UNIVERSITY OF PENNSYLVANIA – PERELMAN SCHOOL OF MEDICINE
Curriculum Vitae

Date: February, 2017

Birkan Tunç, Ph.D.

Office Address: 3700 Hamilton Walk
Richards Building, 7th Floor
Philadelphia, PA, 19104

If you are not a U.S. citizen please indicate the type of visa you have:
US Visa Status: H1-B (University of Pennsylvania)

Education:

1999-2003	BSc	Istanbul Technical University (Industrial Engineering)
2003-2005	MSc	Istanbul Technical University (Computational Science & Engineering)
2006-2012	PhD	Istanbul Technical University (Computational Science & Engineering)

Postgraduate Training and Fellowship Appointments:

2012-2015	Postdoctoral Fellow, Center for Biomedical Image Computing and Analytics, Department of Radiology, University of Pennsylvania, Philadelphia, PA
2015-Present	Research Associate, Department of Radiology, University of Pennsylvania, Philadelphia, PA

Military Service:
None

Faculty Appointments:
None

Hospital and Administrative Appointments:
None

Other Appointments:

2006-2012	Teaching Assistant, Informatics Institute, Istanbul Technical University, Istanbul, Turkey
2007-2007	Research Intern, Siemens Corporate Research Inc., Princeton, NJ
2010-2012	Project Scientist, Faculty of Computer and Informatics Engineering, Istanbul Technical University, Istanbul, Turkey

Specialty Certification:
None

Licensure:
None

Awards, Honors and Membership in Honorary Societies:

2006	PhD student fellowship
2012	IEEE best student paper award
2015	Finalist, Technology Development Foundation of Turkey

Memberships in Professional and Scientific Societies and Other Professional Activities:

International:

2011-2013 Society for Industrial and Applied Mathematics (Member)

2012-Pres. Philosophy of Science Association (Member)

National:

2014-Pres. Institute for Translational Medicine and Therapeutics (Member)

Local: None

Editorial Positions:
None

Academic and Institutional Committees:
None

Major Academic and Clinical Teaching Responsibilities:

2006-2012 Teaching assistant, undergraduate students (weekly), "Scientific Programming", Informatics Institute, Istanbul Technical University, Istanbul, Turkey.

June, 2010 Lecturer, "Parallel and distributed programming", researchers in academia and industry, four lectures, National Center for High Performance Computing, Istanbul, Turkey.

Nov.-Dec, 2011 Lecturer, "Scientific programming with Matlab and Pyhton", faculty
Mar.-May, 2012 members, six lectures per semester, Istanbul Technical University, Istanbul, Turkey.

2011-2012 Teaching assistant, graduate students (weekly), "Linear algebra and numerical analysis", Informatics Institute, Istanbul Technical University, Istanbul, Turkey.

Lectures by Invitation:

November 13, 2009	"Illumination Invariant Face Recognition on Nonlinear Manifolds" – AAAI Fall Symposium on Manifold Learning and its Applications, Arlington, VA
June 20, 2012	"Probabilistic Matrix Approximation" – SIAM Conference on Applied Linear Algebra, Valencia, Spain
August 20, 2014	"Machine Learning for Medical Imaging" – Informatics Institute, Istanbul Technical University, Istanbul, Turkey
October 26, 2015	"Grounding Autism Spectrum Phenomenology In Neurobiology" – Faculty of Computer and Informatics Engineering, Istanbul Technical University, Istanbul, Turkey
May 13, 2016	"Connectomics – The Convergence of Brain Wiring and Brain Tumors" – PENN Brain Tumor Academy, Philadelphia, PA

Organizing Roles in Scientific Meetings:

None

Bibliography:

Research Publications, peer reviewed (print or other media):

1. **B. Tunç**, S. K. Zhou, J. H. Park, M. Gökmen, Context Ranking Machine and Its Application to Rigid Localization of Deformable Objects, Procs. of International Conference on Image Processing, pp. 3589-3592, 2009.
2. **B. Tunç**, M. Gökmen, Manifold learning for face recognition under changing illumination, Telecommunication Systems, Vol. 47 (3), pp. 185-195, 2011.
3. **B. Tunç**, V. Dağlı, M. Gökmen, Robust Face Recognition with Class Dependent Factor Analysis, Procs. of International Joint Conference on Biometrics, pp.1-6, 2011.
4. **B. Tunç**, V. Dağlı, M. Gökmen, Class Dependent Factor Analysis and Its Application to Face Recognition, Pattern Recognition, Vol. 45 (12), pp. 4092–4102, 2012.
5. E. Sarıyanidi, V. Dağlı, S. C. Tek, **B. Tunç**, M. Gökmen, Local Zernike Moments: A New Representation for Face Recognition, Procs. of International Conference on Image Processing, 2012.
6. **B. Tunç**, A. R. Smith, D. Wasserman, X. Pennec, W. M. Wells, R. Verma, K. M. Pohl, Multinomial Probabilistic Fiber Representation for Connectivity Driven Clustering, Procs. of Information Processing in Medical Imaging, pp. 730-741, 2013.
7. **B. Tunç**, Y. Ghanbari, A. R. Smith, J. Pandey, A. Browne, R. T. Schultz, R. Verma, PUNCH: Population Characterization of Heterogeneity, NeuroImage, Vol. 98, pp. 50-60, 2014.

8. **B. Tunç**, W. A. Parker, M. Ingalhalikar, R. Verma, Automated tract extraction via atlas based Adaptive Clustering, NeuroImage, Vol. 102 (2), pp. 596-607 2014.
9. **B. Tunç**, Semantics of Object Representation in Machine Learning, Pattern Recognition Letters, Vol. 64, pp. 30-36, 2015.
10. **B. Tunç**, V. Shankar , D. Parker , R. T. Schultz , R. Verma, Towards a Quantified Network Portrait of a Population, Procs. of Information Processing in Medical Imaging, pp. 650-661, 2015.
11. **B. Tunç**, R. Verma, Unifying Inference of Meso-Scale Structures in Networks, PLoS ONE 10(11): e0143133, 2015.
12. Y. Ghanbari, L. Bloy, **B. Tunç**, V. Shankar, T. PL Roberts, J. C. Edgar, R. T. Schultz, R. Verma, On Characterizing Population Commonalities and Subject Variations in Brain Networks, Medical Image Analysis, S1361-8415(15)00151-6, 2016.
13. **B. Tunç**, M. Ingalhalikar, D. Parker, J. Lecoeur, R. L. Wolf, L. Macyszyn, S. Brem, R. Verma, Individualized Map of White Matter Pathways: Connectivity-based Paradigm for Neurosurgical Planning, Neurosurgery, 2016.
14. **B. Tunç**, B. Solmaz, D. Parker, T. D. Satterthwaite, M. A. Elliott, M. E. Calkins, K. Ruparel, R. E. Gur, R. C. Gur, R. Verma, Establishing a Link Between Sex Related Differences in the Structural Connectome and Behaviour, Phil. Trans. R. Soc. B, 371 (1688), 2016.
15. T. Watanabe, **B. Tunç**, D. Parker, J. Kim, R. Verma, Label-Informed Non-negative Matrix Factorization with Manifold Regularization for Discriminative Subnetwork Detection, Procs. of Medical Image Computing and Computer-Assisted Intervention, pp. 166-174, 2016.
16. **B. Tunç**, B. Solmaz, D. Parker, D., Whyte, J., Hart, T., Rabinowitz, A., Rohrbach, M., Kim, J., R. Verma, Assessing connectivity related injury burden in diffuse traumatic brain injury, Human Brain Mapping, doi:10.1002/hbm.23561, 2017.

Research Publications, peer-reviewed reviews:

None

Contributions to peer-reviewed clinical research publications, participation cited but not by authorship:

None

Research Publications, non-peer reviewed:

None

Abstracts:

1. **B. Tunç**, W. A. Parker, R. Verma, Automated extraction of fiber bundles for population studies, Joint Annual Meeting ISMRM-ESMRMB, 2014.
2. **B. Tunç**, Y. Ghanbari, A. R. Smith, J. Pandey, A. Browne, R. T. Schultz, R. Verma, A Novel Severity Measure for Quantitative Description of Heterogeneity in Autism, The International Meeting for Autism Research (IMFAR), 2014.
3. L. Macyszyn, J. Lecoeur, E. Caruyer, **B. Tunç**, E. Larkin, F. Quattrone, D. O'Rourke, R. L. Wolf, S. Brem, R. Verma, Tractography for Neurosurgeons:

Automating tract extraction and resolving the challenges of edema, European Conference for Neurosurgery (EANS), 2014.

4. E. Caruyer, L. Bloy, **B. Tunç**, J. Lecoeur, V. Shankar, R. Verma, A comparative study of 16 tractography algorithms for the corticospinal tract: reproducibility and subject-specificity, Joint Annual Meeting ISMRM-ESMRMB, 2014.
5. **B. Tunç**, D. Parker, R. T. Schultz, R. Verma, Autism Spectrum Disorder Is Characterized by Structural Under-Connectivity in Reward Circuitry, The International Meeting for Autism Research (IMFAR), 2016.
6. **B. Tunç**, W. A. Parker, R. Verma, On Quantitatively Comparing Tractography Algorithms, Joint Annual Meeting ISMRM-ESMRMB, 2017.
7. T. Watanabe, **B. Tunç**, D. Parker, J. P. Fortin, R. Verma, Normalization of inter-site Structural Connectivity Data for Regression analysis, Joint Annual Meeting ISMRM-ESMRMB, 2017.
8. **B. Tunç**, D. Parker, J. Pandey, R. Verma, R. T. Schultz, Categorical Meets Dimensional: A Fuzzy Categorical Conception of Autism Spectrum, The International Meeting for Autism Research (IMFAR), 2017.

Editorials, Reviews, Chapters, including participation in committee reports (print or other media:

None

Books:

None

Alternative Media:

None

Patents:

1. **B. Tunç**, R. Verma: Automatic Tract Extraction via Atlas Based Adaptive Connectivity-Based Clustering. U.S. Provisional Application No. 62/202, 329, 2016.