DIPALI JAIN

PhD in progress

CONTACT

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EDUCATION

University of Texas at Dallas, Texas, USA
PhD in progress
Computer Engineering - Hardware security using AIML.
(Expected graduation Fall 2025)

Great Lakes and The University of Texas at Austin
Post-Graduation AIML
(April 2022)

Mumbai University
MS, Instrumentation and Control Engineering
Pune University
BS, Instrumentation Engineering

ADDITIONAL SKILLS

Languages - English, Marathi, Hindi
Software skills - Python, C, C++,
Tools: Hspice, Cadence
PLC - Ladder**,** DCS - Functional Block
MATLAB, LabVIEW

CAREER OBJECTIVE

Passionate and detail-oriented PhD candidate with a focus on hardware security through AI, aiming to apply advanced research and technical skills in semiconductor technology and artificial intelligence. Aspiring to develop innovative solutions that enhance security and optimize performance in the semiconductor sector, while advancing AI-driven hardware innovations. Dedicated to working with cutting-edge teams to shape the future of secure, intelligent hardware systems.

EXPERIENCE

ASSISTANT PROFESSOR (2010 - 2022)
MCT'S Rajiv Gandhi Institute of Technology, *Mumbai*, *Maharashtra*

1. Developed Industrial Automation Laboratory equipped with DCS system from Emerson and a pilot plant comprising Reactor and Heat Exchanger set up.
2. Involved in the Development of graphical visualization system using LabVIEW Platform for cryogenic plants in TIFR, Mumbai.
3. Member of syllabus revision committee for Embedded and IoT domain at University of Mumbai
4. Courses taught – Python Programming, Internet of Things, Industrial Automation, Image Processing, Elements of Microprocessors, Mechatronics, Embedded systems, Industrial Process control, Digital Electronics, Basic Control Systems, Electrical Networks, and Electronic Devices and Circuits.

PROJECTS AND PUBLICATIONS

PUBLICATIONS

"Towards Machine-Learning-based Oracle-Guided Analog Circuit Deobfuscation.", Dipali Jain, Guangwei Zhao, Rajesh Kumar Datta, and Kaveh Shamsi. In 2024 IEEE International Test Conference (ITC), 323-332.

"A Hybrid Machine Learning and Numeric Optimization Approach to Analog Circuit Deobfuscation.", Dipali Jain, Guangwei Zhao, Rajesh Kumar Datta, and Kaveh Shamsi. In 30th Asia and South Pacific Design Automation Conference (ASP-DAC 2025), to appear.

News-Letter Editor for ISA Maharashtra section - 2020-21

CERTIFICATIONS

"How Google Does Machine Learning? ", COURSERA

"Introduction to basic Python", COURSERA

“Introduction to Internet of Things”, NPTEL

"Digital Image Processing", NPTEL

“Faculty Development program on AI and Data Science”

AWARDS

Best Faculty Advisor 2019 – International Society of Automation (ISA) Maharashtra Section

University grant for minor research project – Mumbai University

HOBBIES

Yoga
Reading
Music
Travelling

SOCIAL

LinkedIn:
www.linkedin.com/in/dipali-joshi-1164b76a

GIT

https://github.com/dipaishaj

https://bitbucket.org/ddj210002/workspace/projects/

"**Trojan Localization in Generic AMS Circuits from Combined Power and Functional",** Dipali Jain, Guangwei Zhao, Rajesh Kumar Datta, and Kaveh Shamsi. In IEEE International Symposium on Hardware Oriented Security and Trust (HOST), 2025, to appear.

"On Hardware Trojan Detection using Oracle-Guided Circuit Learning.", Datta, Rajesh Kumar, Guangwei Zhao, Dipali Jain, and Kaveh Shamsi. In Proceedings of the Great Lakes Symposium on VLSI 2024, pp. 198-203. 2024.

"Comparison of Particle Swarm Optimization and Ziegler Nichols Techniques", Dipali Joshi-Jain, Gaurav S. Gunjal, Sahil S. Hadkar, Prasad S. Deshmukh, International Journal for Research in Engineering Application & Management (IJREAM) -V06-I01-61067, April 2021.

“Classification of Brain cancer using artificial neural network”, Joshi, Dipali, N. K. Rana, and V. M. Misra." In 2010 2nd International Conference on Electronic Computer Technology (ICECT), IEEE 2010 International conference, 112 – 116, June 2010

HARDWARE DEMONSTRATION

Mixed-Signal Generic Adaptive Side-Channel Analysis using Machine Learning, Hardware Oriented Security and Trust Symposium (HOST) 2023**, Generic Digital Circuit Learning from Adaptive Side-channel Queries and ML,** Hardware Oriented Security and Trust Symposium (HOST) 2023

PROJECTS

Computer Vision and CNN
Understanding the characteristics of plant and plant seedlings at various stages of growth using SVM, Random Forest classifier, ANN and CNN

Recommendation Systems
Use case of an e-commerce company, which can recommend mobile phones to a user, which are most popular and personalized using popularity-based recommendation and collaborative filtering

Unsupervised Learning:
Cluster the vehicles based on fuel consumption attributes to train a regression model, generating synthetic data using existing partially labelled data provided for a wine manufacturer.

Supervised Learning:
Predicting the condition of the patient depending on the received test results on biomechanics features of the patients according to their current conditions using neural networks.

IoT based Weather reporting System
PLC based Automated Bottling Plant. (funded project)
Automated French Fries Machine
Development of graphical visualization system using LabVIEW Platform for cryogenic plants in TIFR, Mumbai

REFERENCE

Dr. Kaveh Shamsi, Assistant Professor
University of Texas at Dallas
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