Mrs. JAI ANEESH DESAI

Assistant Professor, Department of E & TC

jaidesai.scoe@sinhgad.edu

OVERVIEW:

Qualifications: Ph.D. (E&TC - Pursuing), ME (E&TC), BE (E&TC)
Experience: Teaching -18 years
Date of Joining STES: 01/09/2006
Skills and Proficiencies: VHDL**,** Machine Learning, MATLAB, C,

SIGNIFICANT ACHIEVEMENTS:

- Awarded 'The Best Teacher Award' in the Academic Year 2016-17
- Appreciation from BOS, SPPU for syllabus designing of the subject 'VLSI Design and Technology', at BE E&TC 2019 syllabus revision
- AVISHKAR 2024: Participated in Zonal Level Research Project Competition AVISHKAR 2015 held by BCUD, SPPU
- Reviewer for International journal "Journal of Communication Systems"

AREA OF EXPERTISE /RESEARCH INTERESTS:

- Wireless Communication, Machine Learning

NUMBER OF STUDENTS GUIDED:

- UG – 20+ Groups

RESEARCH PULICATIONS:

Publication Summary:

Scopus/ SCI-02
International Journal: 02
Conference : 07
h-index : 01
i10 index : 00
https://scholar.google.com/citations?hl=en&user=JvnCgr0AAAAJ

RESEARCH WORK:

Ph. D. Research Work:

- Present communication systems consume more transmission power for limited data rates. Beyond 6G systems should offer higher data rates with energy efficiency. The Large Intelligent Surfaces can be a most promising candidate for the increase of coverage area and the data rate in 6G and Beyond 6G communication systems. The main aim is to provide an efficient Energy Harvesting [EH] aspect in LIS that can interact with the incident signal in such a way that optimizes a certain performance metric such as:

  •SINR

  •System achievable rate

  •System performance gain

  •Energy efficiency

- Various simulation models using Machine Learning algorithms will be developed for implementing the Energy Harvesting aspects in LIS by optimizing the various performance metrics.
- The models thus developed will be analysed with the help of various ML tools/algorithms for controlling the propagation environment by the performance metrics mentioned above. Various ML algorithms will be investigated in which the initial datasets for training will not be required

NOTABLE GUIDED PROJECTS:

UG projects:

ASIC BACKEND IMPLEMENTATION FOR DRONE SOC AND LOW POWER IOT APPLICATION

- This project focuses on the backend design and implementation of an All-Digital Phase Locked Loop (ADPLL) for Drone System-on-Chip (SoC) and low-power IoT applications, leveraging Cadence tools for key tasks such as synthesis, placement, and routing.
- The ADPLL, a fully digital system essential for generating and synchronizing clock signals, offers higher integration and flexibility over traditional analog PLLs, making it ideal for power-sensitive and space-constrained devices like IoT sensors and drones. By optimizing the design for performance, power consumption, and area efficiency, this project ensures the ADPLL meets the demands of modern wireless communication systems, while also conducting comprehensive backend checks like timing analysis and layout improvements to ensure robust and efficient operation.

RESOURCE PERSON TO INDUSTRY/ACADEMIA:

- Reviewer for the prominent journals Internal Journal of Communication Systems, Journal of Integrated Science and Technology

SUBJECTS TAUGHT:

- Signals and Systems
- Integrated Circuits
- Digital Communication
- Digital Electronics
- Electronic Circuits
- Broadband Communication Systems
- Principles of Communication Systems
- Data Structures
- VLSI Design and Technology

FDP/STTP/SDP/WORKSHOPS ORGANIZED AS A COORDINATOR:

- Co-coordinator for SPPU Faculty Orientation Workshop on SE 2015 syllabus for the subject 'Control Systems'
- Co-coordinator for Short Term Training Program on 'Best Practices for Life Skill Management' for supporting staff, July 7-11 2020
- 'Internal Hackathon' under Smart India Hackathon at institute on Jan 17 2020
- Co-coordinator for SPPU Faculty Orientation Workshop on BE 2019 syllabus for the subject 'VLSI Design and Technology'
- Technical Chair for the Conference NCPC 2024

CONFERENCES ATTENDED:

- ePGCON: Conference for PG Electronics Students at Sinhgad College of Engineering on 25 April 2009
- National Conference on Pervasive Computing at Sinhgad College of Engineering on 9-10 April 2010
- National Conference on Advances in Signal Processing and Communications at Genba Moze College of Engineering on 18-19 Feb 2011
- ACCET 2017 at Wadia College on 2 March 2017
- Global Conference on Next Generation Information Communication Technologies (GC NG ICT2020) at NBN Sinhgad School of Engineering on 10-11 April 2020
- International conference on Communications and Cyber – Physical Engineering at G H Raisoni College of Engineering and Management, Pune on 9-10 April 2021
- TENSYMP 2022 at IIT Mumbai on 1-3 July 2022

FDP/STTP/SDP ATTENDED:

- TEQIP/AICTE/ISTE/IETE sponsored FDP - 05
- Spoken Tutorial IIT Bombay sponsored FDP -04
- Others - 02

RESPONSIBILITIES HANDLED AT STES/SCOE/DEPT:

Institute Level (SCOE)

- SPOC for Smart India Hackathon for the years 2017-2021
- Senior Supervisor for SPPU in SEM Exam July 2016
- Senior Supervisor for SPPU Winter Exam 2015
- Department NAAC Criteria 2 Coordinator at SCOE in 2022
- Worked for Mission 2021 onwards for Admission Counselling Cell.

Department Level (E&TC)

- Department NAAC coordinator at NBN SSOE in 2017
- Department NAAC Criteria Coordinator at SCOE in 2022
- Project Guide for BE students

DECLARATION:

I hereby declare that all the above information furnished by me are true to the best of my knowledge.

Date: 18 /12/ 2024 Signature