Reza Sameni, PhD

Visiting Associate Professor, IEEE Senior Member
Department of Biomedical Informatics
School of Medicine, Emory University
101 Woodruff Circle
Atlanta, GA 30322, US

Email: rsameni@dbmi.emory.edu
Web: www.sameni.info
The Alphanumerics Research Lab: www.sameni.org
Profiles: ORCID, Google Scholar, LinkedIn, ResearchGate

PERSONAL

Birth: September 21st, 1977, Shiraz, Iran
Citizenship: Iranian
Marital status: Married to Maryam Shariat
Children: Two daughters; Baran and Bahar
Languages: Persian (maternal), English (fluent), French (good), Arabic (basic)

CAREER

- Visiting Associate Prof., Dept. of Biomed. Informatics, Emory University School of Medicine, GA, US, *Since Jul 2020*
- Invited Researcher, GIPSA-lab, Université Grenoble Alpes, Grenoble, France, *Sep 2018–Jul 2020*
- Associate Prof., School of ECE, Shiraz University, Shiraz, Iran, *Sep 2008–Sep 2019*

EDUCATION

- **PhD in Electrical Engineering, Sharif University of Technology (SUT), Tehran, Iran** ***2003–2008***
- **PhD in Signal Processing and Telecommunications, GIPSA-lab, INPG, Grenoble, France** ***2005–2008***

  Double PhD degree (*co-tutelle*) from Sharif University of Technology and Institut National Polytechnique de Grenoble (INPG); graduated with Honor.

  Major: Statistical Signal Processing & Bioelectrical Engineering

  Thesis: Non-invasive extraction and processing of fetal cardiac signals from an array of maternal abdominal sensors
- **MSc in Electrical Engineering, Sharif University of Technology, Tehran, Iran** ***2000–2003***

  Major: Bioelectrical Engineering

  Thesis: Classification of EEG signals for brain-computer interface (BCI) applications
- **BSc in Electrical Engineering, Shiraz University, Shiraz, Iran** ***1996–2000***

  Major: Electronics

HONORS

- Distinguished Academic Faculty of Electrical & Computer Engineering (yearly award), Shiraz University, Iran, 2012
- PhD thesis award of INPG (Prix de Thèse de Grenoble INP), in Signal Processing and Telecommunications, Grenoble, France, 2010

- First Place Award in Electrical Engineering, Dr. Mojtahedi Innovation Award, Sharif University of Technology Association (SUTA), Tehran, Iran, 2010
- Gold medal of Young Inventor from the World Intellectual Property Organization (WIPO) on the occasion of the 23rd Khwarizmi International contest, Tehran, Iran, 2010
- Young Scientist Award from the Academy of Sciences for the Developing World (TWAS), Tehran, Iran, 2010
- Second Place Award of Innovation, 23rd Khwarizmi International Award (KIA), Tehran, Iran, 2010
- Rhône-Alpes region scholarship, Grenoble, France, 2008
- Eiffel PhD Scholarship of Excellence from the French government, Grenoble, France, 2007
- PhD scholarship from the French government (BGF), 2005
- Research assistant scholarship from Sharif University of Technology, Tehran, Iran, 2004
- PhD scholarship and post-doctoral faculty position from Shiraz University, Shiraz, Iran, 2003

TEACHING

Graduate

Estimation theory & optimal filtering; Biological system modeling; Signal processing in time, frequency, and space; Digital signal processing; Reconfigurable architectures

Undergraduate

Signals & systems; Signal processing lab; Electrical circuit theory; Electrical circuit lab; Linear control systems; Technical communication; Digital system design; Digital system design lab; Principles of electrical engineering

RESEARCH

Interests

Statistical signal and data processing (especially for biomedical applications), system and data modeling, digital system design, software defined radio systems.

Publications

Check my Google Scholar profile for an up to date list of publications.

Patents

P1 R. Sameni, C. Jutten, M. Shamsollahi, and G. Clifford. Extraction of Fetal Cardiac Signals, June 2010a. Licensed to MindChild Medical Inc

Book Chapters

B1 R. Sameni. *Noninvasive Fetal Electrocardiography: Models, Technologies, and Algorithms*, pages 99–146. Springer International Publishing, Cham, 2021a. ISBN 978-3-030-54403-4. doi: 10.1007/978-3-030-54403-4_5. URL https://doi.org/10.1007/978-3-030-54403-4_5

Journal Papers

J1 R. Sameni. Model-based prediction and optimal control of pandemics by nonpharmaceutical interventions. *arXiv preprint*, 2021b. URL https://arxiv.org/abs/2102.06609

J2 E. Sulas, M. Urru, R. Tumbarello, L. Raffo, R. Sameni, and D. Pani. A non-invasive multimodal foetal ECG-Doppler dataset for antenatal cardiology research. *Scientific Data*, 8(1), jan 2021. doi: 10.1038/s41597-021-00811-3. URL https://doi.org/10.1038/s41597-021-00811-3

J3 M. Rahbar Alam and R. Sameni. Automatic wake-sleep stages classification using electroencephalogram instantaneous frequency and envelope tracking. *bioRxiv*, 2020. doi: 10.1101/2020.05.13.092841. URL https://www.biorxiv.org/content/early/2020/05/15/2020.05.13.092841

J4 S. Tomassini, A. Sbrollini, A. Strazza, R. Sameni, I. Marcantoni, M. Morettini, and L. Burattini. AdvFPCG-delineator: Advanced delineator for fetal phonocardiography. *Biomedical Signal Processing and Control*, 61:102021, Aug 2020. doi: 10.1016/j.bspc.2020.102021. URL https://doi.org/10.1016/j.bspc.2020.102021

J5 R. Sameni. Mathematical modeling of epidemic diseases; a case study of the covid-19 coronavirus. *arXiv preprint*, 2020. URL https://arxiv.org/abs/2003.11371

J6 F. Jamshidian-Tehrani, R. Sameni, and C. Jutten. Temporally Nonstationary Component Analysis; Application to Noninvasive Fetal Electrocardiogram Extraction. *IEEE Transactions on Biomedical Engineering*, 67(5):1377–1386, 2020. doi: 10.1109/TBME.2019.2936943. URL http://dx.doi.org/10.1109/TBME.2019.2936943

J7 A. Zollanvari, A. P. James, and R. Sameni. A theoretical analysis of the peaking phenomenon in classification. *Journal of Classification*, Jul 2019. ISSN 1432-1343. doi: 10.1007/s00357-019-09327-3. URL https://doi.org/10.1007/s00357-019-09327-3

J8 F. Jamshidian-Tehrani and R. Sameni. Fetal ECG extraction from time-varying and low-rank noninvasive maternal abdominal recordings. *Physiological Measurement*, Nov 2018. URL http://dx.doi.org/10.1088/1361-6579/aaef5d

J9 F. Karimzadeh, R. Boostani, E. Seraj, and R. Sameni. A distributed classification procedure for automatic sleep stage scoring based on instantaneous electroencephalogram phase and envelope features. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 26(2):362–370, Feb 2018. ISSN 1534-4320. URL https://doi.org/10.1109/TNSRE.2017.2775058

J10 R. Sameni and E. Seraj. A robust statistical framework for instantaneous electroencephalogram phase and frequency estimation and analysis. *Physiological Measurement*, 38(12):2141–2163, 2017. URL http://dx.doi.org/10.1088/1361-6579/aa93a1

J11 M. Fatemi and R. Sameni. An Online Subspace Denoising Algorithm for Maternal ECG Removal from Fetal ECG Signals. *Iranian Journal of Science and Technology, Transactions of Electrical Engineering*, 2017:1–15, April 2017. URL http://dx.doi.org/10.1007/s40998-017-0018-4

J12 H. Hassani Saadi, R. Sameni, and A. Zollanvari. Interpretive time-frequency analysis of genomic sequences. *BMC Bioinformatics*, 18(4):154, 2017. ISSN 1471-2105. URL http://dx.doi.org/10.1186/s12859-017-1524-0

J13 E. Seraj and R. Sameni. Robust electroencephalogram phase estimation with applications in brain-computer interface systems. *Physiological Measurement*, 38(3):501, 2017. URL https://doi.org/10.1088/1361-6579/aa5bba

J14 R. Sameni. Online filtering using piecewise smoothness priors: Application to normal and abnormal electrocardiogram denoising. *Signal Processing*, 133(4):52 – 63, April 2017. ISSN 0165-1684. URL https://doi.org/10.1016/j.sigpro.2016.10.019

J15 C. Liu, D. Springer, Q. Li, B. Moody, R. A. Juan, F. J. Chorro, F. Castells, J. M. Roig, I. Silva, A. E. W. Johnson, Z. Syed, S. E. Schmidt, C. D. Papadaniil, L. Hadjileontiadis, H. Naseri, A. Moukadem, A. Dieterlen, C. Brandt, H. Tang, M. Samieinasab, M. R. Samieinasab, R. Sameni, R. G. Mark, and G. D. Clifford. An open access database for the evaluation of heart sound algorithms. *Physiological Measurement*, 37(12):2181–2213, 2016. URL https://doi.org/10.1088/0967-3334/37/12/2181

J16 J. Behar, T. Zhu, J. Oster, A. Niksch, D. Y. Mah, T. Chun, J. Greenberg, C. Tanner, J. Harrop, R. Sameni, J. Ward, A. J. Wolfberg, and G. D. Clifford. Evaluation of the fetal QT interval using non-invasive fetal ECG technology. *Physiological Measurement*, 37(9):1392–1403, September 2016. URL https://doi.org/10.1088/0967-3334/37/9/1392

J17 H. Biglari and R. Sameni. Fetal motion estimation from noninvasive cardiac signal recordings. *Physiological Measurement*, 37(11):2003–2023, November 2016. URL https://doi.org/10.1088/0967-3334/37/11/2003

J18 E. Nikahd, P. Behnam, and R. Sameni. High-speed hardware implementation of fixed and runtime variable window length 1-d median filters. *IEEE Transactions on Circuits and Systems II: Express Briefs*, 63(5):478–482, 2016. URL https://doi.org/10.1109/TCSII.2015.2504945

J19 F. Razavipour and R. Sameni. A Study of Event Related Potential Frequency Domain Coherencyusing Multichannel Electroencephalogram Subspace Analysis. *Journal of Neuroscience Methods*, 249:22–28, July 2015. URL http://dx.doi.org/10.1016/j.jneumeth.2015.03.037

J20 R. Sameni and C. Gouy-Pailler. An Iterative Subspace Denoising Algorithm for Removing Electroencephalogram Ocular Artifacts. *Journal of Neuroscience Methods*, 225(3):97–105, March 2014. URL http://dx.doi.org/10.1016/j.jneumeth.2014.01.024

J21 E. K. Roonizi and R. Sameni. Morphological modeling of cardiac signals based on signal decomposition. *Computers in Biology and Medicine*, 43(10):1453–1461, October 2013. ISSN 0010-4825. URL http://dx.doi.org/10.1016/j.compbiomed.2013.06.017

J22 F. Razavipour and R. Sameni. A General Framework for Extracting Fetal Magnetoencephalogram and Audio-Evoked Responses. *Journal of Neuroscience Methods*, 212(2):283–296, January 2013. URL http://dx.doi.org/10.1016/j.jneumeth.2012.10.021

J23 L. Moraru, R. Sameni, U. Schneider, J. Haueisen, E. Schleußner, and D. Hoyer. Validation of fetal auditory evoked cortical responses to enhance the assessment of early brain development using fetal MEG measurements. *Physiological Measurements*, 32(11):1847–1868, October 2011. URL http://dx.doi.org/10.1088/0967-3334/32/11/002

J24 G. Clifford, R. Sameni, J. Ward, J. Robinson, and A. J. Wolfberg. Clinically accurate fetal ECG parameters acquired from maternal abdominal sensors. *American Journal of Obstetrics and Gynecology*, 205(1):47.e1–47.e5, July 2011. URL https://doi.org/10.1016/j.ajog.2011.02.066

J25 R. Sameni and G. D. Clifford. A Review of Fetal ECG Signal Processing; Issues and Promising Directions. *The Open Pacing, Electrophysiology & Therapy Journal (TOPETJ)*, 3:4–20, November 2010. URL 10.2174/1876536X01003010004

J26 G. Clifford, S. Nemati, and R. Sameni. An Artificial Vector Model for Generating Abnormal Electrocardiographic Rhythms. *Physiological Measurements*, 31(5):595–609, May 2010. URL https://dx.doi.org/10.1088/0967-3334/31/5/001

J27 R. Sameni, C. Jutten, and M. B. Shamsollahi. A deflation procedure for subspace decomposition. *Signal Processing, IEEE Transactions on*, 58(4):2363–2374, 2010b. URL https://doi.org/10.1109/TSP.2009.2037353

J28 T. Tsalaile, R. Sameni, S. Sanei, C. Jutten, and J. Chambers. Sequential Blind Source Extraction For Quasi-Periodic Signals With Time-Varying Period. *Biomedical Engineering, IEEE Transactions on*, 56(3):646–655, March 2009. URL https://doi.org/10.1109/TBME.2008.2002141

J29 R. Sameni, C. Jutten, and M. B. Shamsollahi. Multichannel Electrocardiogram Decomposition using Periodic Component Analysis. *Biomedical Engineering, IEEE Transactions on*, 55(8):1935–1940, Aug 2008a. URL https://doi.org/10.1109/TBME.2008.919714

J30 R. Sameni, M. B. Shamsollahi, and C. Jutten. Model-based Bayesian filtering of cardiac contaminants from biomedical recordings. *Physiological Measurement*, 29(5):595–613, May 2008b. URL https://doi.org/10.1088/0967-3334/29/5/006

J31 R. Sameni, M. B. Shamsollahi, C. Jutten, and G. D. Clifford. A nonlinear bayesian filtering framework for ECG denoising. *Biomedical Engineering, IEEE Transactions on*, 54(12):2172–2185, December 2007b. URL https://doi.org/10.1109/TBME.2007.897817

J32 R. Sameni, G. D. Clifford, C. Jutten, and M. B. Shamsollahi. Multichannel ECG and Noise Modeling: Application to Maternal and Fetal ECG Signals. *EURASIP Journal on Advances in Signal Processing*, 2007:Article ID 43407, 14 pages, 2007a. URL https://doi.org/10.1155/2007/43407

Conference Papers

C1 N. Katebi, R. Sameni, and G. D. Clifford. Deep sequence learning for accurate gestational age estimation from a $25 doppler device, 2020

C2 H. Narimani and R. Sameni. Electrocardiogram denoising using h-infinity filters. In *Electrical Engineering (ICEE), 2015 23rd Iranian Conference on*, May 2015. In Persian

C3 M. Samieinasab and R. Sameni. Fetal phonocardiogram extraction using single channel blind source separation. In *Electrical Engineering (ICEE), 2015 23rd Iranian Conference on*, May 2015. URL https://doi.org/10.1109/IranianCEE.2015.7146186

C4 M. Haghpanahi, R. Sameni, and D. A. Borkholder. Scoring consensus of multiple ECG annotators by optimal sequence alignment. In *Engineering in Medicine and Biology Society (EMBC), 2014 36th Annual International Conference of the IEEE*, pages 1855–1859. IEEE, 2014. URL https://doi.org/10.1109/EMBC.2014.6943971

C5 J. Behar, A. Wolfberg, T. Zhu, J. Oster, A. Niksch, D. Mah, T. Chun, J. Greenberg, C. Tanner, J. Harrop, A. V. Esbroeck, A. Alexander, M. McCarroll, T. Drake, A. Silber, R. Sameni, J. Ward, and G. Clifford. Evaluation of the fetal QT interval using non-invasive fetal ECG technology. In *American Journal of Obstetrics and Gynecology*, volume 210, pages S283–S284, New Orleans, LA, February 2014. Society for Maternal-Fetal Medicine. URL https://doi.org/10.1016/j.ajog.2013.10.609

C6 M. Fatemi, M. Niknazar, and R. Sameni. A Robust Framework for Noninvasive Extraction of Fetal Electrocardiogram Signals. In *Proceedings of the 40th Annual International Conference on Computers in Cardiology*, pages 201–204, Zaragoza, Spain, September 22-25 2013

C7 F. Razavipour, M. Haghpanahi, and R. Sameni. Fetal QRS Complex Detection using Semi-Blind Source Separation Framework. In *Proceedings of the 40th Annual International Conference on Computers in Cardiology*, pages 181–184, Zaragoza, Spain, September 22-25 2013

C8 I. Silva, J. Behar, R. Sameni, T. Zhu, J. Oster, G. D. Clifford, and G. B. Moody. Noninvasive Fetal ECG: The PhysioNet/Computing in Cardiology Challenge 2013. In *Proceedings of the 40th Annual International Conference on Computers in Cardiology*, pages 149–152, Zaragoza, Spain, September 22-25 2013

C9 M. Fatemi and R. Sameni. Application of second and higher order subspace tracking in multichannel data analysis. In *Biomedical Engineering (ICBME), 2013 20th Iranian Conference on*, pages 161–165, Dec 2013. URL http://dx.doi.org/10.1109/ICBME.2013.6782211

C10 R. Sameni. A Linear Kalman Notch Filter for Power-Line Interference Cancellation. In *Proceedings of the 16th CSI International Symposium on Artificial Intelligence and Signal Processing (AISP)*, pages 604–610, Shiraz, Iran, 2-3 May 2012 2012. URL https://doi.org/10.1109/AISP.2012.6313817

C11 H. Hassani Saadi and R. Sameni. Using matched filters for similarity search in genomic data. In *Proceedings of the 16th CSI International Symposium on Artificial Intelligence and Signal Processing (AISP)*, pages 469–472, Shiraz, Iran, 2-3 May 2012 2012. URL https://doi.org/10.1109/AISP.2012.6313793

C12 B. Vahabzadeh and R. Sameni. The Notion of Cardiac Phase and its Applications in Electrophysiological Studies. In *Biomedical Engineering (BioMed 2012)*, Innsbruck, Austria, February 15–17 2012. URL http://dx.doi.org/10.2316/P.2012.764-127

C13 C. McDonnell, G. Clifford, R. Sameni, J. Ward, J. Robertson, and A. Wolfberg. Comparison of abdominal sensors to a fetal scalp electrode for fetal ST analysis during labor. In *American Journal of Obstetrics and Gynecology*, volume 204, pages S256–S256. Society for Maternal-Fetal Medicine, January 2011. URL http://dx.doi.org/10.1016/j.ajog.2010.10.669

C14 R. Sameni, G. D. Clifford, J. Ward, J. Robertson, C. Pettigrew, and A. J. Wolfberg. Accuracy of fetal heart rate acquired from sensors on the maternal abdomen compared to a fetal scalp electrode. In *American Journal of Obstetrics and Gynecology*, volume 201, pages S241–S241, Chicago, IL, December 2009. Society for Maternal-Fetal Medicine. URL http://dx.doi.org/10.1016/j.ajog.2009.10.529

C15 G. D. Clifford, R. Sameni, J. Ward, J. Robertson, C. Pettigrew, and A. J. Wolfberg. Comparing the fetal ST-segment acquired using a FSE and abdominal sensors. In *American Journal of Obstetrics and Gynecology*, volume 201, pages S242–S242, Chicago, IL, December 2009. Society for Maternal-Fetal Medicine. URL http://dx.doi.org/10.1016/j.ajog.2009.10.535

C16 C. Gouy-Pailler, R. Sameni, M. Congedo, and C. Jutten. Iterative Subspace Decomposition for Ocular Artifact Removal from EEG Recordings. In *Proc. of the 8th Intl. Conf. on Independent Component (ICA 2009)*, pages 419–426, Paraty, Brazil, 2009. URL https://link.springer.com/chapter/10.1007/978-3-642-00599-2_53

C17 L. Moraru, R. Sameni, U. Schneider, C. Jutten, J. Haueisen, and D. Hoyer. Identification of fetal auditory evoked cortical responses using a denoising method based on periodic component analysis. In *Proceedings of the 4th European Conference of the International Federation for Medical and Biological Engineering (ECIFMBE 2008)*, pages 1390–1393, Antwerp, Belgium, 2008. URL https://link.springer.com/chapter/10.1007/978-3-540-89208-3_329

C18 M. Congedo, C. Jutten, R. Sameni, and C. Gouy-Pailler. A new General Weighted Least-Squares Algorithm for Approximate Joint Diagonalization. In *Proceedings of the 4th International BCI Workshop*, Graz, Austria, 2008

C19 G. Clifford, S. Nemati, and R. Sameni. An Artificial Multi-Channel Model for Generating Abnormal Electrocardiographic Rhythms. In *Computers in Cardiology, 2008*, pages 773–776, Bologna, Italy, September 14–17 2008

C20 L. Amini, R. Sameni, C. Jutten, G. Hossein-Zadeh, and H. Soltanian-Zadeh. MR Artifact Reduction in the Simultaneous Acquisition of EEG and fMRI of Epileptic Patients. In *EUSIPCO2008 - 16th European Signal Processing Conf.*, Lausanne, Switzerland, August 25-29 2008

C21 O. Sayadi, R. Sameni, and M. Shamsollahi. ECG Denoising Using Parameters of ECG Dynamical Model as the States of an Extended Kalman Filter. In *Engineering in Medicine and Biology Society, 2007. EMBS 2007. 29th Annual International Conference of the IEEE*, pages 2548–2551, Aug. 2007. doi: 10.1109/IEMBS.2007.4352848. URL https://doi.org/10.1109/IEMBS.2007.4352848

C22 R. Sameni, M. Shamsollahi, and C. Jutten. Multi-Channel Electrocardiogram Denoising Using a Bayesian Filtering Framework. In *Proc. of the 33rd Annual International Conference on Computers in Cardiology*, pages 185–188, Valencia, Spain, September 17-20 2006b. URL http://cinc.mit.edu/archives/2006/

C23 C. Jutten, R. Sameni, and H. Hauksdóttir. On the Relevance of Independent Components. In *Proc. of the ICA Research Network International Workshop (ICArn 2006)*, pages 1–8, Liverpool, UK, September 18-19 2006

C24 R. Sameni, C. Jutten, and M. B. Shamsollahi. What ICA Provides for ECG Processing: Application to Noninvasive Fetal ECG Extraction. In *Proc. of the International Symposium on Signal Processing and Information Technology (ISSPIT'06)*, pages 656–661, Vancouver, Canada, August 2006a. URL https://doi.org/10.1109/ISSPIT.2006.270882

C25 R. Sameni, F. Vrins, F. Parmentier, C. Hérail, V. Vigneron, M. Verleysen, C. Jutten, and M. Shamsollahi. Electrode Selection for Noninvasive Fetal Electrocardiogram Extraction using Mutual Information Criteria. In *Proc. of the 26th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering (MaxEnt 2006)*, volume 872, pages 97–104, CNRS, Paris, France, July 8-13 2006c. URL http://hdl.handle.net/2078.1/90753

C26 R. Sameni, M. B. Shamsollahi, C. Jutten, and M. Babaie-Zadeh. Filtering Noisy ECG Signals Using the Extended Kalman Filter Based on a Modified Dynamic ECG Model. In *Proceedings of the 32nd Annual International Conference on Computers in Cardiology*, pages 1017–1020, Lyon, France, September 25-28 2005b

C27 R. Sameni, M. B. Shamsollahi, and C. Jutten. Filtering Electrocardiogram Signals Using the Extended Kalman Filter. In *Proceedings of the 27th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS)*, pages 5639–5642, Shanghai, China, September 1-4 2005a. URL https://doi.org/10.1109/IEMBS.2005.1615765

C28 R. Sameni, M. Shamsollahi, and L. Senhadji. Processing Polysomnographic Signals, using Independent Component Analysis. In *Proc. Of the International Conference on Biomedical Engineering (BIOMED 2004)*, pages 193–196, Innsbruck, Austria, February 2004

C29 R. Sameni and M. Shamsollahi. Discrimination of EEG Signals during the Performance of Different Mental Tasks. In *Proc. of the World Congress on Medical Physics and Biomedical Engineering*, Sydney, Australia, August 24-29 2003. [CD-ROM] ISBN 1877040142, Poster Paper No. 4251

Unpublished & Working Papers

U1 R. Sameni. Spatio-Temporal Source Separation using Temporal Priors with Parameterized Uncertainties. working paper or preprint, Oct. 2016. URL https://hal.archives-ouvertes.fr/hal-01382035

U2 R. Sameni. Towards Distributed Component Analysis. working paper or preprint, Oct. 2015. URL https://hal.archives-ouvertes.fr/hal-01382076

U3 R. Sameni. Multipole Expansion of Body Surface Potentials: An ICA Oriented Formulation (Part I). Technical Report, November 2007

U4 R. Sameni. Analysis of Iterative Approaches of Interpolation-Distortion Compensation. Technical report, GIPSA-LAB, INP-Grenoble, March 2004b. DSPII course term paper, Sharif University of Technology

U5 R. Sameni. Writing Efficient Matlab Codes. Technical report, Lecture Notes, Sharif University of Technology, 2006a

U6 R. Sameni. Removing ECG Artifacts from EEG Recordings. Technical Report, May 2006b

U7 R. Sameni. Discrimination of EEG Patterns during the Performance of Different Mental Activities. Technical report, Research Project Report, Sharif University of Technology, 2004a

U8 R. Sameni. Design and Implementation of a Portable Hotwire Anemometer. Technical report, IROST, November 2001

Supervised Theses

PhD

S1 F. Jamshidian-Tehrani. *Online Noninvasive Fetal Cardiac Signal Extraction*. PhD thesis, Artificial Intelligence, School of Electrical & Computer Engineering, Shiraz University, September 2019. Supervised by: Dr. Reza Sameni

S2 D. Fattahi. *A Statistical Framework for Cardiac Parameter Estimation*. PhD thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, 2017. [Due date: 2021], Supervised by: Dr. Reza Sameni

Masters

S1 N. Kheram. Modeling and Denoising of Phonocardiogram Signals. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, 9 2019. Supervised by: Dr. Reza Sameni

S2 M. Maghsoudi. Tracking and Estimating Biological Branching Structures. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, 9 2019. Supervised by: Dr. Reza Sameni

S3 A. Kazemnejad. Analysis of Synchronous Electrocardiogram and Phonocardiogram Parameters Extracted from Normal Subjects. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, September 2018. Supervised by: Dr. Reza Sameni

S4 N. Firoozi. A Hardware Architecture for Efficient Implementation of Elementary Functions. Master's thesis, Computer Architecture, School of Electrical & Computer Engineering, Shiraz University, 9 2018. Supervised by: Dr. Reza Sameni

S5 S. Keshavarzi. Designing a Hardware Architecture for the Implementation of Online Subspace Tracking Algorithms. Master's thesis, Computer Architecture, School of Electrical & Computer Engineering, Shiraz University, 9 2018. Supervised by: Dr. Reza Sameni

S6 M.-A. Abbasi. Design and Implementation of Parametric RTL Tools for Linear Algebraic Calculations. Master's thesis, Computer Architecture, School of Electrical & Computer Engineering, Shiraz University, 2 2018. Supervised by: Dr. Reza Sameni

S7 P. Torabi. Implementation of Artificial Neural Networks on FPGA with Scalable and parametric Design. Master's thesis, Computer Architecture, School of Electrical & Computer Engineering, Shiraz University, February 2018. Supervised by: Dr. Reza Sameni

S8 L. Akbari. Random Circuit Generation for Evaluation of Different Levels of Synthesis and Implementation of Reconfigurable Circuits. Master's thesis, Computer Architecture, School of Electrical & Computer Engineering, Shiraz University, 9 2017. Supervised by: Dr. Reza Sameni

S9 M. Rahbaralam. Evaluation of Instantaneous Frequency Estimation Techniques with Application in Electroencephalogram Analysis. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, 5 2017. Supervised by: Dr. Reza Sameni

S10 R. Mohammadzadeh. Implementation of Blind Source Separation and Frequency Scrambling Algorithms on FPGA Soft-Cores Using Mixed-Design. Master's thesis, Computer Architecture, School of Electrical & Computer Engineering, Shiraz University, 9 2016. Supervised by: Dr. Reza Sameni

S11 E. Seraj. A Comparison of Cerebral Signal Phase Extraction and Analysis Methods. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, September 2016. Supervised by: Dr. Reza Sameni

S12 S. Doostkam. Design and Implementation of a Portable Assistive System for Visually Impared People. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, 9 2016. Supervised by: Dr. Reza Sameni

S13 H. Biglari. Fetal Motion Tracking from Non-Invasive Cardiac Signal Recordings. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, 2015. Supervised by: Dr. Reza Sameni

S14 Z. Sadeghian. Analysis and Prediction of Economic Indexes using Signal Processing Techniques. Master's thesis, Artificial Intelligence, School of Electrical & Computer Engineering, Shiraz University, 10 2015. Supervised by: Dr. Reza Sameni

S15 M. Samieinasab. Modeling and Filtering of Fetal Phonocardiogram Signals. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, February 2015. Supervised by: Dr. Reza Sameni

S16 H. Narimani. Application of Kalman and H-infinity Filters in Electrocardiogram Denoising. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, 9 2014. Supervised by: Dr. Reza Sameni

S17 B. Tavakol-Shoorjeh. Distributed Component Analysis and its Applications in Biosignal Processing. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, September 2014. Supervised by: Dr. Reza Sameni

S18 Z. Kheradpisheh. Comparison of Linear and Nonlinear Electrocardiogram Processing Techniques. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, 2 2014. Supervised by: Dr. Reza Sameni

S19 M. Fatemi. Application of Subspace Tracking Techniques for Fetal Cardiac Signal Extraction. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, 3 2013. Supervised by: Dr. Reza Sameni

S20 H. Hassani-Saadi. Application of Signal Processing Algorithms for Non-numeric Data. Master's thesis, Artificial Intelligence, School of Electrical & Computer Engineering, Shiraz University, 3 2013. Supervised by: Dr. Reza Sameni

S21 F. Razavipour. Fetal Magnetoencephalogram Extraction and Phase Analysis of the Electroencephalogram. Master's thesis, Artificial Intelligence, School of Electrical & Computer Engineering, Shiraz University, 3 2012. Supervised by: Dr. Reza Sameni

S22 B. Vahabzadeh. Study of Heart Rate Calculation Techniques and the Notion of Cardiac Signal Phase. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, February 2012. Supervised by: Dr. Reza Sameni

S23 S. Niknam. Multichannel Cardiac Signal Processing & Sensor Selection Techniques. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, 1 2012. Supervised by: Dr. Reza Sameni

S24 E. Kheirati-Roonizi. Morphological Modeling of Cardiac Signals. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Shiraz University, 6 2011. Supervised by: Dr. Reza Sameni

S25 S. Kharabian. Fetal R-Wave Detection from Non-Invasive Magnetocardiogram Recordings. Master's thesis, Biomedical Engineering, School of Electrical & Computer Engineering, Sharif University of Technology, 9 2009. Jointly Supervised by: Dr. Mohammad-Bagher Shamsollahi and Dr. Reza Sameni

Reviews

- Reviewer of several national and international journals and conferences. An incomplete list is available on Publons
- Associate Editor of the IET Healthcare Technology Letters
- Has been awarded the Outstanding Reviewer Award of Physiological Measurement in 2018

Open-Source Projects

The Open-Source Electrophysiological Toolbox (OSET), URL: www.oset.ir. GitLab Repository: https://gitlab.com/rsameni/OSET/.

Invited Talks and Workshops

1. *A Nonlinear Bayesian Filtering Framework for the Filtering of Noisy ECG Signals*, UCL, Louvain-la-Neuve, Belgium, April 21, 2006
2. *Workshop on Blind Source Separation and Independent Component Analysis: Theory, Applications and Perspectives*, 15th Iranian Conference on Electrical Engineering (ICEE 2007), Iran Telecom Research Center (ITRC), May 13, 2007
3. *A Biomedical Signal Processing Project from Research to Production*, Shiraz University, January 13, 2009
4. *Introduction to Biomedical Engineering*, Iranian Telecommunication Manufacturing Company (ITMC), December 8, 2010
5. *Cardiac Signal Processing*, Interdisciplinary Summer School, Shiraz University, July 16, 2012
6. *Advances in electrocardiogram signal processing and analysis*, International Workshop on Signal Processing (IWSP 2017), Tehran, Iran, May 10, 2017
7. *Introduction to Blind Source Separation*, 20th Workshop on Applied Stochastic Processes, Shiraz, Iran, April 2018
8. *Fetal Cardiac Signal Processing Techniques*, Invited Lecturer in the International Summer School on Technologies and Signal Processing, Pula, Sardinia, Italy, July 2–6, 2018

INDUSTRIAL & ENGINEERING

Engineering Skills

- Solution providing for digital signal processing systems (from design to implementation).
- Digital electronics and hardware architecture design for FPGA platforms, including the entire cycle from solution providing, hardware selection or design, and back-end software/firmware implementation.

Programming Languages

C, C++, Matlab/Octave, Verilog (HDL).

Companies and Research Centers

- Founder and CEO of Alphanumériques®, Data and Signal Analysis Solutions, Grenoble, France. *2019–2020*
- Technology adviser and algorithm developer, MindChild Medical, Inc., North Andover, MA, USA. *2008–2012*
- Technology adviser, Vala-Andishe Paya (VAP) Ltd., Shiraz, Iran. *2017–2020*
- Founder and director, Signal Processing Center (SPC), Shiraz University, Shiraz, Iran. *2010–2015*
- Co-founder, Software Defined Radio Center (SDRC), Shiraz University, Shiraz, Iran. *2013–2016*
- Senior Signal Processing Engineer, Basamad Negar Ltd., Tehran, Iran. *2001–2005*
- Electronics Engineer, Iranian Research Organization for Science & Technology (IROST), Tehran, Iran. *2000–2001*

ADMINISTRATION & SERVICES

- Associate Editor, Healthcare Technology Letters, Since Aug 2020
- Chair of the Department of Computer Science & Engineering & IT, Shiraz University, 2016–2018.
- Vice Dean of Student Affairs, School of Electrical & Computer Engineering, Shiraz University, 2009–2015.
- Shiraz University's International Office Representative for collaboration with universities of France, 2017.
- Member of the course planning committee, Shiraz University, 2016–2018.
- Member of Fars Province Science and Technology Park Consulting Committee and Evaluation Board, 2016–2017.
- External Referee, Iran's National Cognitive Sciences and Technologies Council, 2010–2014.
- External Referee, Iran's National Elites Foundation (Fars branch), 2010–2014.
- Co-founder of the MSc and PhD programs of Bioelectrical Engineering in Shiraz University
- Co-founder of the MSc program of Computer Architecture in Shiraz University

MEMBERSHIPS

- Senior Member of the Institute of Electrical and Electronics Engineering (IEEE), (Student Member 2001, Member 2008, Senior Member 2015)
- Member of Iran's National Elites Foundation, 2010–2019

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