

# Curriculum Vitæ of Zoran Nenadić

(updated: May 1, 2015)

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Department of Biomedical Engineering  
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**Education** **D.Sc.** Systems Science and Mathematics – August 2001  
**WASHINGTON UNIVERSITY**, Saint Louis, MO  
Dissertation: *Signal Processing, Computation and Estimation in Biological Neural Networks*  
Advisor: Professor Bijoy K. Ghosh

**M.S.** Systems Science and Mathematics – May 1998  
**WASHINGTON UNIVERSITY**, Saint Louis, MO

**Diploma** (5 yr. degree) Mechanical Engineering (specialization: Automatic Control) – May 1995  
**UNIVERSITY OF BELGRADE**, Belgrade, Serbia  
Thesis: *On Finite-Time Stability of Linear Time-Delayed Systems* (in Serbian)  
Advisor: Professor Dragutin Debeljkovic

**Professional Experience** **UNIVERSITY OF CALIFORNIA**, Irvine, CA

- DEPARTMENT OF BIOMEDICAL ENGINEERING (BME)
  - Associate Professor, July 2011 - present
  - Assistant Professor, April 2005 - June 2011
- DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE (EECS)
  - Associate Professor (by courtesy), July 2011 - present
  - Assistant Professor (by courtesy), January 2007 - June 2011
- GRADUATE PROGRAM IN MATHEMATICAL, COMPUTATIONAL AND SYSTEMS BIOLOGY
  - Associate Professor (by courtesy), July 2011 - present
  - Assistant Professor (by courtesy), September 2006 - June 2011

**CALIFORNIA INSTITUTE OF TECHNOLOGY**, Pasadena, CA

- DIVISION OF ENGINEERING AND APPLIED SCIENCE
  - Visiting Associate, May 2005 - May 2006
  - Postdoctoral Fellow, October 2001 - February 2005

**WASHINGTON UNIVERSITY**, Saint Louis, MO

- CENTER FOR BIOCYBERNETICS AND INTELLIGENT SYSTEMS  
Research Assistant, October 1999 - October 2001
- DEPARTMENT OF SYSTEMS SCIENCE AND MATHEMATICS (SSM)  
Instructor, January 2000 - August 2001
- SEVER INSTITUTE OF TECHNOLOGY  
Research Assistant, August 1996 - August 2001

**Research Interests**

- Neuroengineering (brain-computer interfaces, multisensor extracellular recording); Biomedical signal processing and pattern recognition (supervised and unsupervised signal detection and classification); Large-scale *in silico* biological neural network models; Biomedical devices and sensors.

Fellowships,  
Honors and  
Awards

- **BME Professor of the Year**, Engineering Student Council, UC Irvine, 2014
- **IEEE Senior Member**, 2012
- **Faculty Early Career Development (CAREER) Award**, National Science Foundation, 2011
- **Opportunity Award**, Center for Complex Biological Systems, UC Irvine, 2008
- **Best Paper Competition Finalist**, IEEE Engineering in Medicine and Biology Society, 2007
- **Faculty Career Development Award**, UC Irvine, 2007 - 2008
- **Research Assistantship**, Washington University, Department of Systems Science and Mathematics, 1996 - 2001
- **Travel Fellowship**, Computation and Neuroscience Meeting, Brugge, Belgium, 2000
- **Student Fellowship**, The Fourth International Conference on Cognitive and Neural Systems, Boston University, 2000
- **Research Fellowship**, Republic of Serbia, Ministry of Science and Technology, 1995 - 1996
- **Outstanding Student Award**, University of Belgrade, Faculty of Mechanical Engineering, 1995

Teaching Ex-  
perience

1. **BME 233 Dynamic Systems in Biology and Medicine**, UC Irvine, Fall 2015, Instructor Evaluation: TBA/4.00 (mean), TBA/4.00 (median).
2. **BME 130 Biomedical Signals and Systems**, UC Irvine, Fall 2015, Instructor Evaluation: TBA/4.00 (mean), TBA/4.00 (median).
3. **BME 170 Biomedical Engineering Lab**, UC Irvine, Spring 2014, Instructor Evaluation: 3.77/4.00 (mean), 4.00/4.00 (median).
4. **BME 233 Dynamic Systems in Biology and Medicine**, UC Irvine, Fall 2013, Instructor Evaluation: 4.00/4.00 (mean), 4.00/4.00 (median).
5. **BME 130 Biomedical Signals and Systems**, UC Irvine, Fall 2013, Instructor Evaluation: 3.85/4.00 (mean), 4.00/4.00 (median).
6. **BME 170 Biomedical Engineering Lab**, UC Irvine, Spring 2013, Instructor Evaluation: 3.77/4.00 (mean), 4.00/4.00 (median).
7. **BME 233 Dynamic Systems in Biology and Medicine**, UC Irvine, Fall 2012, Instructor Evaluation: 4.00/4.00 (mean), 4.00/4.00 (median).
8. **BME 130 Biomedical Signals and Systems**, UC Irvine, Fall 2012, Instructor Evaluation: 3.57/4.00 (mean), 3.70/4.00 (median).
9. **BME 170 Biomedical Engineering Lab**, UC Irvine, Spring 2012, Instructor Evaluation: 3.74/4.00 (mean), 4.00/4.00 (median).
10. **BME 233 Dynamic Systems in Biology and Medicine**, UC Irvine, Fall 2011, Instructor Evaluation: 4.00/4.00 (mean), 4.00/4.00 (median).
11. **BME 130 Biomedical Signals and Systems**, UC Irvine, Fall 2011, Instructor Evaluation: 3.39/4.00 (mean), 3.70/4.00 (median).
12. **BME 170 Biomedical Engineering Lab**, UC Irvine, Spring 2011, Instructor Evaluation: 3.78/4.00 (mean), 4.00/4.00 (median).
13. **BME 233 Dynamic Systems in Biology and Medicine**, UC Irvine, Fall 2010, Instructor Evaluation: 4.00/4.00 (mean), 4.00/4.00 (median).
14. **BME 130 Biomedical Signals and Systems**, UC Irvine, Fall 2010, Instructor Evaluation: 3.55/4.00 (mean), 3.70/4.00 (median).
15. **BME 170 Biomedical Engineering Lab**, UC Irvine, Spring 2010, Instructor Evaluation: 3.57/4.00 (mean), 3.70/4.00 (median).
16. **BME 233 Dynamic Systems in Biology and Medicine**, UC Irvine, Fall 2009, Instructor Evaluation: 3.94/4.00 (mean), 4.00/4.00 (median).
17. **BME 130 Biomedical Signals and Systems**, UC Irvine, Fall 2009, Instructor Evaluation: 3.77/4.00 (mean), 4.00/4.00 (median).
18. **BME 170 Biomedical Engineering Lab**, UC Irvine, Spring 2009, Instructor Evaluation: 3.85/4.00 (mean), 3.85/4.00 (median).

19. **BME 233 Dynamic Systems in Biology and Medicine**, UC Irvine, Fall 2008, Instructor Evaluation: 3.90/4.00 (mean), 4.00/4.00 (median).
20. **BME 130 Biomedical Signals and Systems**, UC Irvine, Fall 2008, Instructor Evaluation: 3.53/4.00 (mean), 3.70/4.00 (median).
21. **BME 170 Biomedical Engineering Lab**, UC Irvine, Spring 2008, Instructor Evaluation: 3.83/4.00 (mean), 4.00/4.00 (median).
22. **BME 233 Dynamic Systems in Biology and Medicine**, UC Irvine, Winter 2008, Instructor Evaluation: 4.00/4.00 (mean), 4.00/4.00 (median).
23. **BME 130 Biomedical Signals and Systems**, UC Irvine, Fall 2007, Instructor Evaluation: 3.48/4.00 (mean), 3.70/4.00 (median).
24. **BME 170 Biomedical Engineering Lab**, UC Irvine, Spring 2007, Instructor Evaluation: 3.47/4.00 (mean), 3.70/4.00 (median).
25. **BME 295 Dynamic Systems with Applications to Biology and Medicine**, UC Irvine, Winter 2007, Instructor Evaluation: 4.00/4.00 (mean), 4.00/4.00 (median).
26. **BME 130 Biomedical Signals and Systems**, UC Irvine, Fall 2006, Instructor Evaluation: 3.61/4.00 (mean), 3.70/4.00 (median).
27. **BME 170 Biomedical Engineering Lab**, UC Irvine, Spring 2006, Instructor Evaluation: 3.57/4.00 (mean), 3.70/4.00 (median).
28. **BME 130 Biomedical Signals and Systems**, UC Irvine, Fall 2005, Instructor Evaluation: 3.44/4.00 (mean), 3.70/4.00 (median).
29. **SSM 326 Probability and Statistics for Engineering**, Washington University, Summer 2001, Instructor Evaluation: 7.78/9.00 (mean), 8.00/9.00 (median).
30. **SSM 490A Systems Engineering Laboratory**, Washington University, Spring 2001, Instructor Evaluation: 8.00/9.00 (mean), 8.00/9.00 (median).
31. **SSM 202 Introduction to Systems Science and Mathematics**, Washington University, Fall 2000, Instructor Evaluation: 7.27/9.00 (mean), 7.00/9.00 (median).
32. **SSM 326 Probability and Statistics for Engineering**, Washington University, Summer 2000, Instructor Evaluation: N/A.
33. **SSM 581 Instruments and Components for Automatic Control**, Washington University, Spring 2000, Instructor Evaluation: 8.33/9.00 (mean), 8.00/9.00 (median).

**Academic  
Advising**

- |                                       |   |
|---------------------------------------|---|
| <i>Postdocs</i>                       | 1. Po T. Wang, Ph.D., UC Irvine, 2014 - present.  |
| <i>Graduate<br/>Students</i>          | 2. Colin M. McCrimmon (MSTP), 2013 - present.<br>3. Agnieszka F. Szymanska (passed BME candidacy exam), 2012 - present  |
| <i>Undergraduate<br/>Students</i>     | 4. Nikki Koe, (BME, 2013 - present)<br>5. Christopher H. Shum, (BME, 2013 - present)  |
| <i>Former Gradu-<br/>ate Students</i> | 6. Ka-Ling Chan, <sup>1</sup> M.S. (SSM), 2000. (co-advisor, advisor: Bijoy K. Ghosh)<br>7. Koel Das, Ph.D. (EECS), 2006 - 2008.<br>8. Ashkan Hajirasooliha, M.S. (BME), 2011 - 2012.<br>9. Christine E. King, Ph.D. (BME), 2010 - 2014.<br>10. Chang Won Lee, Ph.D. (BME), 2006 - 2012.<br>11. Andrew Schombs, M.S. (BME), 2011 - 2014.<br>12. Po T. Wang, Ph.D. (BME), 2008 - 2014.<br>13. Victor Quintanar-Zilinskas, M.S. (BME), 2011 - 2014. |

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<sup>1</sup>at Washington University

- Former Post-docs* 14. Raul Benitez, Ph.D., Technical University of Catalonia, 2005 - 2006.  
15. Edward E. Branchaud, Ph.D., California Institute of Technology, 2005 - 2006.
- Former Rotation Students* 16. Nizan Friedman (BME), BME299, 2009.  
17. Sameeran Kunche (BME), BME299, 2007 - 2008.  
18. Sergey Osechinskiy (BME), BME299, 2006 - 2007.  
19. Nayan Patel (BME), BME299, 2009.  
20. Eric J. Puttock (MCB), BME299, 2013.  
21. Claire Robertson (BME), BME299, 2008.  
22. Justin Rowe (BME), BME299, 2010.  
23. Kathryn Scannell (MCB), BME299, 2014.  
24. Dwight Wynne (BME), BME299, 2007.  
25. Peng Zhang (BME), BME299, 2007.
- Former Visiting Students* 26. Alex Vallmitjana, B.S., Polytechnic University of Catalonia, 2012.  
27. Mohamad Saleh Esteki, B.S., Tehran University, 2012.  
28. Oskar Hjartquist, M.S. (Measurement Technology and Industrial Electrical Engineering), Lund University, 2011. (co-advisor, advisor: Prof. Frederik Sebelius)  
29. Lucas Silva Lopes, B.S. University of Brasilia, 2014.  
30. Časlav Miladinović, M.S. (Cognitive Sciences), University of Amsterdam, 2007. (co-advisor, advisor: Prof. Richard Ridderinkhof)
- Former Undergraduate Students* 31. Ahmad Abiri (EECS), BME199, UROP, 2010 - 2011  
32. Siavash Ahrar (EECS), SURP, 2009.  
33. Everardo Camacho, (BME), BME199, SURP, 2012 - 2014.  
34. Varshini Chakravarthy, (BME), BME199, SURP, 2010 - 2012.  
35. Ho Yiu Cheng (BME), BME199, 2006.  
36. Hieu Dang (BME), BME199, 2007.  
37. Kunal Dave, (BME), BME199, SURP, 2013 - 2014.  
38. Michael Doty, (BME), BME199, SURP, 2013 - 2014.  
39. Myra Fabro (BME), BME199, ID-SURE, 2005 - 2007.  
40. Sheilah B. Gleason,<sup>1</sup> (SSM), Honors Thesis, 2000. (co-advisor, advisor: Bijoy K. Ghosh)  
41. Andrew Emon Heidari (BME), BME199, 2008.  
42. Joshua Icuss (BME), BME199, ID-SURE, 2007.  
43. Ja Hyuk Koo, (BME), BME199, 2011.  
44. Trevor Law (BME), UC Irvine Honors Program, HSSoE Research Fellowship, SURP, 2006 - 2008.  
45. George Nasr, (BioSci), BME1999, 2010 - 2012.  
46. Jonathan Orosco, (EECS), BME199, 2010.  
47. Jay Patel (BME), BME199, 2010.  
48. Marvin Patel (BME), BME199, 2010.  
49. Sivasankar Ramarathinam, (DevBio), BME199, 2010 - 2012.  
50. Nirav Shah (BME), BME199, 2010.  
51. James Yamada (BME), UC Irvine Honors Program, UROP, 2008 - 2009.  
52. Richard Yi (BME-premedical), BME199, UROP, SURP, 2005 - 2007.  
53. David Yu (BME-premedical), BME199, 2005 - 2006.  
54. Allison Zemek (BME-premedical), SURP, 2008.

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<sup>1</sup>at Washington University

## Professional Service

### Professional Memberships

- The Institute of Electrical and Electronics Engineers (IEEE), IEEE Engineering in Medicine and Biology Society, The Mathematical Association of America (MAA), The Society for Neuroscience (SfN)

### Journal Editorials

- Journal of Biosensors & Bioelectronics, editorial board member, 2010 - 2013
- Journal of NeuroEngineering and Rehabilitation, associate editor, 2014 - present.

### Conference Program Committees

- 1st International Conference on Pattern Recognition Applications and Methods, Vilamoura, Algarve, Portugal, Feb 6th - 8th, 2012
- 2nd International Conference on Pattern Recognition Applications and Methods, Barcelona, Spain, Feb 15th - 18th, 2013

### Conference Session Chair

- 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Diego, CA, Aug 28th - Sep 1st, 2012, Brain-Machine Interfaces - V (chair)
- 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Boston, MA, Aug 30th - Sep 3rd, 2011, Biomedical Signal Classification: Neurological Data (co-chair)
- 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Boston, MA, Aug 30th - Sep 3rd, 2011, Brain-Machine Interfaces: III (co-chair)

### Refereeing Activity

- **Journals:** IEEE Transactions on Biomedical Engineering; Journal of Computational Neuroscience; Neural Computation; Journal of Neuroscience Methods; IEEE Transactions on Pattern Analysis and Machine Intelligence; Cancer Informatics, IEEE/ACM Transactions on Computational Biology and Bioinformatics; IEEE Signal Processing Letters; IEE Proceedings Vision, Image & Signal Processing; IEE Proceedings Circuits, Devices & Systems; Medical Engineering & Physics; Briefings in Functional Genomics; Journal of NeuroEngineering and Rehabilitation; Journal of Neural Engineering; Scientific Reports.
- **Conferences:** Neural Information Processing Systems Conference (NIPS), American Control Conference (ACC), International Conference on Pattern Recognition Applications and Methods (ICPRAM), European Signal Processing Conference (EUSIPCO), The IEEE Conference on Decision and Control (CDC), The International IEEE EMBS Neural Engineering Conference (NER)
- **Proposals:** Institute for Clinical and Translational Science (ICTS), UC Irvine, Pilot Project Awards Program; National Science Foundation

## University Service

- The graduate admissions committee (BME), 2014
- Accreditation board for engineering and technology (ABET) lead faculty, 2012 - 2014
- Undergraduate student committee (BME), 2009 - present
- Faculty search committee (Systems Biology-BME liaison), 2007 - present
- Committee on computing (HSSoE), BME liaison, 2006 - present
- Faculty search committee (BME), 2006 - 2007
- Seminar series coordinator (BME), 2006 - 2008
- Examiner, BME preliminary exam (Mathematics), 2005 - present
- Graduate student committee (BME), 2005 - 2006

## Invited Presentations

1. *Information Processing Challenges in Brain-Computer Interfaces*, University of Freiburg, BrainLinks-BrainTools, Freiburg, Germany, February 2015.
2. *Electrocorticogram Control of Upper Extremity Movements*, University of Southern California, Van Der Meulen Symposium: Neurorestoration, Los Angeles, CA, May 2014.

3. *Electrocorticogram Control of Upper Extremity Movements*, UC Irvine CCBS/MCSB Retreat, The Langham Huntington, Pasadena, CA, March 2014.
4. *Brain-Computer Interfaces for Neuroprosthetics and Neurorehabilitation*, Tel Aviv University, International Medical Innovation Technology Summit, Tel Aviv, Israel, November 2013.
5. *Information Processing Challenges in Brain-Computer Interfaces*, UC Los Angeles, Computer Science Seminars, Los Angeles, CA, October 2013.
6. *Towards Neural Rehabilitation: Brain-Computer Interface Research at the University of California, Irvine*, SCI Special Fund, Balboa Bay Club, Newport Beach, CA, November 2012.
7. *Brain-Computer Interfaces for Clinical Applications*, Polytechnic University of Catalonia, Biomedical Engineering Research Centre, Barcelona, Spain, March 2012.
8. *Biomedical Signal Processing in Neurosurgical and Neurological Applications*, UC Irvine Medical Center, Department of Neurosurgery Grand Rounds, Orange, CA, April 2010.
9. *Brain-Computer Interface Controlled Walking Simulator*, UC Irvine, California Spinal Cord/Neural Regeneration Consortium, Roman Reed Meeting, Irvine, CA, March 2010.
10. *Information Processing for Brain-Computer Interfaces*, California Institute of Technology, Burdick Fest, Pasadena, CA, January 2010.
11. *Brain-Computer Interface Controlled Walking Simulator*, UC Irvine, California Spinal Cord/Neural Regeneration Consortium, Roman Reed Meeting, Irvine, CA, March 2009.
12. *Control of Extracellular Neural Recordings via Stochastic Optimization*, UC Irvine CCBS/MCSB Retreat, The Portofino Hotel & Yacht Club, Redondo Beach, CA, March 2007.
13. *Extracellular Neural Recordings: Signal Processing and Control*, UC Irvine, LifeChips Workshop, Irvine, CA, March 2007.
14. *Signal Processing and Data Analysis for Brain-Machine Interfaces: Challenges and Perspectives*, Northwestern University, Biomedical Engineering Department, Evanston, IL, May 2006.
15. *Biomedical Signal Processing, Computation and Control*, UC Irvine, BME Corporate Advisory Board Meeting, Irvine, CA, October 2005.
16. *Neural Prosthesis: Engineering Challenges and Perspectives*, UC Irvine, Industry Research Symposium, Irvine, CA, May 2005.
17. *Optimization of Extracellular Recordings: Control Algorithm and Unsupervised Signal Processing*, UC Irvine, Department of Biomedical Engineering, Irvine, CA, May 2004.
18. *Signal Processing, Computation and Estimation in Biological Neural Networks*, California Institute of Technology, Robotics Lab & Andersen Lab, Pasadena, CA, July 2001.
19. *Signal Processing, Computation and Estimation in Biological Neural Networks*, Brown University, Brain Science Program, Providence, RI, April 2001.
20. *Control of Arm Movements Using A Population of Neurons*, Washington University, Computational Neuroscience, St. Louis, MO, April 2000.

## Publications DISSERTATIONS

- [D1] **Z. Nenadic**. Signal Processing, Computation and Estimation in Biological Neural Networks. D.Sc. Dissertation, Washington University, St. Louis, MO, 2001.
- [D2] **Z. Nenadic**. On Stability of Linear Systems With Delayed State Defined Over Finite Time Interval. Diploma Thesis, University of Belgrade, Belgrade, Serbia, 1995.

## JOURNAL ARTICLES

- [J1] R.D. Flint, P.T. Wang, Z.A. Wright, C.E. King, M.O. Krucoff, S.U. Schuele, J.M. Rosenow, F.P.K. Hsu, C.Y. Liu, J.J. Lin, M. Sazgar, D.E. Millett, S.J. Shaw, **Z. Nenadic**, A.H. Do, and M.W. Slutzky, Extracting kinetic information from human motor cortical signals, *Neuroimage*, vol. 101, pp. 695–703, 2014. (©2014 Elsevier Ltd. Copy available upon request)
- [J2] C.E. King, K.R. Dave, P.T. Wang, M. Mizuta, D.J. Reinkensmeyer, A.H. Do, S. Moromugi, and **Z. Nenadic**, Performance assessment of a brain-computer interface driven hand orthosis, *Ann. Biomed. Eng.*, vol. 42(10), pp. 2095–2105, 2014.
- [J3] A.H. Do, P.T. Wang, C.E. King, S.N. Chun, **Z. Nenadic**, Brain-computer interface controlled robotic gait orthosis, *J. NeuroEng. Rehabil.*, vol. 10(111), 2013. (highly accessed)
- [J4] C.E. King, P.T. Wang, L.A. Chui, A.H. Do, and **Z. Nenadic**, Operation of a brain-computer interface walking simulator for individuals with spinal cord injury, *J. NeuroEng. Rehabil.*, vol. 10(77), 2013.
- [J5] N.D. Olivas, V. Quintanar-Zilinskas, **Z. Nenadic**, and X. Xu, Laminar circuit organization and response modulation in mouse visual cortex. *Front. Neural Circuit.*, vol. 6(70), 2012.
- [J6] P.T. Wang, C.E. King, L.A. Chui, A.H. Do, and **Z. Nenadic**, Self-paced brain-computer interface control of ambulation in a virtual reality environment, *J. Neural Eng.*, vol. 9, pp. 056016, 2012.
- [J7] S.-C. Wu, A.L. Swindlehurst, P.T. Wang, and **Z. Nenadic**, Efficient dipole parameter estimation in EEG systems with near-ML performance, *IEEE T. Bio-med. Eng.*, vol. 59(5), pp. 1339–1348, 2012.
- [J8] S.-C. Wu, A.L. Swindlehurst, P.T. Wang, and **Z. Nenadic**, Projection vs. prewhitening for EEG interference suppression, *IEEE T. Bio-med. Eng.*, vol. 59(5), pp. 1329–1338, 2012.
- [J9] A.H. Do, P.T. Wang, C.E. King, A. Abiri, and **Z. Nenadic**, Brain-computer interface controlled functional electrical stimulation system for ankle movement, *J. NeuroEng. Rehabil.*, vol. 8(49), 2011. (highly accessed)
- [J10] P.T. Wang, C.E. King, A.H. Do, and **Z. Nenadic**, A durable, low-cost electrogoniometer for dynamic measurement of joint trajectories, *Med. Eng. Phys.*, vol. 33(5), pp. 546–552, 2011. (©2011 Elsevier Ltd. Copy available upon request)
- [J11] Y. Shi, **Z. Nenadic**, and X. Xu, Novel use of matched filtering for synaptic event detection and extraction, *PLoS ONE*, vol. 5(11), e15517, 2010.
- [J12] X. Xu, N.D. Olivas, R. Levi, T. Ikrar, and **Z. Nenadic**, High precision and fast functional mapping of cortical circuitry through a combination of voltage sensitive dye imaging and laser scanning photostimulation, *J. Neurophysiol.*, vol. 103(4), pp. 2301–2312, 2010.
- [J13] K. Das, D.S. Rizzuto, and **Z. Nenadic**, Mental state estimation for brain-computer interface, *IEEE T. Bio-med. Eng.*, vol. 56(8), pp. 2114–2122, 2009.
- [J14] K. Das and **Z. Nenadic**, An efficient discriminant-based solution for small sample size problem, *Pattern Recogn.*, vol. 42(5), pp. 857–866, 2009. (©2009 Elsevier Ltd. Copy available upon request)

- [J15] C.Q. Dang, **Z. Nenadic**, and G.S. Kassab, A comparative analysis of coronary and aortic waveforms, *Ann. Biomed. Eng.*, vol. 36(6), pp. 933–946, 2008. (With kind permission from Springer Science and Business Media)
- [J16] K. Das and **Z. Nenadic**, Approximate information discriminant analysis: A computationally simple heteroscedastic feature extraction technique, *Pattern Recogn.*, vol. 41(5), pp. 1548–1557, 2008. (©2008 Elsevier Ltd. Copy available upon request)
- [J17] R. Benitez and **Z. Nenadic**, Robust unsupervised detection of action potentials with probabilistic models, *IEEE T. Bio-med. Eng.*, vol. 55(4), pp. 1344–1354, 2008.
- [J18] **Z. Nenadic**, Information discriminant analysis: Feature extraction with an information-theoretic objective, *IEEE T. Pattern Anal.*, vol. 29(8), pp. 1394–1407, 2007.
- [J19] **Z. Nenadic**, and J.W. Burdick, A control algorithm for autonomous optimization of extracellular recordings, *IEEE T. Bio-med. Eng.*, vol. 53(5), pp. 941–955, 2006.
- [J20] J.G. Cham, E.A. Branchaud, **Z. Nenadic**, B. Greger, R.A. Andersen, and J.W. Burdick, Semi-chronic motorized microdrive and control algorithm for autonomously isolating, optimizing and maintaining extracellular action potentials, *J. Neurophysiol.*, 93(1): 570–579, 2005.
- [J21] **Z. Nenadic** and J.W. Burdick, Spike detection using the continuous wavelet transform, *IEEE T. Bio-med. Eng.*, vol. 52(1), pp. 74–87, 2005.
- [J22] **Z. Nenadic** and B.K. Ghosh, Encoding and decoding of analog signals with a population of neurons, *Math. Comput. Model.*, vol. 39(2-3), pp. 181–196, 2004.
- [J23] **Z. Nenadic**, B.K. Ghosh, and P. Ulinski, Propagating waves in visual cortex: A large-scale model of turtle visual cortex, *J. Comput. Neurosci.*, vol. 14(2), pp. 161–184, 2003. (With kind permission from Springer Science and Business Media)
- [J24] **Z. Nenadic**, B.K. Ghosh, and P.S. Ulinski, Modeling and estimation problems in the turtle visual cortex, *IEEE T. Bio-med. Eng.*, vol. 49(8), pp. 753–762, 2002.
- [J25] **Z. Nenadic**, C.H. Anderson, and B.K. Ghosh, Control of arm movement using population of neurons, *Math. Comput. Model.*, vol. 35(11-12), pp. 1261–1269, 2002.
- [J26] **Z. Nenadic**, B. Ghosh, and P. Ulinski, Propagating waves in visual cortex: A large scale model of turtle visual cortex, *Math. Comput. Model.*, vol. 35(7-8), pp. 743–749, 2002.
- [J27] **Z. Nenadic** and B.K. Ghosh, Signal processing and control problems in the brain, *IEEE Contr. Syst. Mag.*, vol. 21(4), pp. 28–41, 2001. (invited)
- [J28] **Z. Nenadic**, B. Ghosh, and P. Ulinski, Spatiotemporal dynamics in a model of turtle visual cortex, *Neurocomputing*, vol. 32-33, pp. 479–486, 2000. (©2000 Elsevier Ltd. Copy available upon request)
- [J29] M.P. Lazarevic, D.L. Debeljkovic, **Z.L. Nenadic**, and S.A. Milinkovic, Finite-time stability of delayed systems, *IMA J. Math. Control I.*, vol. 17(2), pp. 101–109, 2000.

#### PEER REVIEWED BOOK CHAPTERS

- [BC1] **Z. Nenadic**, D.S. Rizzuto, R.A. Andersen, and J.W. Burdick. Advances in cognitive neural prosthesis: Recognition of neural data with an information-theoretic objective, in G. Dornhege, J.R. Millán, T. Hinterberger, D.J. McFarland, and K.-R. Müller (eds.), *Toward Brain Computer Interfacing*, pp. 175–190, MIT Press, 2007.

#### REFEREED CONFERENCE ARTICLES



- [C1] A.F. Szymanska, M. Doty, K.V. Scannell, and **Z. Nenadic**, A supervised multi-sensor matched filter for the detection of extracellular action potentials, *in Proc. of the 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, pp. 5996–5999, 2014.
- [C2] K. Scannell, A.F. Szymanska, and **Z. Nenadic**, Intrinsic dimensionality of extracellular action potentials, *in Proc. of the 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, pp. 3228–3231, 2014.
- [C3] C.M. McCrimmon, C.E. King, P.T. Wang, S.C. Cramer, **Z. Nenadic**, and A.H. Do, Brain-controlled functional electrical stimulation for lower-limb motor recovery in stroke survivors, *in Proc. of the 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, pp. 1247–1250, 2014.
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