industrial Electronics*, vol. 64, no. 6, pp. 4710–4720, 2017.
- [95] P. I. Corke, “A Simple and Systematic Approach to Assigning Denavit Hartenberg Parameters,” *IEEE Transactions on Robotics*, vol. 23, pp. 590–594, June 2007.
- [96] D. G. K. Madusanka, R. A. R. C. Gopura, Y. W. R. Amarasinghe, and G. K. I. Mann, “A simulation environment for control algorithms of tran-

shumeral prostheses,” in *International Conference on Emerging Trends in Mechanical Engineering*, pp. 190–196, 2015.

- [97] B. Sañudo, D. Rueda, B. d. Pozo-Cruz, M. de Hoyo, and L. Carrasco, “Validation of a video analysis software package for quantifying movement velocity in resistance exercises,” *Journal of strength and conditioning research*, vol. 30, no. 10, pp. 2934–2941, 2016.