

BIOGRAPHICAL SKETCH

NAME: Sen Gupta, Ananya

POSITION TITLE & INSTITUTION: Assistant Professor, University of Iowa

Associate Professor, University of Iowa (effective July 1, 2022)

(a) PROFESSIONAL PREPARATION

INSTITUTION	LOCATION	MAJOR / AREA OF STUDY	DEGREE (if applicable)	YEAR YYYY
Jadavpur University	Kolkata, West Bengal	Electronics and Telecommunication Engineering	BENG	1998
University of Illinois at Urbana-Champaign	Urbana, IL	Electrical Engineering	MS	2001
University of Illinois Urbana-Champaign	Urbana, IL	Electrical Engineering	PHD	2006

(b) APPOINTMENTS

2013 - present Assistant Professor, University of Iowa, Iowa City, IA
2012 - 2013 Visiting Investigator, Woods Hole Oceanographic Institution, Woods Hole, MA
2011 - 2011 Part-time visiting lecturer, University of Massachusetts at Dartmouth , Dartmouth,
MA
2010 - 2011 Postdoctoral investigator, Woods Hole Oceanographic Institution, Woods Hole, MA
2008 - 2010 Postdoctoral scholar, Woods Hole Oceanographic Institution, Woods Hole, MA
2008 - 2008 Postdoctoral research associate, University of Illinois at Urbana- Champaign,
Urbana, IL
2007 - 2008 Program Manager, Microsoft Corporation, Redmond, WA
1999 - 2006 Graduate assistant, University of Illinois at Urbana-Champaign, Urbana, IL
1998 - 1999 DAIS Infotech Pvt. Ltd., Software trainee engineer, Kolkata

(c) SYNERGISTIC ACTIVITIES

1. 2018 Oct 25, 2022 Feb 23: Invited panelist at IEEE Women in Engineering (WIE) panel at IEEE Oceans conference to speak on increased STEM representation of women and minorities.
2. 2018-Present: Associate Editor for IEEE Access
3. 2021: Invited speaker at Acoustical Society of America (ASA) virtual meeting.
4. 2021: Developing (ongoing) computational algorithms for the FDA to conduct quantitative studies on food contamination.
5. 2020-2021: Developed computational demonstrations for music signal processing and related spectral analysis in an online/distance learning environment using purely virtual technology.
6. IEEE Ocean Engineering Society Technology Committee Co-chair on Data, Analytics, Integration and Modeling Committee
7. Invited committee member in IEEE Oceans Chapter of IEEE-wide Planet Positive 2030 effort

(d) RECENT PUBLICATIONS

- [1] Naushad Ansari, Anubha Gupta, Ananya Sen Gupta, "Shallow water acoustic channel estimation using two-dimensional frequency characterization", the Journal of the Acoustical Society of America 140 (5), 3995-4009, 2016. (Full-length peer-reviewed journal article)
- [2] Hamidreza Ghasemi Damavandi, Ananya Sen Gupta, Robert Nelson, Christopher Reddy, "Interpreting comprehensive two-dimensional gas chromatography using peak topography maps with application to petroleum forensics", Chemistry Central Journal 10 (1), 75, 2016. (Full-length peer-reviewed journal article)
- [3] Ananya Sen Gupta, Craig Kletzing, William Kurth, Morgan Matheny, "Automated Identification and Shape Analysis of Chorus Elements in the Van Allen Radiation Belts", AGU Journal of Geophysical Research – Space Physics, January 2018. (full-length peer-reviewed journal article)
- [4] Baker, Kelly K., Reid Senesac, Daniel Sewell, Ananya Sen Gupta, Oliver Cumming, and Jane Mumma. "Fecal fingerprints of enteric pathogen contamination in public environments of Kisumu, Kenya, associated with human sanitation conditions and domestic animals." Environmental science & technology 52, no. 18 (2018): 10263-10274. (full-length peer-reviewed journal article)
- [5] Naushad Ansari, Ananya Sen Gupta, and Anubha Gupta. "Shallow water channel estimation with energy efficient transmitted signal design." The Journal of the Acoustical Society of America 145, no. 5 (2019): 2955-2970. (full-length peer-reviewed journal article)
- [6] Chad M. Cullen, Kawalpreet K. Aneja, Sinem Beyhan, Clara E. Cho, Stephen Woloszynek, Matteo Convertino, Sophie J. McCoy, Yanyan Zhang, Matthew Z. Anderson, David Alvarez-Ponce, Ekaterina Smirnova, Lisa Karstens, Pieter C. Dorrestein, Hongzhe Li, Ananya Sen Gupta, Kevin Cheung, Jennifer Gloeckner Powers, Zhengqiao Zhao and Gail Rosen, "Emerging Priorities for Microbiome Research", Frontiers in Microbiology, 11 (2020): 136. (full-length peer-reviewed journal article)
- [7] Christopher John Whitt , Malayath Aravindakshan Atmanand, Frank Caimi, Andrea Copping, Bilal Fiaz, René Garello, Ludovic Grosjean, Ananya Sen Gupta, Malcolm Heron, Siri Johda Khalsa, William Kirkwood, Marco Lanzagorta, Shyam Madhusudhana, Alain Maguer, Andreas Marouchos, Maurizio Migliaccio, Frank Edgar Muller-Karger, Vedachalam Narayanaswamy, Jay S Pearlman, Brian Polagye, Satinder Singh, Sikandra Singh, Heather Spence and R Venkatesan, "Future Vision for Autonomous Ocean Observations", Frontiers in Marine Science, section Ocean Observation. (full-length peer-reviewed journal article)
- [8] Ryan McCarthy, Ananya Sen Gupta, "Support-Constrained Mixed Norm Optimization Techniques for Estimating Multipath Activity in Shallow Water Acoustic Channels", IEEE Journal of Oceanic Engineering, 2020. (full-length peer-reviewed journal article)
- [9] Bryan Ehlers, Ananya Sen Gupta and Rachel Learned, "A MUD-Enhanced Multi-Beam Approach for Increasing Throughput of Dense Wireless Networks," in IEEE Sensors Journal, vol. 21, no. 4, pp. 5454-5466, 15 Feb. 15, 2021, doi: 10.1109/JSEN.2020.3035330. (full-length peer-reviewed journal article)
- [10] Bernice Kubicek, Ananya Sen Gupta, and Ivars Kirsteins. "Sonar target representation using two-dimensional Gabor wavelet features." The Journal of the Acoustical Society of America 148.4 (2020): 2061-2072. (full-length peer-reviewed journal article)
- [11] Ryan McCarthy, Ananya Sen Gupta, Bernice Kubicek, Andrew M. Awad, Andres Martinez, Rachel F. Marek, and Keri C. Hornbuckle. "Signal Processing Methods to Interpret

Polychlorinated Biphenyls in Airborne Samples." IEEE Access (2020): 147738-147755. (full-length peer-reviewed journal article)

[12] Ryan McCarthy, Ananya Sen Gupta, "Underwater Channel Estimation Exploiting Multipath Feature Morphology", Journal of Acoustical Society of America, 149 (2), 983-996, (2021). (full-length peer-reviewed journal article)

[13] Ananya Sen Gupta, "Seminal article about model-based space-time array processing." The Journal of the Acoustical Society of America 149.5 (2021): R9-R10. (short high-visibility invited journal article reviewed by Editor-in-Chief and senior author of the seminal article reviewed in this article).

[14] Ananya Sen Gupta, and Gopu R. Potty. "Guest Editorial Underwater Acoustic Propagation Physics and Signal Processing Techniques for Shallow Water Acoustic Communications." IEEE Journal of Oceanic Engineering, vol. 44, no. 4 (2019): 818-819.

(short high-visibility guest editorial published in IEEE Journal of Oceanic Engineering).

[15] Ryan McCarthy, Ananya Sen Gupta, "Employing and Interpreting Machine Learning Target-Cognizant Technique for Non-Target Analysis", accepted for publication by IEEE Access. (full-length peer-reviewed journal article)

[16] Ryan A. McCarthy, Ananya Sen Gupta, and Madison Kemerling, "Autonomous learning and interpretation of channel multipath scattering using braid manifolds in underwater acoustic communications", The Journal of the Acoustical Society of America 150, 906-919 (2021) <https://doi.org/10.1121/10.0005819> (full-length peer-reviewed journal article)

[17] Kemerling, Madison, and Ananya Sen Gupta. "Interpreting the Underwater Acoustic Channel Impulse Response and Doppler Spread Using Braid Representations." 2021 International Symposium on Ocean Technology (SYMPOL). IEEE, 2021. (Peer-reviewed IEEE Conference article)

[18] B. Kubicek, A. Sen Gupta and I. Kirsteins, "Feature Engineering and Interpretation of Active Sonar Data Using Geometric Wavelets and Support Vector Machines," OCEANS 2021: San Diego – Porto, 2021, pp. 1-5, doi: 10.23919/OCEANS44145.2021.9705879.

[19] Ananya Sen Gupta, Zhengqiao Zhao, and Gail Rosen. "Spatiotemporal Tracking of SARS-CoV-2 Variants using informative subtype markers and association graphs." 2020 54th Asilomar Conference on Signals, Systems, and Computers. IEEE, 2020.

[20] Ananya Sen Gupta, Ryan A. McCarthy, Kawther Rouabhi, Craig Kletzing, and Ivar Christopher. "Disentangling high energy chorus elements against structured background interference in the Van Allen radiation belts using braid manifolds." In 2020 54th Asilomar Conference on Signals, Systems, and Computers, pp. 73-77. IEEE, 2020.

(e) HONORS, PRIZES, AND AWARDS

1. Career Kudos award, Pomerantz career Center, University of Iowa, "In recognition of efforts to further career development of UI students and contribute to the Hawkeye career ecosystem." 2020.

2. Iowa Space Grant Consortium mentor awards: 2016, 2017, 2019. These are awarded to support the ISGC student awards (see below).

3. Honorable mention: Dr. Sen Gupta's EPSCoR project was selected from all Iowa EPSCoR projects in the three-year RID program to be featured in ISGC 2015-2016 STIMULI EPSCoR book distributed to US Congress.

4. Teaching award: Excellence in Teaching and Dedication to Student Learning, Dec 2015.
- 5.. Old Gold Summer Fellowship," University of Iowa (2014).

Awards won prior to joining University of Iowa:

6. Woods Hole Oceanographic Institution Postdoctoral Fellowship, Woods Hole Oceanographic Institution. (2008).

Awards won prior to obtaining PhD (2006):

7. Sundaram Seshu summer fellowship, awarded by the Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, 2006.
8. Perry Fellowship, awarded by the Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, for the academic year 2004-2005.
9. Monibala Roy Memorial award, College of Engineering, Jadavpur University, Calcutta, 1998.
10. IEEE student award for the best student paper in the IEEE M.V.Chauhan All-India Student Paper Contest, 1997.
11. Jagadis Bose National Science Talent Search National Scholarship (JBNSTS), 1994-1998.
12. Governor's medal and other state and national awards won in India for academic excellence in 1992-1994.