

## Papers by Revolutionizing Prosthetics Team Members\*

\*The list of papers provided below is not comprehensive, and not all published articles shown were funded by the Revolutionizing Prosthetics program.

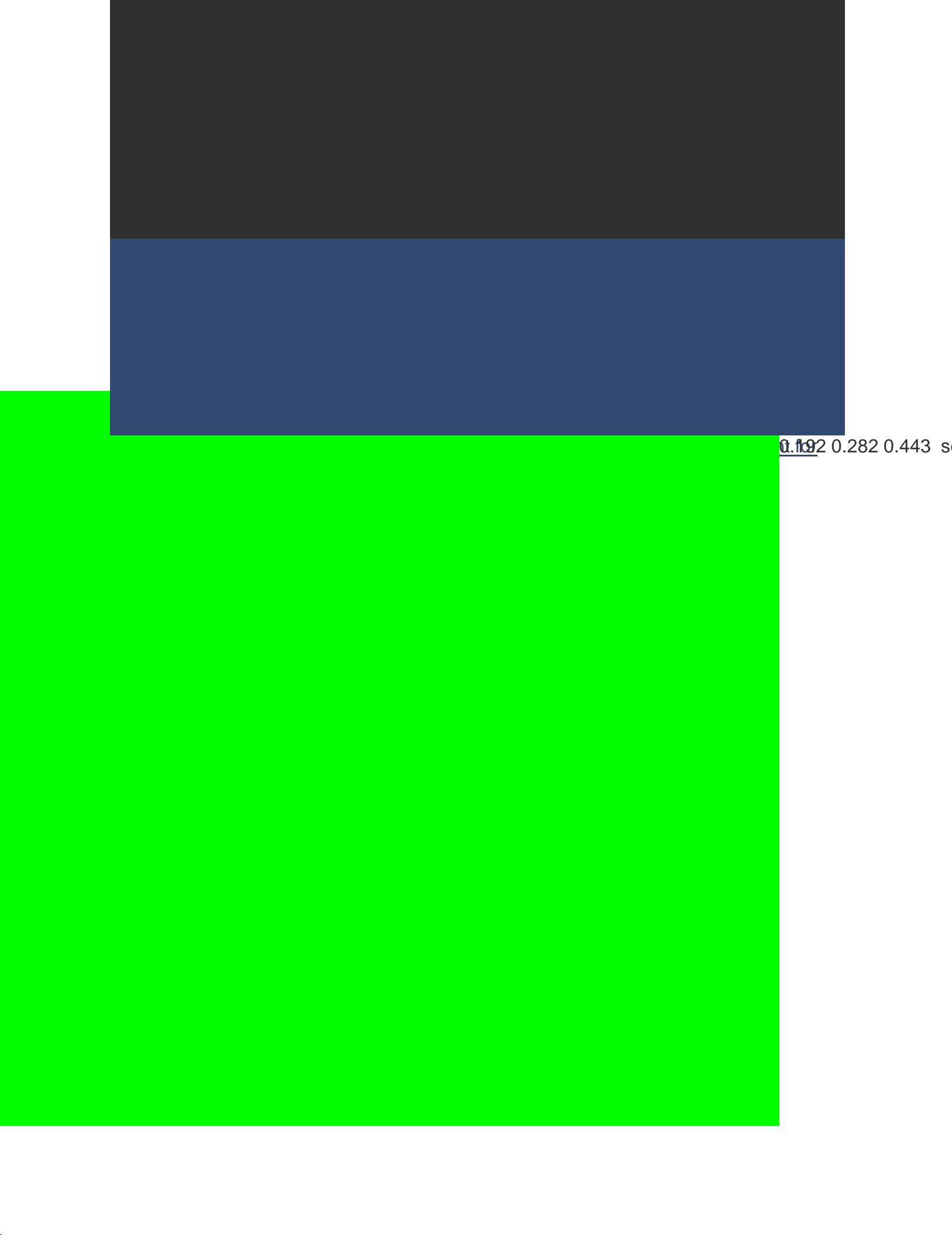
Acharya S, Mollazadeh M, Murari K, Thakor N. Spatiotemporal source tuning filter bank for multiclass EEG based brain computer interfaces. Conf Proc IEEE Eng Med Biol Soc, 1:327–330 (2006).

Acharya S, Aggarwal V, Tenore F, Hyun-Chool S, Etienne-Cummings R, Schieber MH, Thakor NV. Towards a brain-computer interface for dexterous control of a multi-fingered prosthetic hand. CNE e scn /TT1 4

Armiger RS, Vogelstein RJ. Air-Guitar Hero: A real-time video game interface for training and evaluation of dexterous upper-extremity neuroprosthetic control algorithms. BioCAS 2008, pp. 121–124, 20–22 November 2008.

Armiger RS, Tenore FV, Bishop WE, Beaty JD, Bridges MM, Burck JM, Vogelstein RJ, Harshbarger SD. A real-time Virtual Integration Environment for neuroprosthetics and

Baker JJ, Yatsenko D, Schorsch JF, DeMichele GA, Troyk PR, Hutchinson DT, Weir RF, Clark G, Greger B. Decoding individuated finger flexions with Implantable MyoElectric Sensors.



Burck J, Zeher MJ, Armiger R, Beaty JD. Developing the world's most advanced prosthetic arm using model-based design. The MathWorks News & Notes 2009.

Burck JM, Bigelow JD, Harshbarger SD. Revolutionizing Prosthetics: systems engineering challenges and opportunities. Johns Hopkins APL Tech Dig, 30(3):186–197 (2011).

Campos M, Breznen B, Andersen RA. A neural representation of sequential states within an instructed task. J Neurophysiol, 104(5):2831–2849 (2010).

Cassidy A, Etienne-Cummings R. Non-linear neural spike train decoding via polynomial kernel regression. Conf Proc IEEE Eng Med Biol Soc, 2007:4102–4105 (2007).

Chatterjee A, Aggarwal V, Ramos A, Acharya S, Thakor NV. Operation of a brain-computer interface using vibrotactile biofeedback. CNE '07, pp. 171–174, 2–5 May 2007.

Chatterjee A, Aggarwal V, Ramos A, Acharya S, Thakor NV. A brain-computer interface with vibrotactile biofeedback for haptic information. J Neuroeng Rehabil, 17;4:40 (2007).

Chatterjee A, Chaubey P, Martin J, Thakor NV. Testing a prosthetic haptic feedback simulator with an interactive force matching task. J Prosthet Orthot, 20(2):27–34 (2008).

Chatterjee A, Chaubey P, Martin J, Thakor NV. Quantifying prosthesis control improvements using a vibrotactile representation of grip force. 2008 IEEE Region 5 Conference, pp. 1–5, 17–20 April 2008.

Cheng EJ, Loeb GE. On the use of musculoskeletal models to interpret motor control strategies from performance data. J Neural Eng, 5(2):232–253 (2008).

Chestek CA, Batista AP, Santhanam G, Yu BM, Afshar A, Cunningham JP, Gilja V, Ryu SI, Churchland MM, Shenoy KV. Single-neuron stability during repeated reaching in macaque premotor cortex. J Neurosci, 27(40):10742–10750 (2007).

Chestek CA, Cunningham JP, Gilja V, Nuyujukian P, Ryu SI, Shenoy KV. Neural prosthetic systems: current problems and future directions. Conf Proc IEEE Eng Med Biol Soc, 2009:3369–3375 (2009).

Chestek CA, Gilja V, Nuyujukian P, Kier RJ, Solzbacher F, Ryu SI, Harrison RR, Shenoy KV. HermesC: low-power wireless neural recording system for freely moving primates. IEEE Trans Neural Sys 0.0024( )18002 Tw 12 0 0 12 72 250(m) 382.08dpd6 sg TJ ET10

mplexity and heterogeneity of single-neuron  
urophysiol, 97(6):4235–4257 (2007).

Proceedings of 0 0 116(f)2oer.J N

Dowden BR, Wilder AM, Hiatt SD, Normann RA, Brown NA, Clark GA. Selective and graded recruitment of cat hamstring muscles with intrafascicular stimulation. IEEE Trans Neural Syst Rehabil Eng, 17(6):545–552 (2009).

Dumanian GA, Ko JH, O'Shaughnessy KD, Kim PS, Wilson CJ, Kuiken TA. Targeted reinnervation for transhumeral amputees: current surgical technique and update on results. Plast Reconstr Surg, 124(3):863–869 (2009).

Farrell TR, Weir RF. The optimal controller delay for myoelectric prostheses. IEEE Trans Neural Syst Rehabil Eng, 15(1):111–118 (2007).

Farrell TR, Weir RF. A comparison of the effects of electrode implantation and targeting on pattern classification accuracy for prosthesis control. IEEE Trans Biomed Eng, 55(9):2198–2211 (2008).

Farrell T, Weir RF. The effects of electrode implantation and targeting on pattern classification accuracy for prosthesis control. Proceedings of the MEC '08 Conference, New Brunswick, Canada, 13–15 August 2008.

Faulring EL, Colgate JE, Peshkin MA. Cobotic architecture for prosthetics. Conf Proc IEEE Eng Med Biol Soc, 1:5635–5637 (2006).

Fishel JA, Santos VJ, Loeb GE. A robust microvibration sensor for biomimetic fingertips. BioRob 2008, pp. 659–663, 19–22 October 2008.

Gail A, Andersen RA. Neural dynamics in monkey parietal reach region reflect context-specific sensorimotor transformations.

Harrison RR, Kier RJ, Chestek CA, Gilja V, Nuyujukian P, Kim S, Clark GA. [A wireless neural interface for chronic recording](#). BioCAS 2008, pp. 125–128, 20–22 November 2008.

Kemere C, Santhanam G, Yu BM, Afshar A, Ryu SI, Meng TH, Shenoy KV. Detecting neural-state transitions using hidden Markov models for motor cortical prostheses. J Neurophysiol, 100(4):2441–2452 (2008).

Kim K, Colgate JE, Santos-Munne JJ, Makhlin A, Peshkin MA. On the design of miniature haptic devices for upper extremity prosthetics. IEEE ASME Trans Mechatron, 15(1):27–39 (2010).

Kim S, Bhandari R, Klein M, Negi S, Rieth L, Tathireddy P, Toepper M, Oppermann H, Solzbacher F. Integrated wireless neural interface based on the Utah electrode array. Biomed Microdevices, 11(2):453–466 (2009).

Kim SS, Mihalas S, Russell A, Dong Y, Bensmaia SJ. Does afferent heterogeneity matter in conveying tactile feedback through peripheral nerve stimulation? IEEE Trans Neural Syst Rehabil Eng, 19(5):514–520 (2011).

Linderman MD, Gilja V, Santhanam G, Afshar A, Ryu S, Meng TH, Shenoy KV. An autonomous, broadband, multi-channel neural recording system for freely behaving primates. Conf Proc IEEE Eng Med Biol Soc, 1:1212–1215 (2006).

Linderman MD, Gilja V, Santhanam G, Afshar A, Ryu S, Meng TH, Shenoy KV. Neural recording stability of chronic electrode arrays in freely behaving primates. Conf Proc IEEE Eng Med Biol Soc, 1:4387–4391 (2006).

Lindner A, Iyer A, Kagan I, Andersen RA. Human posterior parietal cortex plans where to reach and what to avoid. J Neurosci, 30(35):11715–11725 (2010).

Loeb GE. Taking control of prosthetic arms. JAMA, 301(6):670–671 (2009).

Loeb GE, Tsianos GA, Fishel JA, Wettels N, Schaal S. Understanding haptics by evolving mechatronic systems. Prog Brain Res, 192:129–144 (2011).

Love LJ, Lind RF, Jansen JF. Mesofluidic actuation for articulated finger and hand prosthetics. IROS 2009, pp. 2586–2591, 10–15 October 2009.

Lowery MM, Weir RF, Kuiken TA. Simulation of intramuscular EMG signals detected using implantable myoelectric sensors (IMES). IEEE Trans Biomed Eng, 53(10):1926–1933 (2006).

Macisaac DT, Englehart KB. The science in science fiction's artificial men. Crosstalk 19:4–8 (2006).

Merrill DR, Lockhart J, Troyk PR, Weir RF, Hankin DL. Development of an implantable myoelectric sensor for advanced prosthesis control. Artif Organs, 35(3):249–252 (2011).

Mileusnic MP, Loeb GE. Force estimation from ensembles of Golgi tendon organs. J Neural Eng, 6(3):036001 (2009).

Miller LA, Lipschutz RD, Stubblefield KA, Lock BA, Huang H, Williams TW 3rd, Weir RF, Kuiken TA. Control of a six degree of freedom prosthetic arm after targeted muscle reinnervation surgery. Arch Phys Med Rehabil 89(11):2057–2065 (2008).

Mitchell M, Weir RF. Development of a clinically viable multifunctional hand prosthesis. Proceedings of the MEC '08 Conference, New Brunswick, Canada, 13–15 August 2008.

Mollazadeh M, Murari K, Cauwenberghs G, Thakor N.

Mollazadeh M, Aggarwal V, Davidson AG, Law AJ, Thakor NV, Schieber MH.  
Spatiotemporal variation of multiple neurophysiological signals in the primary motor cortex during dexterous reach-to-grasp movements.

Pesaran B, Nelson MJ, Andersen RA. [Free choice activates a decision circuit between frontal and parietal cortex](#). Nature, 453(7193):406

Schultz AE, Baade SP, Kuiken TA. Expert opinions on success factors for upper-limb prostheses. J Rehabil Res Dev, 44(4):483–489 (2007).

Schultz AE, Kuiken TA. Neural interfaces for control of upper limb prostheses: the state of the art and future possibilities. PM R, 3(1):55–67 (2011).

Sensinger JW, Weir RF. Non-backdrivable series elastic actuator for use in a prosthetic elbow. Proceedings of the MEC '05 Conference, New Brunswick, Canada, 17–19 August 2005.

Sensinger JW, Weir RF. Modeling and preliminary testing socket-residual limb interface stiffness of above-elbow prostheses. IEEE Trans Neural Syst Rehabil Eng, 16(2):184–190 (2008).





Zeher MJ, Armiger RS, Burck JM, Moran C, Kiely JB, Weeks SR, Tsao JW, Pasquina