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**ELVAN CEYHAN**  
**Auburn University**

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## RESEARCH INTERESTS

- ◊Graph- and network-based learning and data science (pattern recognition, classification and clustering);
- ◊Random geometric graphs (Proximity Catch Digraphs, their construction and characterization, domination, edge and arc density);
- ◊Network optimization (in relation to Stochastic Obstacle Scene Problem and Canadian Traveler's Problem);
- ◊Spatial point pattern and data analysis (by nearest neighbor and graph theoretic methods) and their applications;
- ◊Statistical methods for medical data and image analysis.

## EDUCATION

- PhD, Johns Hopkins University**, Baltimore, MD 21218, USA. Applied Mathematics and Statistics. 2000 - 2005. Date of issuance: May 26, 2005. Advisor: Prof. Carey E. Priebe. Dissertation title: An Investigation of Proximity Catch Digraphs in Delaunay Tessellations.
- MSE, Johns Hopkins University**, Baltimore, MD 21218, USA. Statistics/ Mathematical Sciences. 2000 - 2002. Date of issuance: May 23, 2002.
- MS, Oklahoma State University**, Stillwater, OK 74078, USA. Statistics. 1998 - 2000. Date of issuance: July 28, 2000. Advisor: Dr. Carla L. Goad. Thesis title: A Comparison of Analysis of Covariance and ANOVA Methods Using Covariate-Adjusted Residuals.
- BS, Koç University**, Istanbul, Turkey. Mathematics. 1993 - 1997. Date of issuance: June 30, 1997.

## WORK EXPERIENCE

### Research Experience

- Associate Professor**, 2019 July — Present. Department of Mathematics and Statistics, Auburn University, Auburn, AL.
- Deputy Director**, 2017 August 16 — 2019 May 15. SAMSI (Statistical and Applied Mathematical Sciences Institute), Durham, NC.
- Research Associate Professor**, 2017 July — 2019 May. Department of Statistics, North Carolina State University, Raleigh, NC.
- Visiting Associate Professor**, 2016 September — 2017 June. Department of Statistics, University of Pittsburgh, Pittsburgh, PA.
- Associate Professor**, 2011 August — 2016 August and **Assistant Professor**, 2005 September — 2011 August. Department of Mathematics, Koç University, Istanbul, Turkey.
- Research Fellow**, 2013 August — 2014 July. SAMSI (Statistical and Applied Mathematical Sciences Institute), Durham, NC.
- Affiliated with the Graduate Program in Computational Sciences and Engineering** 2006 — 2016. Graduate School of Science and Engineering, Koç University, Istanbul, Turkey.
- Visiting Scholar**, 2007 Summer. Center for Bioengineering, BAMM Labs: Bio-Acoustic-MEMS in Medicine, Harvard-MIT Health Science and Technology, Harvard Medical School, Brigham and Women's Hospital, Cambridge, MA.
- Post-doctoral Fellow**, 2004 June — 2005 August. Center for Imaging Science, Johns Hopkins University,

Baltimore, MD. (I defended my PhD Thesis in 2004, but official date of issuance of my diploma is 2005.)

### Teaching Experience

**Koç University** (2005 Fall - 2016 Spring)

#### Undergraduate Classes:

Intro to Statistics (x18), Probability Theory (x2), Differential Equations (x6), Calculus (x5), Statistics for Sciences (x1), Statistics for Social Sciences (x2), Linear Algebra (x1), Multivariable Calculus and Matrix Algebra (x1), Introduction to Abstract Mathematics (x1), Multivariable Calculus & Linear Algebra (x2)

#### Graduate Classes (as Selected Topics):

Probability and Statistical Theory and Applications, Probability and Mathematical Statistics, Mathematical Modeling of Infectious Diseases, Selected Topics in Probability and Statistics, and Theory of Point Estimation.

**University of Pittsburgh** (2016-2017) Intro to Statistics, Mathematical Statistics, Nonparametric Statistics, and Statistical Machine Learning.

**North Carolina State University** (2018 Fall) Statistical Inference and Regression for Engineering.

**Auburn University** (2019 Fall - Present) Mathematical Statistics I & II (from the Statistics prelim sequence), Bayesian Statistics, Probability & Statistics for Data Science, and Computational Statistics.

### TRAINING

Participated in MOSI (Mobile Summer Institute) on active learning. 2022 Summer. Biggio Center, ACLC, Auburn University, Auburn, AL.

### HONORS AND AWARDS

- Featured in the “I benefited from a Marie Curie Action - IOF in the spotlight” section of the Marie Curie Alumni Association Newsletter No. 6, May, 2015.
- Complimentary/Supporting Membership to New York Academy of Sciences, 03/01/2015 - 02/29/2016.
- Research Fellow at SAMSI, 2013-2014.
- Featured in the “Statistician Job of the Week” section of [www.statistics2013.org](http://www.statistics2013.org) as part of International Year of Statistics in the week of October 17, 2013.
- Election to Global Young Academy, 2013-2018 (currently Alumni Member of GYA).
- Election to TWAS (The Academy of Sciences for the Developing World) as Young Affiliate Fellow, 2012 - 2016.
- Elected Member of ISI (International Statistical Institute), 2011 November - Present.
- The article “Extension of one-dimensional proximity regions to higher dimensions. *Computational Geometry: Theory and Applications*, 43(9):721-748” was featured at VerticalNews service of NewsRx.com.)
- Listed in the Marquis Who’s Who in the World, 28-34th editions (2010-2016), in Marquis Who’s Who in America 2018 and selected for 2017 Albert Nelson Marquis Lifetime Achievement Award.
- The Second Best Oral Presentation Award at the 30. National Radiology Congress, Antalya, Turkey, November 4-9, 2009.
- Member, Phi Kappa Phi Honor Society, 1999 - Present.

### GRANTS AND EXTERNAL FUNDING

- Principal Investigator, Office of Naval Research (ONR) Grant # N00014-22-1-2572, “Adversarial Risk Analysis for Optimal Obstacle Evasion,” \$358,000, 2022 - 2024.
- Simons Collaboration Grant - 855850, “Graph Theoretic Learning and Spatial Methods”, \$42,000, 2021 - 2026.
- NSF Award DMS-1638521, “Statistical and Applied Mathematical Sciences Institute - SAMSI”, \$3,097,333 per year for three years, September 1, 2017 to August 31, 2020. (EC was a co-PI of the grant and Deputy Director of SAMSI, September 1, 2017 to 05/15/2019.)
- EU-FP7 Marie Curie International Outgoing Fellowship (€233,921, July 2013–July 2015) Project title: PRinHDD - Pattern Recognition in High Dimensional Data. Result in Brief of the project is outlined at [http://cordis.europa.eu/result/rcn/182954\\_en.html](http://cordis.europa.eu/result/rcn/182954_en.html).
- Funding (Travel & Accommodation) Support for — 57th Session of the International Statistical Institute,

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- Durban, South Africa, 2009; — 59th World Statistics Congress, Hong Kong, China, 2013; — 61st World Statistics Congress, Rio de Janeiro, Brazil, 2015.
  - Funding (Travel & Accommodation) Support for the 4th International Conference of Young Scientists and Annual General Meeting of the Global Young Academy, Santiago, Chile, 21-25 May 2014.
  - TUBITAK (Turkish Scientific and Technological Research Council) 1001 Grant, July 2012 - July 2013.
  - TUBITAK Career Grant, February 2008 — February 2011.
  - European Science Foundation scholarship for the IASC-ERS Summer School “Computational Aspects in Environmental Statistics”, Pamporovo, Bulgaria, 2009.
  - Harvard University-Koç University Visiting Scholarship (2007 summer)
  - Abel Wolman Fellowship, Johns Hopkins University, 2000 - 2001.

### EDITORIAL ACTIVITIES

- Associate Editor: Computational Statistics & Data Analysis, 2008 - 2016.
- Editorial Board Member: Model Assisted Statistics and Applications, 2007 - 2012.
- Associate Editor: Journal of Probability and Statistical Sciences, 2007 - 2013, & 2021 - Present.
- Member: Scientific Advisory Board for Human Brain Mapping (HBM) Meeting, June 10-14, 2007, Chicago, IL, USA & abstract reviewer for HBM2007 Meeting.

### PROFESSIONAL SERVICE

- AI@AU Research Committee Member, September 2022 - Present.
- American Statistical Association AL-MS Chapter - Auburn University Representative, 2022 - Present.
- Member of NASEM AI-Biological Data Workshop Planning Committee, 2022-2023 (co-organized and attended at the first workshop on 11/15/2022).
- Reviewer for the Simons Collaboration Grants, 2022.
- Expert reviewer for the 2016 evaluation of H2020 MSCA IF - MAT proposals.
- Member of Board of Directors of IASC-ERS (International Association for Statistical Computing - European Regional Section), 2012-2016.
- Panel/Jury Member for TUBITAK Projects, 2011-2013.
- Substitute council member of the Turkish Statistical Society (Türk İstatistik Derneği) 2010 - 2016.
- External consultant/reviewer for TUBITAK Projects, 2010, 2011, 2012.
- Department Chair/Coordinator, March 10, 2010- March 10, 2011.
- Contact Member for the Turkish language in the ISI Multilingual Glossary of Statistical Terms Project, 2008 - 2016. (see <http://isi.cbs.nl/glossary.htm>).
- Faculty Council Member as assistant professor for the Sciences Faculty Council at Koç University, 2008 - 2011.
- Faculty Council Member as assistant professor for the Arts and Sciences Faculty Council at Koç University, 2006 - 2008.

### ORGANIZATIONAL ACTIVITIES

12. Seminar Organizer: Organized Statistics and Data Science Seminars at Department of Mathematics and Statistics, Auburn University, Fall 2020 & Spring 2022.
11. Deputy Director at SAMSI (Statistical and Applied Mathematical Sciences Institute), RTP, NC, 2017-2019. Organized or co-organized numerous undergraduate workshops, professional development workshops, workshops for URMs, research workshops under year-long programs.
10. Co-organizer (with A. Manukyan) of the Invited Session titled “Instance and Graph Based Learning from High Dimensional Data” at the International Conference on Information Complexity and

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Statistical Modeling in High Dimensions with Applications, Cappadocia, Turkey, May 18-21, 2016.

9. Organizer of the Special Topic Session 72 (STS072) titled “Graph theoretic methods for spatial data analysis” at the 59th International Statistical Institute (ISI) World Statistics Congress, Hong Kong, China, August 25-30, 2013.
8. Scientific Programme Committee member and co-chair of the Local Organizing Committee of 8th World Congress in Probability and Statistics, Istanbul, Turkey, July 9-14, 2012.
7. Scientific Programme Committee and co-chair of the Local Organizing Committee member of Pre-world-congress Meeting of Young Researchers in Probability and Statistics 2012 (PWCYPS 2012), Koç University, Istanbul, Turkey, July 6-8, 2012.
6. Scientific Programme Committee member and Chair of an Invited Session at NEDETAS (New Developments in Theory and Applications of Statistics) Conference, Ankara, Turkey, May 2-4, 2011.
5. Scientific Programme Committee member at the 3rd International Conference of the ERCIM (European Research Consortium for Informatics and Mathematics) Working Group on Computing & Statistics (ERCIM 10), London, UK, December 10-12, 2010.
4. Organizer and Chair for the Session (ES27) titled “Analysis of spatial data: estimation, modelling, and inference” at the 3rd International Conference of the ERCIM Working Group on Computing & Statistics (ERCIM 10), London, UK, December 10-12, 2010.
3. Organizer and Chair of the Invited Paper Meeting 35 (IPM35) titled “Spatial Statistics: Recent Advances in Epidemiological Applications” at the 57th Session of the ISI, Durban, South Africa, August 16-22, 2009.
2. Organizing Committee Member for the 21. National Mathematics Symposium. Istanbul, Turkey, September 1-4, 2008.
1. Seminar Organizer: Co-organized Math-Sci Seminars at College of Arts and Sciences, Koç University, Fall 2006 Spring 2007.

## SOFTWARE - R PACKAGES

- `nnsnat`: Nearest Neighbor Methods for Spatial Data Analysis, author and maintainer, CRAN: <https://cran.r-project.org/web/packages/nnsnat/index.html> and GitHub: <https://github.com/elvanceyhan/nnsnat>.
- `pcds`: Proximity Catch Digraphs and Their Applications, author and maintainer, CRAN: <https://cran.r-project.org/web/packages/pcds/index.html> and GitHub: <https://github.com/elvanceyhan/pcds>.
- `PCDSL`: Proximity Catch Digraphs: Statistical Learning, author and contributor, GitHub: <https://github.com/Artur-man/PCDSL>

## PAPERS AND PUBLICATIONS

- \* **Articles Published in Probability, Statistics, and Mathematics Journals**
  - ▷ **Methodology Articles in Medical, Imaging, and Other Areas**
  - ◇ **Application Articles Published in Medical, Imaging, and Other Area Journals**
57. \* E. Ceyhan, J.C. Wierman, and P. Xiang. **Law of large numbers for a two-dimensional class cover problem.** *ESAIM: Probability and Statistics*, 25:376-407, June 2021.
  56. \* S. Bahadır and E. Ceyhan. **A classification of isomorphism-invariant random digraphs.** *Contributions to Discrete Mathematics*. 15(3): 43-74, December 2020.
  55. \* S. Bahadır and E. Ceyhan. **On the number of weakly connected subdigraphs in random  $k$ NN digraphs.** *Discrete & Computational Geometry*. 65(1): 116-142, January 2021.

54. \* A. Manukyan and E. Ceyhan. **Classification using proximity catch digraphs.** *Machine Learning*. 109(4): 761-811, May 2020.
53. \* E. Ceyhan. **Domination number of an interval catch digraph family and its use for testing uniformity.** *Statistics*. 54(2): 310-339, January 2020.
52. \* E. Ceyhan. **A contingency table approach based on nearest neighbor relations for testing self and mixed correspondence.** *SORT-Statistics and Operations Research Transactions*. 42(2):125-158, July-December 2018.
51. ◊ G.G. Singh, V. Farjalla, B. Chen, A. Pelling, E. Ceyhan, M. Dominik, E. Alisic, J. Kerr, N. Selin, G. Bassioni, E. Bennett, A. Kemp and K.M. Chan. **Researcher engagement in policy deemed societally beneficial yet unrewarded.** *Frontiers in Ecology and the Environment*. 17(7): 375-382, August 2019 (also available as *PeerJ Preprints* 6:e26672v2 <https://doi.org/10.7287/peerj.preprints.26672v2>.)
50. \* S. Bahadir and E. Ceyhan. **On the Number of reflexive and shared nearest neighbor pairs in one-dimensional uniform data.** *Probability and Mathematical Statistics*, 38(1):123-137, July 2018.
49. \* **Cell-Specific and post-hoc spatial clustering tests based on nearest neighbor contingency tables.** *Journal of the Korean Statistical Society*, 46(2):219-245, June 2017.
48. ▷ E. Ceyhan, T. Nishino, K.N. Botteron, M.I. Miller and J.T. Ratnanather. **Analysis of cortical morphometric variability using labeled cortical distance maps.** *Statistics and Its Interface*, 10(2), 313-341, 2017.
47. \* E. Ceyhan and S. Bahadir. **Nearest neighbor methods for testing reflexivity.** *Environmental and Ecological Statistics*, 24(1):69-108, March 2017.
46. \* E. Ceyhan. **Density of a random interval catch digraph family and its use for testing uniformity.** *REVSTAT*, 14(4):349-394, October 2016.
45. \* A. Manukyan and E. Ceyhan. **Classification of imbalanced data with a geometric digraph family.** *Journal of Machine Learning Research*, 17(189):1-40, October 2016.
44. \* E. Ceyhan. **Edge density of new graph types based on a random digraph family.** *Statistical Methodology*, 33: 31-54, December 2016.
43. ◊ M. Asik, F. Tufan, T.S. Akpınar, N. Akalin, E. Ceyhan, N. Tunc, Z.I. Hasiloglu, M. R. Altıparmak, T. Eçder and S. Albayram. **Frequency of nerve root sleeve cysts in autosomal dominant polycystic kidney disease.** *Balkan Medical Journal*, 33(6):652-656, November 2016.
42. ◊ O. Erdem, E. Ceyhan and Y. Varli. **A new correlation coefficient for bivariate time-series data.** *Physica A: Statistical Mechanics and its Applications*, 414:274-284, November 2014.
41. ◊ J.T. Ratnanather, S. Cebron, E. Ceyhan, E. Postell, D.V. Pisano, C.B. Poynton, B. Crocker, N.A. Honeycutt, P.B. Mahon and P.E. Barta. **Morphometric differences in planum temporale in schizophrenia and bipolar disorder revealed by statistical analysis of labeled cortical depth maps.** *Frontiers in Psychiatry*, 5:94, August 2014.
40. \* E. Ceyhan. **Simulation and characterization of multi-class spatial patterns from stochastic point processes of randomness, clustering and regularity.** *Stochastic Environmental Research and Risk Assessment (SERRA)*, 28(5):1277-1306, July 2014.
39. \* E. Ceyhan. **Segregation indices for disease clustering.** *Statistics in Medicine*, 33(10):1662-1684, May 2014.
38. \* E. Ceyhan. **Comparison of relative density of two random geometric digraph families in testing spatial clustering.** *TEST*, 23(1):100-134, March 2014.
37. \* E. Ceyhan. **Testing spatial symmetry using contingency tables based on nearest neighbor relations.** *The Scientific World Journal*, Volume 2014, Article ID 698296, January 2014.

36. ◊ M. Takayanagi, J. Wentz, Y. Takayanagi, D.J. Schretlen, **E. Ceyhan**, L. Wang, M. Suzuki, A. Sawa, P.E. Barta, J.T. Ratnanather and N.G. Cascella. **Reduced anterior cingulate gray matter volume and thickness in subjects with deficit schizophrenia.** *Schizophrenia Research*, 150(2):484-490, November 2013.
35. ◊ J.T. Ratnanather, C.B. Poynton, D.V. Pisano, B. Crocker, E. Postell, S. Cebron, **E. Ceyhan**, N.A. Honeycutt, P.B. Mahon and P.E. Barta. **Morphometry of superior temporal gyrus and planum temporale in schizophrenia and psychotic bipolar disorder.** *Schizophrenia Research*, 150(2):476-483, November 2013.
34. ▷ **E. Ceyhan**, T. Nishino, D. Alexopoulos, R.D. Todd, K.N. Botteron, M.I. Miller and J.T. Ratnanather. **Censoring distances based on labeled cortical distance maps in cortical morphometry.** *Frontiers in Neurology*, vol 4, article 155: 1-16, October 2013.
33. ▷ **E. Ceyhan**, K. Ertugay and S. Duzgun. **Exploratory and inferential methods for spatio-temporal analysis of residential fire clustering in urban areas.** *Fire Safety Journal*, 58:226-239, May 2013.
32. ◊ A. Coskun, **E. Ceyhan**, T.C. Inal, M. Serteser and I. Unsal. **The comparison of parametric and nonparametric bootstrap methods for reference interval computation in small sample size groups.** *Accreditation and Quality Assurance*, 18(1):51-60, January 2013.
31. \* V. Aksakallı and **E. Ceyhan**. **Optimal obstacle placement with disambiguations.** *Annals of Applied Statistics*, 6(4):1730-1774, December 2012.
30. ◊ S. Ünel, M. Yılmaz, S. Albayram, Z. Işık, **E. Ceyhan**, H. Işıldak, M. Teixido, Y. Savaş and A. Kiris. **Anastomoses of the vestibular, cochlear, and facial nerves.** *Journal of Craniofacial Surgery*, 23(5):1358-1361, September 2012.
29. ▷ **E. Ceyhan**, M.F. Beg, C. Ceritoğlu, L. Wang, J.C. Morris, J.G. Csernansky, M.I. Miller and J.T. Ratnanather. **Metric distances between hippocampal shapes indicate different rates of change over time in nondemented and demented subjects.** *Current Alzheimer Research*, 9(8) : 972-981, October 2012.
28. ◊ **E. Ceyhan**, F. Xu, U.A. Gürkan, A.E. Emre, E.S. Turalı, R. El Assal, A. Açıkgenç, C.M. Wu and U. Demirci. **Prediction and control of number of cells in microdroplets by stochastic modeling.** *Lab on a Chip*, 12(22):4884-4893, October 2012.
27. \* E. Ceyhan. **The distribution of the relative arc density of a family of interval catch digraph based on uniform data.** *Metrika*, 75(6):761-793, July 2012.
26. \* E. Ceyhan. **An investigation of new graph invariants related to the domination number of random proximity catch digraphs.** *Methodology and Computing in Applied Probability*, 14(2): 299-334, April 2012.
25. ◊ S. Ünel, M. Yılmaz, S. Albayram, A. Kiris, Z. Işık, **E. Ceyhan**, H. Işıldak, Y. Savaş and Z. Keser. **A radiological study on the topographical relationships between the vestibular, cochlear and facial nerves.** *The Eurasian Journal of Medicine*, 44(1):6-12, January 2012.
24. ◊ S.J. Moon, **E. Ceyhan**, U.A. Gürkan, and U. Demirci. **Statistical modeling of single target cell encapsulation.** *PLoS ONE*, 6(7): e21580. doi:10.1371/journal.pone.0021580, July 2011.
23. ◊ S. Albayram, S. Saip, Z.I. Haşiloğlu, M. Teke, **E. Ceyhan**, M. Tütüncü, H. Selçuk, A. Kına and A. Siva. **Evaluation of parenchymal neuro-Behçet disease by using susceptibility-weighted imaging.** *American Journal of Neuroradiology*, 32(6):1050-1055, June-July 2011.
22. ▷ **E. Ceyhan**, M.F. Beg, C. Ceritoğlu, L. Wang, J.C. Morris, J.G. Csernansky, M.I. Miller and J.T. Ratnanather, **Quantization and analysis of hippocampal morphometric changes due to dementia of Alzheimer type using metric distances based on large deformation diffeomorphic metric mapping.** *Computerized Medical Imaging and Graphics*, 35(4): 275-293, April 2011.
21. \* E. Ceyhan. **Spatial clustering tests based on domination number of a new family of random digraphs.** *Communications in Statistics - Theory and Methods*, 40(8): 1363-1395, March 2011.

20. <sup>▷</sup> E. Ceyhan, M. Hosakere, T. Nishino, J. Alexopoulos, R.D. Todd, K.N. Botteron, M.I. Miller and J.T. Ratnanather. **Statistical analysis of cortical morphometrics using pooled distances based on labeled cortical distance maps.** *Journal of Mathematical Imaging and Vision*, 40(1): 20-35, March 2011.
19. <sup>◇</sup> Z.I. Haşiloğlu, S. Albayram, H. Selçuk, E. Ceyhan, S. Delil, B. Arkan and L. Baskoy, **Cerebral microhemorrhages detected by susceptibility-weighted imaging in amateur boxers.** *American Journal of Neuroradiology*, 32(1):99-102, January 2011.
18. \* E. Ceyhan. **Extension of one-dimensional proximity regions to higher dimensions.** *Computational Geometry: Theory and Applications*, 43(9):721-748, November 2010 (This article is also featured at <http://www.verticalnews.com>.)
17. \* E. Ceyhan. **On the use of nearest neighbor contingency tables for testing spatial segregation.** *Environmental and Ecological Statistics*, 17(3), 247-282, September 2010.
16. \* E. Ceyhan. **Directional clustering tests based on nearest neighbour contingency tables.** *Journal of Nonparametric Statistics*, 22(5):599-616, July 2010.
15. \* E. Ceyhan. **Exact inference for testing spatial patterns by nearest neighbor contingency tables.** *Journal of Probability and Statistical Sciences*, 8(1):45-68, February 2010.
14. \* E. Ceyhan. **New tests of spatial segregation based on nearest neighbor contingency tables.** *Scandinavian Journal of Statistics*, 37(1):147-165, February 2010.
13. \* E. Ceyhan and C. L. Goad, **A comparison of analysis of covariate-adjusted residuals and analysis of covariance.** *Communications in Statistics — Simulation and Computation*, 38(10):2019-2038, November 2009.
12. \* E. Ceyhan. **Overall and pairwise segregation tests based on nearest neighbor contingency tables.** *Computational Statistics & Data Analysis*, 53(8):2786-2808, June 2009.
11. \* E. Ceyhan. **Class-specific tests of segregation based on nearest neighbor contingency tables.** *Statistica Neerlandica*, 63(2):149-182, May 2009.
10. \* E. Ceyhan. **The distribution of the domination number of class cover catch digraphs for non-uniform one-dimensional data.** *Discrete Mathematics*, 308(23):5376-5393, December 2008.
9. <sup>◇</sup> N. Penumetcha, B. Jedynek, M. Hosakere, E. Ceyhan, K.N. Botteron and J.T. Ratnanather. **Segmentation of arteries in MPRAGE images of the ventral medial prefrontal cortex.** *Computerized Medical Imaging and Graphics*, 32(1):36-43, January 2008.
8. <sup>◇</sup> M. Halaç, S. Albayram, E. Ceyhan, H. Özer, I. Doğan, S. Sağer and I. Uslu. **Is early bladder activity in radionuclide cisternography an indirect sign of spontaneous intracranial hypotension or sequence of lumbar puncture?** *Clinical Nuclear Medicine*, 32(11):850-853, November 2007.
7. <sup>◇</sup> M. Kantarcı, N. Ceviz, S. Sevimli, U. Bayraktutan, E. Ceyhan, C. Duran, A. Karaman, I. Durur and A. Okur. **Diagnostic performance of multidetector computed tomography for detecting aorto-ostial lesions compared with catheter coronary angiography: Multidetector computed tomography coronary angiography is superior to catheter angiography in detection of aorto-ostial lesions.** *Journal of Computer Assisted Tomography*, 31(4), 595-599, July / August 2007.
6. <sup>◇</sup> M. Zhi, J.T. Ratnanather, E. Ceyhan, A.S. Popel and W.E. Brownell. **Hypotonic swelling of salicylate-treated cochlear outer hair cells.** *Hearing Research*, 228(1-2):95-104, June 2007.
5. \* E. Ceyhan, C.E. Priebe and D.J. Marchette. **A new family of random graphs for testing spatial segregation.** *Canadian Journal of Statistics*, 35(1):27-50, February 2007.
4. \* E. Ceyhan and C.E. Priebe. **On the distribution of the domination number of a new family of parameterized random digraphs.** *Model Assisted Statistics and Applications*, 1(4):231-255, 2006.

3. ◊ F. Alper, M. Akgün, M. Kantarcı, A. Eroğlu, **E. Ceyhan**, O. Onbaş, C. Duran and A. Okur. **Demonstration of vascular abnormalities compressing esophagus by MDCT: Special focus on dysphagia lusoria.** *European Journal of Radiology*, 59(1):82-87, July 2006.
2. \* **E. Ceyhan**, C.E. Priebe and J.C. Wierman. **Relative density of the random  $r$ -factor proximity catch digraphs for testing spatial patterns of segregation and association.** *Computational Statistics & Data Analysis*, 50(8):1925-1964, April 2006.
1. \* **E. Ceyhan** and C.E. Priebe. **The use of domination number of a random proximity catch digraph for testing spatial patterns of segregation and association.** *Statistics & Probability Letters*, 73(1), 37-50, June 2005.

Some of the above articles and associated technical reports are posted at arXiv.org (<http://front.math.ucdavis.edu/>);

The articles # 7, 28, 29, 33, 35, 36, 40, 42, 44 are featured in the BUTTER Platform of NewsRx service.

#### DISCUSSION NOTES

4. E. Ceyhan. Discussion on the article "How to find an appropriate clustering for mixed-type variables with application to socio-economic stratification, C. Hennig and T. F. Liao". *Journal of Royal Statistical Society, Series C (Applied Statistics)*, 62(3): 345, May 2013.
3. E. Ceyhan. Discussion on the article "Catching up faster by switching sooner: a predictive approach to adaptive estimation with an application to the AIC-BIC dilemma, T. van Erven and Peter Grünwald". *Journal of Royal Statistical Society, Series B (Statistical Methodology)*, 74(3): 403, June 2012.
2. E. Ceyhan. Discussion on the article "Optimum design of experiments for statistical inference, S. G. Gilmour and L. A. Trinca". *Journal of Royal Statistical Society, Series C (Applied Statistics)*, 61(3): 379-380, May 2012.
1. E. Ceyhan. Discussion on the article "Vignettes and health systems responsiveness in cross-country comparative analyses, N. Rice, S. Robone, and P.C. Smith". *Journal of Royal Statistical Society, Series A (Statistics in Society)*, 175(2): 361-362, April 2012.

#### TECHNICAL MONOGRAPHS

2. E. Ceyhan. **Proximity Catch Digraphs: Auxiliary Tools, Properties, and Applications (based on PhD Thesis)**, VDM Verlag, Saarbrücken, Germany. ISBN:978-3-639-19063-2 (September 27, 2009).
1. E. Ceyhan. **Correcting for Covariates: Ratios, Residual Analysis, and ANCOVA (based on MS Thesis)**, VDM Verlag, Saarbrücken, Germany. ISBN:978-3-639-19607-8 (September 1, 2009).

#### PROFESSIONAL SKILLS

- ◊ **Languages:** Turkish (native), English (fluent).
- ◊ **Computer skills:** Proficient in personal computers
- statistical software:** R, SAS, and Spark (with R)
- interactive mathematical software:** Maple, Mathematica
- programming languages:** familiar with C++, Pascal, and web design with HTML
- operating systems:** MS-DOS, Window 95 & 98, XP, Linux

#### GRADUATE STUDENT SUPERVISION

- ◊ De Xing, MS in Statistics (2021), title: An analysis of effect of diet, masu salmon elovl2 transgene and their interaction on fatty acid composition in channel catfish, Auburn University, Auburn, AL.
- ◊ Minghong Jian, MS in Statistics (2021), title: Statistical Analysis of SAC Solder Joints' Fatigue and Damage Accumulation, Auburn University, Auburn, AL.
- ◊ Polat Charyyev, PhD in Mathematics (2017), title: The Optimal Obstacle Placement With Disambiguation Problem, Koç University, Istanbul, Turkey.



- ◇ Artur Manukyan, PhD in Computational Science and Engineering (2016), title: Statistical Learning with Proximity Catch Digraphs, Koç University, Istanbul, Turkey.
- ◇ Selim Bahadir, PhD in Mathematics (2016), title: A Probabilistic Investigation of Invariants of NN-type Graphs, Koç University, Istanbul, Turkey.
- ◇ Enes Özel, MS in Mathematics (2011), title: Extensions of Domination Number and Their Distribution for Random Interval Catch Digraph Families (Math, 2011), Koç University, Istanbul, Turkey.
- ◇ Committee Member for PhD of Minghong Jian (Ind. & Sys Eng., 2021) Auburn University, Auburn, AL.
- ◇ Committee Member for MS of Hongyang Wu (Stat., 2021), Todd Steury (Stat. 2022), Wanyu Zhang (Stat. 2022), Jinhai Wang (Stat. 2022), MPS of Jianfeng Zhang (Stat. 2021), Auburn University, Auburn, AL.
- ◇ Committee Member for MS of Emre Ekinçi (Econ., 2007), Berk Yavuzoğlu (Econ., 2008), Mehmet Gümüş (Math, 2011), Koç University, Istanbul, Turkey.

## OTHER PUBLICATIONS

### Conference Presentations Published in the Proceedings

26. E. Ceyhan and P. Charyyev. **Comparison of various algorithms in optimal obstacle placement with disambiguation problem.** International Conference on Advances in Interdisciplinary Statistics and Combinatorics, Greensboro, NC, October 7-9, 2022.
25. A. Pearson and E. Ceyhan. **Domain-dependent classification with geometric digraphs.** Joint Statistical Meeting, Washington DC, August 6-11, 2022.
24. A. Manukyan and E. Ceyhan. **Statistical learning using geometric digraph families.** International Conference on Information Complexity and Statistical Modeling in High Dimensions with Applications, Cappadocia, Turkey, May 18-21, 2016.
23. V. Aksakalli, A.F. Alkaya, D. Oz, R. Algin and E. Ceyhan. **Performance evaluation of an exact method for the obstacle neutralization problem.** Proceedings of the Sixth International Conference on Industrial Engineering and Operations Management, Kuala Lumpur, Malaysia, March 8-10, 2016.
22. E. Ceyhan. **Pairwise and other post-hoc tests of spatial clustering based on NNCTs.** Proceedings of the 61st World Statistics Congress, Rio de Janeiro, Brazil, July 26-31, 2015.
21. A. Manukyan and E. Ceyhan. **An assessment of CCP approach in statistical learning.** Proceedings of the 61st World Statistics Congress, Rio de Janeiro, Brazil, July 26-31, 2015.
20. S. Bahadir and E. Ceyhan.  **$k$ -Nearest neighbor contingency table analysis for several classes.** European Meeting of Statisticians, Amsterdam, Netherlands, July 6-10, 2015.
19. P. Charyyev, E. Ceyhan, and V. Aksakalli. **Optimal obstacle placement with disambiguation problem.** European Meeting of Statisticians, Amsterdam, Netherlands, July 6-10, 2015.
18. E. Ceyhan. Invited Talk, **Indices of segregation for disease clustering.** IASSL 2014 International Conference: Statistics and Society in the New Information Age: Challenges and Opportunities, Colombo, Sri Lanka, December 28-30, 2014.
17. E. Ceyhan. **Testing spatial clustering using relative density of two random geometric digraph families.** Proceedings of the 2013 World Statistics Congress, Hong Kong, China, August 25-30, 2013.
16. V. Aksakalli and E. Ceyhan. **The use of spatial graphs for optimal obstacle placement: A study on impact of the clutter spatial distribution.** Proceedings of the 2013 World Statistics Congress, Hong Kong, China, August 25-30, 2013.
15. S. Albayram, S. Saip, Z.I. Haşiloğlu, M. Teke, E. Ceyhan, M. Tütüncü, H. Selçuk, A. Kına and A. Siva. **Susceptibility ağırlıklı görüntüleme ile parenkimal nöro-Beşçet hastalığının değerlendirilmesi.** Proceedings of the 46. National Neurology Congress (46. Ulusal Nöroloji Kongresi Bildiri Kitabı), Antalya, Turkey, December 4-9, 2010.

14. S. Ünel, S. Albayram, E. Ceyhan, N. Tunç, S. Aydın, Y. Savaş, A. Kırış, Z. Işık and Ş. Odabaşı. **İç kulak kanalında ve serebellopontin mesafede 7. ve 8. sinirler arasındaki anastomozların manyetik rezonans görüntülemeye 3b balanced fast field eko sekansı ile değerlendirilmesi.** Proceedings of the Türkrad 2010, 31. National Radiology Congress (31. Ulusal Radyoloji Kongresi Bildiri Kitabı), Antalya, Turkey, November 7-12, 2010.
13. S. Albayram, M. Aşık, E. Ceyhan, Z. Işık, F. Tufan, N. Akalın, N. Tunç, H. Özer, M. Altıparmak and T. Eccder. **Frequency of nerve root sleeve cysts in autosomal dominant polycystic kidney disease.** Proceedings of the ASNR 48th Annual Meeting & NER Foundation Symposium, Boston, MA, USA, May 15-20, 2010.
12. S. Albayram, M. Akan, E. Ceyhan, D. Gürbüz, Y. Savaş and A. Kırış. **Beyin iskemisinin hiperakut, akut ve subakut evrelerinde difüzyon tensor değişikliklerinin değerlendirilmesi (An evaluation of diffusion tensor changes in the brain ischemia in hyperacute, acute, and subacute stages).** Proceedings of the Türkrad 2009, 30. National Radiology Congress (30. Ulusal Radyoloji Kongresi Bildiri Kitabı), Antalya, Turkey, November 4-9, 2009 [won the second best oral presentation award among 1500 presentations].
11. E. Ceyhan, C.E. Priebe and D.J. Marchette. **The use of central similarity proximity catch digraphs for testing multivariate spatial patterns .** 57th Session of the ISI, Durban, South Africa, August 16-22, 2009.
10. E. Ceyhan. **Çok sınıflı uzaysal desen testlerinin ekolojik veri analizinde uygulanması (Application of multivariate spatial pattern tests for ecological data analysis).** Proceedings of the 18. Statistical Research Symposium (18. İstatistik Araştırma Sempozyumu Bildiri Kitabı), simultaneously held at main TurkStat centers in Turkey, May 7-8, 2009.
9. E. Ceyhan. **QR-adjustment for clustering tests based on nearest neighbor contingency tables.** HDM-2008 International Conference on Multivariate Statistical Modelling & High Dimensional Data Mining, Kayseri, Turkey, June 19-23, 2008.
8. E. Ceyhan. **Tekli uzaysal desen testlerinin ekolojik veri analizinde uygulanması (Application of univariate spatial pattern tests for ecological data analysis).** Proceedings of the 17. Statistical Research Symposium (17. İstatistik Araştırma Sempozyumu Bildiri Kitabı), simultaneously held at main TurkStat centers in Turkey, May 8-9, 2008.
7. E. Ceyhan, R.Ç. Ölken, L. Fong, T.N. Tasky, M.K. Hurdal, M.F. Beg, M.E. Martone and J.T. Ratnanather. **Modeling metric distances of dendrite spines of mice based on morphometric measures.** Proceedings of the International Symposium on Health Informatics and Bioinformatics (HIBIT2007), Antalya, Turkey, April 29-May 2, 2007.
6. E. Ceyhan. **Edge correction for cell- and class-specific tests of segregation based on nearest neighbor contingency tables.** Proceedings of the International Conference on Environment: Survival and Sustainability (ESS2007), Nicosia, Cyprus, February 19-24, 2007.
5. E. Ceyhan. **Edge correction for segregation tests based on nearest neighbor contingency tables.** Proceedings of the Applied Statistics 2007 International Conference(AS2007), Ribno, Bled, Slovenia, September 23-26, 2007.
4. E. Ceyhan. **Edge correction for exact tests on nearest neighbor contingency tables for testing spatial segregation.** Proceedings of the Joint Statistical Meeting, Section on Statistics and the Environment, American Statistical Association, Salt Lake City, UT, USA, July 29-August 2, 2007.
3. E. Ceyhan, M. Hosakere, T. Nishino, J. Alexopoulos, R.D. Todd, K.N. Botteron, M.I. Miller and J.T. Ratnanather. **Statistical analysis of morphometric measures based on labeled cortical distance maps.** Proceedings of Fifth International Symposium on Image and Signal Processing and Analysis, Istanbul, Turkey, September 27-29, 2007.
2. E. Ceyhan, L. Fong, T.N. Tasky, M.K. Hurdal, M.F. Beg, M.E. Martone and J.T. Ratnanather. **Type-specific analysis of morphometry of dendrite spines of mice.** Proceedings of Fifth International Symposium on Image and Signal Processing and Analysis, Istanbul, Turkey, September 27-29, 2007.

1. **E. Ceyhan** and C.E. Priebe. **Central similarity proximity maps in Delaunay tessellations**. Proceedings of the Joint Statistical Meeting, the Statistical Computing Section, American Statistical Association, San Francisco, CA, USA, August 3-7, 2003.

#### **Talks and Conference Presentations (not Published in the Proceedings)**

32. SMAC Talk, **Imbalanced Classification based on a Geometric Graph Family**, Department of Statistics, Penn State, March 19, 2021.
31. Neuroimaging Journal Club Seminar, **Two algorithms to quantify and analyze brain morphometry**, February 21, 2020.
30. Graduate Student Seminar, **Two algorithms to quantify brain morphometry and its analysis**, March 18, 2020.
29. Graduate Student Seminar, **Optimal obstacle placement with disambiguations in presence of uniform clutter**, October 7, 2020.
28. IPS Presentation, **Analysis of cortical thickness with medical imaging data of very high and varying dimensions per subject**. 9th Conference of the Asian Regional Section of the IASC (IASC-ARS 2015), Singapore, December 17-19, 2015.
27. S. Bahadır and **E. Ceyhan**, **Classification of isomorphism-invariant random digraphs**. IMBM Workshop on Graph Theory and Its Applications, Istanbul, Turkey, November 27-28, 2015.
26. Invited Talk, **Analysis of high dimensional brain imaging data: Challenges and possible solutions**. IWSDM 2015, Istanbul, Turkey, July 21-22, 2015.
25. Department Seminar, **Domination number of a family of random geometric digraphs and its application to spatial clustering**, Department of Applied Mathematics and Statistics, Johns Hopkins University, Baltimore, MD, USA, November 7, 2013.
24. **A new family of random geometric graphs: Theory and applications** [also presented as a poster] TWAS 12th General Conference and 23rd General Meeting, Tianjin, China, September 18-21, 2012.
23. Invited Talk, **Quantization and analysis of morphometric changes in brain tissues due to neuro-degenerative diseases**. Third International Workshop on Statistical Mechanics and Dynamical Systems, Turunç/Marmaris, Turkey, August 27-September 2, 2012.
22. V. Aksakallı and **E. Ceyhan**, **Optimal obstacle clustering patterns with disambiguations**, 8th World Congress in Probability and Statistics, Istanbul, Turkey, July 9-14, 2012.
21. **Statistical tests, univariate analysis, parametric tests, nonparametric tests, and ANOVA methods for medical practice**, Presented at the Summer Course on Research Methodology in Medical Sciences, Koç University, Istanbul, Turkey, July 19-23, 2010; July 18-22, 2011.
20. **Relative density of random proximity catch digraphs: Theory and applications**, Department of Industrial Engineering, Çankaya University, Ankara, Turkey, December 24, 2010.
19. **Domination number of random proximity catch digraphs: Theory and applications (in Turkish “Yakınlık yönlü çizgelerinin baskınlık sayısı: Teori ve uygulamalar”)**, IMBM Istanbul Center for Mathematical Sciences— Istanbul Discrete Mathematics Meetings, Boğaziçi University, Istanbul, Turkey, November 26, 2010.
18. **The asymptotic distribution of the domination number of a geometric digraph family (in Turkish “Geometrik bir yönlü çizge ailesinin baskınlık sayısının asimptotik dağılımı”)**, Department of Mathematical Engineering, Istanbul Technical University, Istanbul, Turkey, November 12, 2010.
17. **The distribution of the domination number of a family of random catch digraphs based on one-dimensional data**, The Fifth International Workshop in Applied Probability (IWAP 2010), Universidad Carlos III de Madrid, Colmenarejo Campus, Madrid, Spain, July 5-8, 2010.
16. Mathematics Seminar, **A graph invariant of a random digraph family for testing multivariate spatial interaction**, Department of Mathematics, Izmir University of Economics, Izmir, Turkey, May 7, 2010.
15. Graduate Learning Seminar, **A short synopsis on random graphs, spatial point patterns, and image analysis**, Department of Mathematics, Koç University, November 2, 2009.
14. Invited Seminar, **Some nearest neighbor methods for detection of disease clustering**, Session ES28, Small area estimation 1, 2nd International Conference of the ERCIM Working Group on Computing & Statistics (ERCIM 09), Limassol, Cyprus, October 29-31, 2009.
13. Statistics Seminar, **Random proximity catch digraphs: Theory and applications - II**, Department of Statistics, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, September 25, 2009.

12. Probability Seminar, **Random proximity catch digraphs: Theory and applications - I**, Institute of Mathematics and Statistics, Universidade de São Paulo, Sao Paulo, Brazil, September 24, 2009.
11. S. Albayram, M. Akan, **E. Ceyhan**, D. Gürbüz and Y. Savaş. **Evaluation of the anisotropy of the water diffusion tensor in hyperacute, acute and subacute stages of brain ischemia**. 47th Meeting of American Society of Neuroradiology (ASNR), Vancouver, British Columbia, Canada, May 16-21, 2009.
10. Mathematics Seminar, **Rassal yakınlık çizgeleri ve uygulamaları**, Süleyman Demirel University, Isparta, Turkey, March 3, 2009.
9. **The asymptotic distribution of the domination number of proximity catch digraphs (Orantısal kenar yakınsal yönlü çizgelerin baskınlık sayısının asimptotik dağılımının hesaplanması)**. XXI. Ulusal Matematik Sempozyumu (21. National Mathematics Symposium), Istanbul, Turkey, September 1-4, 2008.
8. **The asymptotic distribution of the domination number of proportional edge proximity catch digraphs**. The 7th World Congress in Probability and Statistics, Singapore, July 14-19, 2008.
7. **Extension of one-dimensional proximity maps to higher dimensions (Tek-boyutlu yakınlık fonksiyonlarının daha üst boyutlara genelleştirilmesi)**. VI. Ulusal Geometri Sempozyumu (VI. National Geometry Symposium), Bursa, Turkey, July 1-4, 2008.
6. Invited Talk, **Spatial point pattern analysis for astronomical data**. 15. Istanbul İstatistik Fizik Günleri (15. Istanbul Statistical Physics Symposium), Istanbul, Turkey, June 19-21, 2008.
5. Sci-Tech Seminar, **Applying mathematics in quantifying (measuring) the morphometry (shape and size) of brain tissues**, Koç University, October 31, 2006.
4. M. Hosakere and **E. Ceyhan**, Invited Talk, **Analysis of ventral medial prefrontal cortex metrics for depression in twins** at CIS Seminar Series, Johns Hopkins University, March 1, 2005.
3. Science-Math Seminar, **A parameterized family of proximity catch digraphs in Delaunay tessellations and its use in testing spatial point patterns**, Koç University, February 8, 2005.
2. Invited Talk, **The relative density of  $r$ -factor proportional-edge proximity catch digraphs and its application to spatial point patterns** at Statistics Colloquium, George Mason University, January 28, 2005.
1. Student Seminar, **An investigation of proximity catch digraphs in Delaunay tessellations**, Johns Hopkins University, October 1, 2004.

#### Posters (mostly on Medical Imaging)

24. A. Pearson and **E. Ceyhan**. **Adaptive and hybrid classification with domain-dependent digraphs**. Alabama-Mississippi ASA Chapter Annual Conference, Jackson, MS, April 1, 2022.
23. A. Pearson and **E. Ceyhan**. **A network-based statistical learning method robust to class imbalance**. Auburn University Postdoctoral Research Symposium, Auburn, AL, September 2, 2021.
22. **E. Ceyhan**. **Pattern recognition with parameterized random geometric graphs**. TWAS 25th General Meeting, Muscat, Oman, October 26-29, 2014.
21. **E. Ceyhan**. **New spatial segregation tests based on nearest neighbor contingency tables**. VI International Workshop on Spatio-Temporal Modelling (METMAVI), Guimarães, Portugal, September 12-14, 2012.
20. E. Özel and **E. Ceyhan**. **Extensions of domination number and their distribution for random interval catch digraph families**. 8th World Congress in Probability and Statistics, Istanbul, Turkey, July 9-14, 2012.
19. E. Özel and **E. Ceyhan**, **The distribution of fractional domination number of a random digraph family based on one-dimensional uniform data**. The Sixth International Conference on Probability and Statistics (PROBASTAT 2011), Bratislava, Slovakia, July 4-8, 2011.
18. Y. Varlı, **E. Ceyhan**, O. Erdem. **A new correlation coefficient for bivariate time-series data**. 3rd International Conference of the ERCIM Working Group on Computing & Statistics (ERCIM 10), London, UK, December 10-12, 2010. [Also presented at 18th Annual Conference of the Multinational Finance Society, Rome, Italy, June 26-29, 2011].
17. Poster Presentation, S. Ünel, S. Albayram, **E. Ceyhan**, M. Aşık, S. Aydın, Y. Savaş, A. Kırış, Z. Işık and Ş. Odabaşı. **İç kulak kanalında ve serebellopontin mesafede yedinci ve sekizinci kranial sinirlerin topografik ilişkilerinin manyetik rezonans görüntüleme 3B balanced fast field eko sekansı ile değerlendirilmesi**. Türkrad 2010, 31. National Radiology Congress, Antalya, Turkey, November 7-12, 2010.
16. J. Sohn, B. Crocker, D.V. Pisano, C.B. Poynton, N.A. Honeycutt, **E. Ceyhan**, P.E. Barta and J.T. Ratnanather. **Structural changes of temporal lobe regions in bipolar disorder and schizophrenia patients**. 16th Annual Meeting of the Organization for Human Brain Mapping, Barcelona, Spain, June 6-10, 2010.

15. R. Pribik, K. Alpert, N. Mohan, J. Sohn, C.E. Priebe, **E. Ceyhan**, E. Cochran, W. Wen, M.F. Beg, L. Wang and J.T. Ratnanather. **Automated labeled cortical distance mapping pipeline for analyzing regional structures**. 16th Annual Meeting of the Organization for Human Brain Mapping, Barcelona, Spain, June 6-10, 2010.
14. S. Ünel, S. Albayram, **E. Ceyhan**, S. Aydın, D. Gürbüz, N. Hatipoğlu, Y. Savaş, S. Odabaşı and A. Kırıs. **Determining the topographical relationship of the seventh and eighth nerves in the cerebellopontin cistern and internal auditory canal in living humans by using 3D gradient-echo sequence constructive interference in steady-state MR imaging**. Proceedings of the ASNR 48th Annual Meeting & NER Foundation Symposium, Boston, MA, USA, May 15-20, 2010.
13. S. Ünel, S. Albayram, **E. Ceyhan**, S. Aydın, D. Gürbüz, N. Hatipoğlu, Y. Savaş, S. Odabaşı and A. Kırıs. **Determining the anastomosis of the nerves in the internal auditory canal and cerebellopontin cistern in living humans by using 3D gradient-echo sequence constructive interference steady-state MR imaging**. Proceedings of the ASNR 48th Annual Meeting & NER Foundation Symposium, Boston, MA, USA, May 15-20, 2010.
12. S. Aydın, S. Albayram, **E. Ceyhan**, D. Gürbüz, S. Ünel, F. Kantarcı, Y. Savaş and A. Kırıs. **Quantitative and qualitative comparison of 0.5M gadoterate meglumine and 1M gadobutrol in contrast-enhanced MR angiography of carotid arteries**. Proceedings of the ASNR (American Society of Neuroradiology) 48th Annual Meeting & NER (Neuroradiology Education and Research) Foundation Symposium, Boston, MA, USA, May 15-20, 2010.
11. E. Ceyhan. **Testing the presence of the bacteria h. influenzae in children after drug treatments using generalized linear mixed models**. IASC-ERS Summer School "Computational Aspects in Environmental Statistics", Pamporovo, Bulgaria, September 11, 2009.
10. E. Ceyhan. **New multi-class and directional clustering tests based on nearest neighbor contingency tables**. Also published in the Proceedings of the International Conference on Nonparametric Inference (ISNI2008), Vigo, Galicia, Spain, November 5-7, 2008.
9. **E. Ceyhan**, C.B. Poynton, A. Qui, P.E. Barta and M.I. Miller. **Statistical analysis of gender, laterality, and diagnosis effect on planum temporale**. 12th Annual Meeting of the Organization for Human Brain Mapping, Florence, Italy, June 11-15, 2006.
8. G.M. Aldridge, J.T. Ratnanather, M.E. Martone, M. Terada, M.F. Beg, L. Fong, **E. Ceyhan**, A.E. Kolasny, T.J.A. Brown, E.L. Cochran, S.J. Tang, D.V. Pisano, M. Vaillant, M.K. Hurdal, J.D. Churchill, W.T. Greenough, M.I. Miller and M.H. Ellisman. **Semi-automated shape analysis of dendrite spines from animal models of fragile-X and Parkinson's disease using large deformation diffeomorphic metric mapping**. Society for Neuroscience Annual Meeting, Washington DC, USA, November 12-16, 2005.
7. **E. Ceyhan**, M. Hosakere, J. Alexopoulos, T. Nishino, C. Babb, J.T. Ratnanather, R. Todd, K.N. Botteron and M.I. Miller. **Analysis of ventral medial prefrontal cortex metrics for depression in twins**. 11th Annual Meeting of the Organization for Human Brain Mapping, Toronto, Canada, June 12-16, 2005.
6. L. Wang, M. Hosakere, **E. Ceyhan**, G. Kaplan, M. Gado, J.T. Ratnanather, J.G. Csernansky and M.I. Miller. **Surface area, volume and cortical thickness metrics of the cingulate gyrus in schizophrenia**. 11th Annual Meeting of the Organization for Human Brain Mapping, Toronto, Canada, 2005.
5. M.F. Beg, R.L. Buckner, B. Fischl, Y. Park, **E. Ceyhan**, C.E. Priebe, C. Ceritoğlu, A.E. Kolasny, T. Brown, B. Quinn, P. Yu, B. Gold, J.T. Ratnanather and M.I. Miller. **Pattern classification of hippocampal shape analysis in a study of Alzheimer's disease**. 11th Annual Meeting of the Organization for Human Brain Mapping, Toronto, Canada, June 12-16, 2005.
4. M.F. Beg, J.T. Ratnanather, L. Wang, **E. Ceyhan**, C.E. Priebe, C. Ceritoğlu, A. Khan, N. Lee, J.G. Csernansky, J. Morris and M.I. Miller. **Metric distances between hippocampal shapes predict different rates of shape changes in dementia of Alzheimer type and nondemented subjects: a validation study**. 11th Annual Meeting of the Organization for Human Brain Mapping, Toronto, Canada, June 12-16, 2005.
3. M.F. Beg, R.L. Buckner, B. Fischl, C. Ceritoğlu, A.E. Kolasny, C.E. Priebe, T. Brown, **E. Ceyhan**, Y. Park, B. Quinn, P. Yu, B. Gold, J.T. Ratnanather and M.I. Miller. **SASHA: Semi-automated shape analysis of brain structures**. 11th Annual Meeting of the Organization for Human Brain Mapping, Toronto, Canada, June 12-16, 2005.
2. L. Wang, M. Hosakere, **E. Ceyhan**, J.T. Ratnanather, G. Kaplan, M. Gado, J.G. Csernansky and M.I. Miller. **Labeled cortical mantle distance mapping of the cingulate gyrus in schizophrenia**. 11th Annual Meeting of the Organization for Human Brain Mapping, Toronto, Canada, June 12-16, 2005.
1. J.T. Ratnanather, C. Poynton, **E. Ceyhan**, A. Osdoit and D. Boatman. **A cortical analysis of the laterality of the planum temporale in hearing, hearing-impaired and central auditory processing disorder subjects**. Midwinter Meeting of the Association for Research in Otolaryngology, New Orleans, LA, USA, February 19-24, 2005.

**REFEREEING ACTIVITIES**

*Statistics & Probability Letters*, 2022; *TEST*, 2022; *Progress in Artificial Intelligence*, 2021; *International Journal of Intelligent Systems*, 2021; *Pattern Recognition*, 2021; *Journal of Spatial Science*, 2021; *Australian Journal of Multi-Disciplinary Engineering*, 2020; *Statistical Methods in Medical Research*, 2019; *Involve*, 2018; *Journal of Statistical Computation and Simulation*, 2016; *Journal of Applied Statistics*, 2015; *Environmental and Ecological Statistics*, 2013; *JABES*, 2013; *Communications in Statistics - Simulation and Computation*, 2013, 2019; *SERRA*, 2013; *Biometrical Journal*, 2010; *Annals of Applied Statistics*, 2010; *Computational Statistics & Data Analysis*, 2005, 2007, 2009(x3), 2010, 2011(x3), 2014(x2); *Journal of Forestry Faculty of Istanbul University (in Turkish, Istanbul Üniversitesi Orman Fakültesi Dergisi)*, 2010; *Math World Magazine (in Turkish, Matematik Dünyası Dergisi)*, 2010; *Journal of Arts and Sciences*, 2009; *Computational Statistics*, 2009; *International Journal of Geographical Information Science*, 2009; *Model Assisted Statistics and Applications*, 2009; *Journal of Statistical Research (in Turkish, İstatistik Araştırma Dergisi)*, 2008, 2009, 2011(x2); *Discrete Applied Mathematics*, 2008; *Journal of Biomedicine and Biotechnology*, 2007; *Discrete Mathematics*, 2006; *Journal of Computational and Graphical Statistics*, 2006; *Journal of Probability and Statistical Science*, 2004, 2010(x2).

— Reviewed 17 articles, 1 chapter, and 2 books for Mathematical Reviews, 2008 - 2017.

**PROFESSIONAL MEMBERSHIP**

- International Exchange Alumni, 2017 - Present.
- WAYS (World Association of Young Scientists), 2015 - Present.
- ICoRSA (International Consortium of Research Staff Associations), 2015 - Present.
- Marie Curie Alumni Association, 2014 - Present.
- The Young Statistician Group in The IASC, 2014 - 2017.
- Bernoulli Society January, 2012 - 2016.
- TIES (The International Environmetrics Society) January, 2012 - 2016, 2019 - Present.
- SIAM (Society for Industrial and Applied Mathematics) 2005, October 2011 - 2016; SIAG (SIAM Activity Group) on Uncertainty Quantification, January, 2012 - Present; and SIAG on Discrete Mathematics, 2014 - 2015.
- IAENG (International Association of Engineers), 2010 - Present.
- TMD (Turkish Mathematical Society, in Turkish, Türk Matematik Derneği), 2007 - 2016.
- AMS (American Mathematical Society), 2007 - 2019.
- IASC-ISI (The International Association for Statistical Computing-A Section of the International Statistical Institute), 2007 - 2017.
- IMS (Institute of Mathematical Statistics), 2003 - Present.
- ASA (American Statistical Association), 1999 - 2004, 2017 - Present.
- The Classification Society, 2022 - 2023.

**REFERENCES**

Available upon request.