Somenath Chakraborty

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Career Objective:

To achieve research and professional excellence through continuous learning and teaching while being resourceful, innovative, and flexible with my proven track record of strong problem-solving and analytical skills.

Current Position:

Assistant Professor(Tenure-Track) at the department of Computer Science and Information Systems at Leonard C. Nelson College of Engineering and Sciences in West Virginia University Institute of Technology, Beckley, WV, USA, A full division of West Virginia University(R1 Research University)

Previous Teaching, Guiding, and Administrative Expertise:

➢ **Graduate Teaching Assistant** in the School of Computing Science and Computer Engineering at "The University of Southern Mississippi", MS, USA(from Aug. 2020 to Aug. 2022).

➢ **Graduate Research Assistant** in the School of Computing Science and Computer Engineering at "The University of Southern Mississippi", MS, USA(from January 2019 to July 2020).

➢ Working as a **Principal(Academic and Administrative head of the institution)** at Harirampur Government Industrial Training Institute(ITI), West Bengal, India (from 15th May 2016 to 30th November 2018).

➢ Working as a **Lecturer**, **Senior Lecturer**, and **Assistant Professor** in the department of Computer Science & Engineering & Information technology at Saroj Mohan Institute of Technology, India (from 25th August 2007 to 15th May 2016).

Research Publications:

➢ Somenath Chakraborty, Beddhu Murali, Amal Mitra, **"An Efficient Deep Learning Model to Detect COVID-19 Using Chest X-Ray Images"**, International Journal of Environmental Research and Public Health,(SCIE, SSCI, MEDLINE, PubMed, Scopus, etc. indexed, Premier MDPI journal with Impact Score: 3.39). Feature at **World Health Organization** Global research on COVID-19.

➢ Somenath Chakraborty and Samir Kumar Bandyopadhyay, *"Scene text detection using modified histogram of oriented gradient approach"*. International Journal of Applied Research, IJAR 2016; 2(7): 795-798, ISSN: 2394-7500.

➢ Somenath Chakraborty, Samir Kumar Bandyopadhyay and Banani Saha, *"Dynamic channel allocation in IEEE 802.11 Networks"*, International Journal of Computer Applications. IJCA 2016; ISSN: 0975 – 8887. This research was referred by a **US patient** owned by **HITACHI ENERGY SWITZERLAND AG**. Publication Number WO/2021/152132.

➢ Somenath Chakraborty, Chaoyang Zhang, *"Survival Prediction Model of Renal Transplantation using Deep Neural Network"*, IEEE International Conference for Convergence in Engineering-2020.(**Scopus** Indexed)

- Somenath Chakraborty, Beddhu Murali, *"A Novel Medical Prognosis System for Breast Cancer"* at the "International Conference on Advanced Computing and Applications", 2021 Publisher: "Advances in Intelligent Systems and Computing" AISC series, Springer. (**Won Best Paper award)**.
- Somenath Chakraborty, Dia Ali, Beddhu Murali, **"A Novel Distributed Database Architectural Model for Mobile Cloud Computing"** at the "International Conference on Computational Techniques and Applications" – ICCTA 2021, Lecture Notes in Networks and Systems, vol 426. Springer, Singapore. https://doi.org/10.1007/978-981-19-0745-6_17 (**Scopus** Indexed).
- Somenath Chakraborty, Beddhu Murali, **"An Ensemble Machine Learning Model to detect COVID 19 using Chest X-Ray"** at the "7th International Conference on Emerging Applications of Information Technology (EAIT 2022)", - Theme: Frontiers of ICT in Healthcare.
- Somenath Chakraborty, "**A Green Mobile Cloud Computing Model for Distributed Architecture**", International Journal of Wireless and Microwave Technologies(IJWMT).
- Sayani Sarkar, Somenath Chakraborty, **"The classification of Native and Invasive Species in North America: A Transfer Learning and Random Forest Pipeline"**, 5th International Conference on Recent Trends in Image Processing & Pattern Recognition (RTIP2R), Texas, USA .
- Somenath Chakraborty, Beddhu Murali, "**A Competent Deep Learning Model to Detect COVID-19 Using Chest CT Images**", 10th Machine Intelligence and Digital Interaction MIDI Conference 2022, organized by the National Information Processing Institute in Warsaw, Poland.
- Meenakshi Sanyal, Somenath Chakraborty, "**Enhanced Multigradient Dilution Preparation**" at the International Conference on Computational Intelligence & Sustainable Technologies (ICoCIST-2021).
- Somenath Chakraaborty, **"Point-of-Interest (POI) Recommendation Model Simulation using Social Relationships and Geographical Factors"**, Journal of Science and Engineering Research (JSER).
- Somenath Chakraborty, Beddhu Murali, "**Investigate the Correlation of Breast Cancer Dataset using Different Clustering Technique**", Preprint, https://arxiv.org/ftp/arxiv/papers/2109/.
- Somenath Chakraborty, "**A Local Outlier Mining Algorithm Based on Region Segmentation**", Korean Society for Computer Game.

Symposium:
- Somenath Chakraborty, Beddhu Murali, "**Structural Health Monitoring Using Artificial Intelligence Techniques**" at the International Symposium on Robotics in Industry, Agriculture and Healthcare(ISRIAH 2022) organized by the Indian Institute of Technology(IIT)-Kanpur, India, and Waseda University, Japan.
- Somenath Chakraborty, Beddhu Murali, "**Application of Artificial Intelligence in Medical and Epidemiology**", at the Susan A. Siltanen Graduate Student Research Symposium, 2022 organized by The University of Southern Mississippi, USA.
- Somenath Chakraborty, Beddhu Murali, "**Covid-19 detection using Machine Learning**", at the Susan A. Siltanen Graduate Student Research Symposium, 2021 organized by The University of Southern Mississippi, USA.

Book Chapter:

- Somenath Chakraborty, *"Category Identification Technique by a Semantic Feature Generation Algorithm"* in Deep Learning for Internet of Things Infrastructure. Publisher: CRC Press, Taylor & Francis.
- Somenath Chakraborty, **"Deep Learning methods to resolve cyber security issues"**, Publisher: CRC Press, Taylor & Francis.

Active Funded Project:

- ✓ Project Title: An Experimental Testbed of Internet of Things, funded by Science, Technology and Research (STaR) Division of West Virginia Higher Education Policy Commission (HEPC). Estimated Grant Period: 11/01/2022 -04/30/2023, Grant Number: IGP23-4, Funded Amount: $19,700.00. (PI's: Charan Litchfield, Mingyu Lu, Thang Bui and Somenath Chakraborty)

Professional Body Membership:

- Senior IEEE Member, Member of IEEE Computer Society, IEEE Young Professionals, The IEEE Computer Society Bio-inspired Computing Special Technical Community (STC).
- Volunteering IEEE West Virginia Section
- IEEE email: Somenath@ieee.org
- ACM Professional Member and Mentoring Faculty at West Virginia University Institute of Technology Chapter, Chapter Group ID: 46703.

Research Activities:

- ❖ *Guest Editor of MDPI(World's largest Open Access journal) journal, named as, COVID , Special Issue "Artificial Intelligence and Machine Learning Applications for Developing the Diagnosis of COVID-19".*
- ❖ *Reviewer of IEEE high impact peer-reviewed journal "IEEE Journal of Biomedical and Health Informatics", USA, ISSN / eISSN: 2168-2194 / 2168-2208. (SCIE indexed)*

- ❖ *Editorial Board member of the journal "Journal of Machine Learning in Fundamental Sciences (JMLFS) ", UK, ISSN 2632-2714.*
- ❖ Assistant Editor of "**International Journal of Applied Research**". ISSN Print: 2394-7500 | ISSN Online: 2394-5869 | CODEN: IJARPF. India.
- ❖ *Reviewer of "Diagnostics", MDPI Publishing, ISSN 2075-4418. Scopus, SCIE (Web of Science), PubMed, PMC indexed.*
- ❖ *Reviewer of "Biology", MDPI Publishing, ISSN 2079-7737. Scopus, SCIE (Web of Science), PubMed, PMC, PubAg, CAPlus / SciFinder indexed.*
- ❖ *Reviewer of "Journal of Clinical Medicine", MDPI Publishing, ISSN 2077-0383. Scopus, SCIE (Web of Science), PubMed, PMC etc. indexed.*
- ❖ **Reviewer** of IEEE open access journal "**IEEE Access**" ISSN / eISSN 2169-3536,Publisher: IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC, USA. (SCIE indexed)
- ❖ **Reviewer** of IEEE journal "**IEEE Transactions on Circuits and Systems for Video Technology**", ISSN / eISSN:1051-8215 / 1558-2205, Publisher: IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC , USA. (SCIE indexed)
- ❖ **Reviewer** of Springer journal "**Earth Science Informatics**", 1865-0481/Print ISSN 1865-0473(SCIE indexed)

- ❖ **Reviewer** of "*Mathematical Problems in Engineering*", *Hindawi Publishing, ISSN: 1024-123X (Print) ISSN: 1563-5147 (Online). (SCIE and Scopus indexed)*
- ❖ *Reviewer of "Computational and Mathematical Methods in Medicine", Hindawi Publishing, ISSN: 1748-670X (Print) ISSN: 1748-6718 (Online). (SCIE, Scopus, Medline, PubMed, etc. indexed)*
- ❖ *Reviewer of "The Imaging Science Journal", Taylor & Francis, (SCIE, Scopus etc. indexed)*
- ❖ *Reviewer of "Journal of Advances in Information Technology(JAIT)", ISSN: 1798-2340 (Online),(Scopus indexed)*
- ❖ **Reviewer** of "**IET Quantum Communication**", Published by Wiley.
- ❖ **Reviewer** of IEEE Workshop on Security Trust Privacy for Emerging Cyber-Physical Systems,2020.
- ❖ **Technical Program Committee** member of 2nd IEEE Workshop on Security Trust Privacy for Emerging Cyber-Physical Systems. USA.
- ❖ **Reviewer** of "The IEEE SoutheastCon 2021 Committee", USA.
- ❖ **Technical Program Committee** Member and Reviewer of "The IEEE SoutheastCon 2022 Committee", USA.
- ❖ **Organizing Committee** Member at 2nd International Conference on Advanced Computing and Applications (ICACA-2021). India.
- ❖ **Technical Program Committee** member of 2021 Sixth International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN 2021). India
- ❖ **Technical Program Committee** member of 2021 5th International Symposium on Computer Science and Intelligent Control (ISCSIC 2021), Italy.
- ❖ **Technical Program Committee** member of International Conference on Computing, Intelligence and Data Analytics (ICCIDA 2022), Turkey.
- ❖ **Program Committee Member** of 10th Machine Intelligence and Digital Interaction MIDI Conference 2022, organized by the National Information Processing Institute in Warsaw, Poland.
- ❖ **Technical Committee Member** of Medical Image Learning with Limited & Noisy Data (MILLanD), a workshop under The 25th International Conference on Medical Image Computing & Computer Assisted Intervention (MICCAI 2022),September, 18,2022 in Singapore.
- ❖ **Technical Program Committee(TPC) member** of The 5th International Conference on Recent Trends in Image Processing & Pattern Recognition (RTIP2R), will be held on November 22 - 23, 2022 Texas A&M University - Kingsville, Texas (USA).
- ❖ **Technical Session Chair** of The IEEE International Conference on Computing, Communication, and Intelligent Systems was held from 04th-05th Nov, 2022 at Sharda University, Greater Noida, India.
- ❖ **Technical Program Committee Member** and Reviewer of "The IEEE SoutheastCon 2023 Committee", USA, going to happen in April 13 - 16, 2023 - Orlando, Florida, USA.
- ❖ **International Advisory Committee Member** of International Conference on Data Science and Communication (ICTDsC 2023) which will be held on 23-24, March 2023 - Siliguri Institute of Technology, Sukna, Siliguri, West Bengal, India.

Educational Qualification:

- ✓ **Ph.D. in Computational Science and Computer Engineering** at "**The University of Southern Mississippi**"(An R1 Research University) at Hattiesburg, Mississippi, USA (January 2019 to July 2022)
  Thesis Title: Application of Deep Learning for Medical Sciences and Epidemiology Data Analysis and Diagnostic Modeling.
- ✓ **M-Tech in Information Technology** from West Bengal University of Technology (In-house) (2010-2012).

Thesis Title: **Dynamic channel allocation in wireless LAN using simulated annealing**.

- ✓ **B-Tech in Computer science & Engineering** (2003-2007) from West Bengal University of Technology.
Thesis title: **Developing a Social networking website implementing the three-tier architecture of the client-server model using JSP.**
- ✓ **Higher Secondary** (2000-2002) from West Bengal Council of Higher Secondary Education.
- ✓ **Secondary** or Madyamik Examination (1998-2000) from West Bengal Board of Secondary Education.

Software Skills:

- ❖ **Languages**: Python, R, JavaScript, ReactJS, C, C++, OpenCV, Java, Ruby, Kotlin, JSP, MATLAB.
- ❖ **Software Tools**: Weka, R Studio, Visual Studio, Visual Studio Code, PyCharm, Anaconda, Tableau.
- ❖ **DBMS**: SQL, MySQL, MongoDB, Neo4J, MS Access.
- ❖ **Data Science and deep learning**: PyTorch, Tensorflow, Keras, Scikit-learn, Pandas.

Certificates:

- ✓ **'Neural Networks and Deep Learning'** by deeplearning.ai, taught by Dr. Andrew Ng (Stanford University) from Coursera (MOOC).
- ✓ **'Signal and Systems'** by Indian Institute of Technology, Bombay, India.
- ✓ "**Python Essential Training**" from LinkedIn Learning.
- ✓ "**Learning Cloud Computing: Core Concepts**" from LinkedIn Learning.
- ✓ "**Linux: System Information and Directory Structure Tools**" from LinkedIn Learning.
- ✓ **J2EE** by STG Group, an international Software Training Group.
- ✓ **'Data Science Math Skills'** by Duke University and offered through Coursera(MOOC).
- ✓ **'Problem Solving Techniques'** from LinkedIn Learning.
- ✓ "**PyTorch Essential Training: Deep Learning**" from LinkedIn Learning
- ✓ **'Programming Foundations: Fundamentals'** from LinkedIn Learning.
- ✓ **Project Completion on Machine Learning**, from Coursera(MOOCs).
- ✓ **Project Completion on Image Classification with CNNs using Keras deep learning model**, on Coursera(MOOC) and many others.

Personal Skills:
Comprehensive problem-solving abilities, excellent verbal and written communication skills, ability to deal with people diplomatically, willingness to learn, team facilitator, hard worker. Wikipedia Writer.

Extra-Curriculum Activities:
- ➢ **President** of **"Graduate Student Association for Arts and Sciences (CAS GRADS)"** from spring 2021 – Spring 2022 for All Campuses of USM.
- ➢ **Secretary** of **"Graduate Student Association for Arts and Sciences (CAS GRADS)"** from spring 2020 – Spring 2021 for All Campuses of USM.

- ➢ **Eco-Ambassador**, **Office of Sustainability**, The University of Southern Mississippi.

References:
- ✓ Prof. Sarah Lee, Director and Full Professor, School of Computing Sciences and Computer Engineering, The University of Southern Mississippi, Hattiesburg, Mississippi.
- ✓ Prof. Andrew Sung, Full Professor, School of Computing Sciences and Computer Engineering, The University of Southern Mississippi. USA
- ✓ Dr Beddhu Murali, Clinical Associate Professor, School of Computing Sciences and Engineering, The University of North Texas, Denton, Texas.

Declaration:
I hereby declare that all the above information is true to the best of my knowledge.
Place: Hattiesburg,
MS, USA   Somenath Chakraborty