

Biographical Sketch of Professor Alfred O. Hero
<http://www.eecs.umich.edu/~hero>

EDUCATION

Ph.D., EECS, Princeton University,	1984
M.S., EECS, Princeton University,	1982
B.S., EE, Boston University, May,	1980

PROFESSIONAL EXPERIENCE

John H. Holland Distinguished University Professor of EECS	2016-
Co-Director, Michigan Institute of Data Science, University of Michigan	2015-2018
R. Jamison and Betty Williams Professor of Engineering, University of Michigan	2009-
Professor, Dept. Statistics, College of Literature, Science and the Arts	2000-
Professor, Dept. Biomedical Engineering, Colleges of Engineering and of Medicine	1996-
Chaired DIGITEO Research Professor, DIGITEO, Paris France	2008-2014
Visiting Professor, MIT Laboratory for Information and Decision Systems (LIDS)	2006
Visiting Staff, AT&T Lucent Bell Laboratories, Murray Hill NJ	1999-2000
Technical Staff, MIT Lincoln Laboratory, Lexington, MA	1987-1989

MAJOR AWARDS AND HONORS (SELECTED)

Steven S. Atwood Award, College of Engineering, University of Michigan	2017
Society Award, IEEE Signal Processing Society	2015
Technical Achievement Award, IEEE Signal Processing Society	2014
Rackham Distinguished Faculty Achievement Award, University of Michigan	2011
IEEE Third Millennium Medal	2000
Fellow of the IEEE	1997
Eight Best Paper Awards from IEEE, SPIE, AISTATS, and other journals	1998-2014
40 invited Plenary and Keynote talks at workshops and conferences	1998-2017

MAJOR PROFESSIONAL SERVICE (SELECTED)

Chair, Committee on Theoretical and Applied Statistics, National Academies (Nat. Acad.)	2017-2020
Chair, arXiv Electrical Engineering and Systems Science (arxiv.eess domain)	2017-
Senior Editor, IEEE Journal on Selected Topics in Signal Processing	2015-
Guest Editor, IEEE Transactions on Signal and Information Processing in Networks	2016-
Co-General Chair, 2019 IEEE International Symposium on Information Theory, Paris	2014-
Co-Chair, Envisioning Undergraduate Data Science Education Study, (Nat. Acad.)	2016-
Co-Chair, Workshop on Scientific Inference for Big Data (Nat. Acad.)	2016
Director, IEEE Division IX, Signals and Applications	2010-2011
President, IEEE Signal Processing Society	2006-2007
Chair, U.S. Commission C, International Union of Radio Sciences (URSI)	1999-2001
Associate Editor, IEEE/ACM Transactions on Computational Biol. and Bioinformatics	2003-2008

RESEARCH ACTIVITIES

Interests: Data science, bioinformatics and personalized health, statistical signal processing and imaging, correlation mining, statistical machine learning and pattern recognition, sensor networks, sensor management.

210 peer reviewed journal articles and 420 peer reviewed conference papers	1984-2017
8 Best Paper Awards, 22363 citations, h-index of 62 (Google Scholar – Oct 2017)	
Graduated 54 PhD students and supervised 28 post-doctoral students	1989-2017
Participated in over 50 federal and industry grants as PI or co-PI	1989-2017
Four patents issued	2001-2014

SELECTED PUBLICATIONS

Y, Altmann, A. Maccarone, A. McCarthy, G. Newstadt, G. S. Buller, S. McLaughlin, A. O. Hero, "Robust spectral unmixing of sparse multispectral Lidar waveforms using gamma Markov random fields," *IEEE Trans. on Computational Imaging*, 2017.

S.-J. Hwang, S. Damelin, A.O. Hero, "Shortest path through random points," *Annals of Applied Probability*, vol. 26, no. 5, pp. 2791-2823, 2016.

A.O. Hero and B. Rajaratnam, "Foundational principles for large-scale inference: illustrations through correlation mining," *Proceedings of the IEEE*, vol. 104, no. 1, pp. 93-110, Jan 2016

Liu TY, Burke T, Park LP, Woods CW, Zaas AK, Ginsburg GS, Hero AO. An individualized predictor of health and disease using paired reference and target samples. *BMC Bioinformatics*. 2016 Jan 22;17:47.

P.-Y. Chen and A. Hero, "Deep community detection," *IEEE Trans on Signal Processing*, vol. 63, no. 21, pp. 5706-5719, Nov. 2015.

J. Calder, S. Esedoglu and A. Hero, "A PDE-based approach to non-dominated sorting," *SIAM Numerical Analysis*, vol. 53, no. 1, Jan 2015.

KS. Xu, M. Klinger, AO Hero, "Adaptive evolutionary clustering," *J. Data Mining and Knowledge Discovery*, DOI 10.1007/s10618-012-0286-6. Vol 28, Issue 2, pp 304-336, March 2014.

Finn WG, Harrington AM, Carter KM, Raich R, Kroft SH, Hero AO, Immunophenotypic signatures of benign and dysplastic granulopoiesis by cytomic profiling. *Cytometry B Clin Cytom*. 2011 80(5):282-90.

Hero AO, Rajaratnam B. Large Scale Correlation Screening. *Journal of the American Statistical Association*. 2011 December; 106(496):1540-1552.

Huang Y, Zaas AK, Rao A, Dobigeon N, Woolf PJ, Veldman T, Øien NC, McClain MT, Varkey JB, Nicholson B, Carin L, Kingsmore S, Woods CW, Ginsburg GS, Hero AO. Temporal dynamics of host molecular responses differentiate symptomatic and asymptomatic flu infection. *PLoS Genet*. 2011 7(8).

Patwari N, Hero AO, Perkins M, Correal NS, O'Dea RJ. Relative location estimation in wireless sensor networks. *IEEE transactions on signal processing*, 2003 August; 51(8):2137-2148.

Costa JA, Patwari N, Hero AO. Distributed weighted-multidimensional scaling for node localization in sensor networks. *ACM transactions on sensor networks*. 2006 February; 2(1):39-64.

Blatt D, Hero AO, Gauchman H. A convergent incremental gradient algorithm with a constant stepsize. *SIAM Journal on Optimization*. 2007 February; 18(1):29-51.

Hero AO. Secure space-time communication. *IEEE transactions on information theory / Professional Technical Group on Information Theory*. 2003 December; 49(12):3235-3249.