SOUMYA RANJAN SAMAL, Ph.D.

Designation: Associate Professor

Department: Department of Electronics Engineering

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RESEARCH INTERESTS

- ✓ Wire Communication
- ✓ Internet of Things

Academic Qualifications

• Dates	2016-2019
• Name and type of organization providing education and training	Faculty of Telecommunication, "Department of Communication Networks", Technical University of Sofia, Sofia, Bulgaria.
• Area of Interest	Wireless Communication, Internet of Things
• Thesis title	Interference Based Efficient Power Control in Highly Dense D2D Communication Networks.
• Title of qualification awarded	Doctor of Philosophy
• Level in national classification	Doctoral Level

• Dates	2007-2009
• Name and type of organization providing education and training	Department of Computer Science & Engineering, Utkal University, Odisha, India
• Principal subject	Digital Signal Processing, Analysis Design & Algorithm, Advanced Computer Architecture, Distributed Operating System, High Speed Networks, Data Communication & Computer Network.
• Title of qualification awarded	Master of Engineering
• Level in national classification	Masters Level

• Dates	2000-2004
• Name and type of organization providing education and training	Ghanashyam Hemalata Institute of Technology & Management, India Biju Patnaik University of Technology, Odisha, India.
• Principal subject	Basic Electronics Engineering, Computer Programming, Analog Communication, Digital Communication. Digital Electronics, Antenna and wave propagation.
• Title of qualification awarded	Bachelor of Engineering in Electronics and Instrumentation
• Level in national classification	Bachelor Level

Teaching Experience/Industrial Experience/Research Experience

• Dates	07/01/2011- Present
• Name and address of employer	Silicon Institute of Technology, Silicon Hills, Patia, Odisha, India, Pin-751024
• Type of business or sector	Education
• Occupation or position held	Associate Professor
• Main activities and responsibilities	Teaching several subjects to under graduate (Bachelor of Engineering) students and conducting lab sessions for them for various courses.
• Dates	10/09/2009- 06/01/2011
• Name and address of employer	Gandhi Group of Institutions, Gandhi Institute for Technological Advancement, Khorda, Odisha, India
• Type of business or sector	Education
• Occupation or position held	Lecturer
• Main activities and responsibilities	Teaching several subjects to under graduate (Bachelor of Engineering) students and conducting lab sessions for them for various courses.
• Dates	01/01/2005- 24/07/2005
• Name and address of employer	IIT, Bombay, India
• Type of business or sector	Education/Research & Development
• Occupation or position held	Software Engineer
• Main activities and responsibilities	Software Development

PUBLICATIONS

JOURNAL ARTICLES

[1]. S. R. Samal, S. Bandopadhaya, S. K. Dora, V. Poulkov, "Coverage analysis of heterogeneous wireless network with n-interacted transmission nodes", IGI Global, International Journal of Interdisciplinary Telecommunications and Networking (IJITN), Vol. 9, no. 4, pp. 49-58, 2017, doi: 10.4018/IJITN.2017100106. [SCI Indexed Journal]

[2]. S. R. Samal, "Interference Management Techniques in Small Cells Overlaid Heterogeneous Cellular Networks", Journal of Mobile Multimedia, Vol: 14, Issue: 3, pp. 273-306, 2018, doi: https://doi.org/10.13052/jmm1550-4646.1432. [Scopus Indexed Journal]

[3]. K.P. Swain, S. R. Samal, I.S. Amiri, M.N. Mohanty, G. Palai, "Digital Advertisement: A BLE Beacon Based Application", International Journal of Advanced Science and Technology, Vol. 29, No. 8s, pp. 2725-2729, May 2020. [Scopus Indexed Journal]

[4]. S. Bandopadhaya, S. R. Samal, V. Poulkov, "Machine Learning Based Performance Predication Model for Massive MIMO HetNet System", MDPI, Senosrs, Vol. 21, no. 3:800, 2021, https://doi.org/10.3390/s21030800. [SCI Indexed Journal]

[5]. S. R. Samal, S. Bandopadhaya, K.P. Swain, V. Poulkov, "Mobility Management in Heterogeneous Cellular Networks: An Analysis of Power Consumption and Network Selection Delay in a k-tier Architecture", Journal of Mobile Multimedia, River Publishers,Vol. 17, Issue 1–3, pp. 407–426, 2021, https://doi.org/10.13052/jmm1550-4646.171321. [Scopus Indexed Journal]

[6]. A. Shrivastava, C. K. Nayak, R. Dilip, S. R. Samal, S. Rout, S. Md. Ashfaque, "Automatic robotic system design and development for vertical hydroponic farming using IoT and big data analysis", Materials Today: Proceedings, Science Direct, ISSN 2214-7853, 2021. https://doi.org/10.1016/j.matpr.2021.07.294. [Scopus Indexed Journal]

[7]. K. Reddy, S. R. Samal, A. Roy, S. Bandopadhaya, "Truncated design for patch antenna in S,C, K-bands for 5G satellite networks", International conference on IoT based control networks and intelligent systems (ICICNIS-2020), IUP Journal of Telecommunications, 13 (3), 19-28, 2020. Online: or http://dx.doi.org/10.2139/ssrn.3769081.

[8]. Sushant K.Pattnaik,Soumya R. Samal, Shuvabrata Bandopadhaya, Kaliprasanna Swain, Subhashree Choudhury, Jitendra K. Das, Albena Mihovska, and Vladimir Poulkov. 2022. "Future Wireless Communication Technology towards 6G IoT: An Application-Based Analysis of IoT in Real-Time Location Monitoring of Employees Inside Underground Mines by Using BLE", *Sensors* 22, no. 9: 3438. https://doi.org/10.3390/s22093438. [SCI Indexed Journal]

[9]. S. K. Sahoo, S. K. Pattnaik, S. R. Samal, C. K. Nayak, J. K. Das, V. Poulkov, "STeSH: Intelligent Speech Technology enabled Smart Home Automation using IoT", Journal of Mobile Multimedia, River Publishers. [Scopus Indexed Journal]

[10]. K. P. Swain, S. Das, S. R. Samal, S. K. Sahu, G. Palai, "Realization of 20 Monochromatic Laser Beams Using a Photonic Crystal (PhC) Structure via the Principle of Filtering", Lasers in Engineering, Old City Publishing. (Accepted) [SCI Indexed Journal]

[11]. S. R. Samal, K. P. Swain, S. Bandopadhaya, N. Dandanov, V. Poulkov, G. Palai, "Dynamic Coverage Optimization for 5G Ultra-Dense Cellular Networks Based on Their User Densities", Wireless Personal Communication, Springer. [SCI Indexed Journal]

[12]. A. Dash, S. Bandopadhay, S.R. Samal, V. Poulkov, "AI-Enabled IoT Framework for Leakage Detection and Its Consequence Prediction during External Transportation of LPG", *Sensors* 2023, *23*, 6473. https://doi.org/10.3390/s23146473. [SCI Indexed Journal]

[13]. K.P. Swain, S. R. Samal, V. Ravi, S. R. Nayak, T. J. Alahmadi, P. Singh, M. Diwakar, "Towards Early Intervention: Detecting Parkinson's Disease through Voice Analysis with Machine Learning", The Open Biomedical Engineering Journal, Bentham Open, 2024, Vol. 18, ISSN: 1874-1207, DOI: 10.2174/0118741207294056240322075602, 2024, 18, e18741207294056. [Scopus Indexed Journal]

CONFERENCE PAPERS

[1]. S. R. Samal, "Pitch Synchronous Overlap Add -In Enhancing the Speech Signal Quality", in the National Conference On "Recent Trends in Information & Communication Technology", India Nov., 2011.

[2]. M. Chaudhari, S. R. Samal, P. Koleva, V. Poulkov, "Sustainable Routing Protocol to Improve Life Time of Manet", "Technology for the Betterment of Human Communication", Global Wireless Summit 2016 (GWS-2016), The AULA, Nordre Ringgade 4, 8000 Aarhus C, Denmark, Nov 2016.

[3]. S. Bandopadhaya, S. R. Samal, S. K. Dora and V. Poulkov, "Base Station Transmission Power Optimization in Interference-Limited Cellular Networks for Maximum Energy Efficiency", in Proceedings of 13th IEEE International Conference on Advanced Technologies, Systems and Services in Telecommunications (TELSIKS), pp. 228-231, Nis, Serbia, Oct. 2017.

[4]. S. R. Samal, S. Bandopadhaya, A. Pathy, V. Poulkov and A. Mihovska "An Energy-Efficient Head Node Selection for Load Balancing in a Heterogeneous Wireless Sensor Network", IEEE Asilomar Conference on Signals, Systems and Computers (ASILOMAR-2018), PacificGrove, United States, Oct. 2018.

[5]. N. Dandanov, S. R. Samal, S. Bandopadhaya, V. Poulkov, K. Tonchev and P. Koleva, "Comparison of Wireless Channels for Antenna Tilt based Coverage and Capacity Optimization", 6th Global Wireless Summit (GWS -2018) Chiang Rai, Thailand, Nov. 2018.

[6]. A. Swain, K. P. Swain, S. R. Samal, S. K. Pattnaik, A. Mishra, J. K. Das, G. Palai, S. Bandopadhaya, "Blockchain Powered Energy Monitoring System", 19th IEEE OITS International Conference on Information Technology (OCIT-2021), India, Dec. 2021.

[7]. R. Chauhan, S. Bandopadhaya, M. Dev, A. Mishra, L. I. Giri, B. Kharale, S. R. Samal, "Design of Robotic Snake With ESP 32 CAM and Arduino", 19thIEEE OITS International Conference on Information Technology (OCIT-2021), India, Dec. 2021.

[8]. A. Swain, K. P. Swain, S. K. Pattnaik, S. R. Samal, J. K. Das, "Cybersecurity in Digital Transformations", 4th Springer International Conference on Intelligent Computing and Advances in Communication (ICAC-2021), India, Nov. 2021.

[9]. S. K. Sahoo, C. K. Nayak, S. K. Pattnaik, S. R. Samal, S. Bandopadhaya, J. K. Das, "Automatic QoS Based Multicast Communication System in MANET", IEEE International Conference on Signal Processing, Information, Communication and Systems (SPICSCON-2021), Bangladesh, 2021.

[10]. A.Swain, K. P. Swain, S.K. Swain, S. R. Samal, G. Palai, Automated Test Case Prioritization Using Machine Learning. In: Mohanty, M.N., Das, S., Ray, M., Patra, B. (eds) Meta Heuristic Techniques in Software Engineering and Its Applications. METASOFT 2022. Artificial Intelligence-Enhanced Software and Systems Engineering, vol 1. Springer, Cham, 2022. https://doi.org/10.1007/978-3-031-11713-8_21

[11]. A. Mishra, N. Singh, S. R. Samal and S. Dash, "Biogeography Based Optimized Hybrid Chebyshev FLANN for Fingerprint Classification," 2023 1st International Conference on Circuits, Power and Intelligent Systems (CCPIS), Bhubaneswar, India, 2023, pp. 1-4, doi: 10.1109/CCPIS59145.2023.10292107.

[12]. S. R. Samal, S. Bandopadhaya, A. Roy, A. Mishra, A. Mihovska and V. Poulkov, "MQTT Protocol Based IoT Solution for Voice-Controlled Smart Home," 2023 26th International Symposium on Wireless Personal Multimedia Communications (WPMC), Tampa, FL, USA, 2023, pp. 171-175, doi: 10.1109/WPMC59531.2023.10338841.

[13]. P. Singh, S. Bandopadhaya and S. R. Samal, "Test Model To Predict Diabetes Using Machine Learning Algorithm," 2022 Fourth International Conference on Emerging Research in Electronics, Computer Science and Technology (ICERECT), Mandya, India, 2022, pp. 1-4, doi: 10.1109/ICERECT56837.2022.10531064.

ANY OTHER

BOOK CHAPTER

CONFERENCES ATTENDED

[1]. S. R. Samal, N. Dandanov, S. Bandopadhaya, V. Poulkov, "Adaptive Antenna Tilt for Cellular Coverage Optimization in Suburban Scenario", In: Dehuri S., Mishra B., Mallick P., Cho SB., Favorskaya M. (eds) Biologically Inspired Techniques in Many-Criteria Decision Making. BITMDM 2019. Learning and Analytics in Intelligent Systems, vol 10. Springer, Cham. https://doi.org/10.1007/978-3-030-39033-4_22

[2]. K.P. Swain, S. R. Samal, I.S. Amiri, M.N. Mohanty, G. Palai, "Academic Students Attendance System: A case study of Alexa skill development", In: Sabut S.K., Ray A.K., Pati B., Acharya U.R. (eds) Proceedings of International Conference on Communication, Circuits, and Systems. Lecture Notes in Electrical Engineering, vol 728. Springer, Singapore. https://doi.org/10.1007/978-981-33-4866-0_1

[3]. K. P. Swain, S. R. Samal, S. Misra, S. K. Swain, T. Dash, and S. Choudhury, "Real-Time-Based Heart Patient Monitoring System: An Application of Health Care IoT", Applied Soft Computing Techniques: Theoretical Principles and Practical Applications, Apple Academic Press, Taylor & Franics.

[4]. K. P. Swain, Sarita Misra, S. K. Nayak, S. R. Samal, and G. Palai, "Sentiment and Depression Analysis Using Machine Learning", Applied Soft Computing Techniques: Theoretical Principles and Practical Applications, Apple Academic Press, Taylor & Franics.

RESEARCH PROJECTS

[1]. DN07/19 Research project: "Methods for Estimation and Optimizing Electromagnetic Emissions in Urban Areas", of the Bulgarian Research Fund of the Ministry of Education.

[2]. KP06-N27/3 Research project: "Resource self-configuration and management in ultra-dense networks with user centric wireless access", of the Bulgarian Science Fund.

[3]. D01-285/06.10.2020 HOLOTWIN Research project: Bulgarian Research Fund of the Ministry of Education.

[4]. BG-RRP-2.005-0002 Research project: "Twinning for Excellence in Research in Sustainable Future Communication Networks in the Context of a Green Economy – GREENBEAT.