

Dr. Malik S. A.

ASSISTANT PROFESSOR · DEPARTMENT OF ECE

Islamic University of Science and Technology Awantipora, JK, India-192122

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Education

National Insatitute of Technology Srinagar

PHD SPIKING NEURAL NETWORKS(SNNs)

- Advisor: Prof. A. H. Mir

Srinagar, India-190006

April-2017 to Oct.-2021

National Institute of Technology Srinagar

MTECH COMMUNICATION & IT

- Project Advisor: Dr. G. R. Begh

Srinagar, India-190006

Aug.-2013 to July-2015

Islamic University of Science and Technology Awantipora

BTECH ECE

- Undergrad project advisor: Dr. Khalid Muzaffar

Awantipora India-192122

August-2007 to July 2011

Publications

PUBLISHED

Malik, S. A. & Mir, A. H. “Discrete multiplierless implementation of fractional order hindmarsh–rose model”. *IEEE Transactions on Emerging Topics in Computational Intelligence* 5, no. 5: 792-802.

Malik, S. A. & Mir, A. H. “Synchronization of fractional order neurons in presence of noise”. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 19(3), 1887-1896.

Malik, S. A. & Mir, A. H. “Synchronization of hindmarsh rose neurons”. *Neural Networks*, 123, 372-380.

Malik, S. A. & Mir, A. H. “FPGA realization of fractional order neuron”. *Applied Mathematical Modelling*, 81, 372-385.

Malik, S. A., Muzaffar, K., Mir, A. H., & Moon, A. H. “Extremely close integration of dual band sub-6 GHz 4G antenna with unidirectional mm-wave 5G antenna”. *Progress in Electromagnetics Research Letters*, 96, 73-80.

Research Grants

2019-2021 Collaborative Research Scheme, TEQIP-III

1.4 Million INR

Conferences

In 2020. *IEEE International Conference on Communication, Networks and Satellite (Comnetsat)* (pp. 266-270). Enhanced Gain Compact Millimetre Wave Dipole Antenna for 5G Communication with Meta- Material Loading.

Attended a two day “National Seminar on Electronic Devices, Systems and Information Security, SEEDS-2015” organized by Postgraduate Department of Electronics and Instrumentation Technology, University of Kashmir, J&K, India from 16th-17th March 2015

Attended a three day International conference on “Computers, Communication and Electronic Engineering, COMMUNE-2015” organized by University of Kashmir, JK, India from 16th-18th March 2015.

Teaching Experience

■ Assistant Professor, IUST Awantipora September 2018 - present

ECE240C(Network Analysis), ECE352C(Digital Signal Processing), ELE450C(Digital Signal Processing), ECE212C(Electronics and Electrical Lab), (Probability Random Variable & Random Processes)

– Responsibilities:

- * Basic Electronics & Electrical laboratories for undergraduate students.
- * Designed the new experiments for the Signal Processing and updated the manuals.
- * Conducted Course work/tutorials.
- * Marked and graded assignments.
- * Project Work.
- * Involved in the accreditation program of NAAC.
- * Research guidance as Supervisor/Co-Supervisor in PhD.

■ Assistant Professor, NIT Srinagar, March 2016 - March 2017

ECE301C(Network Analysis), ECE302C(Signals & Systems)

– Responsibilities:

- * Maintenance of the E & C engineering department's undergraduate laboratories.
- * Coordination of different seminars.
- * General classroom duties performed: Test formation, grading.

■ Lecturer, University of Kashmir Srinagar, India July 2015 - Jan 2016

ECE502C(Signals & Systems) ECE508(Numerical Methods)

– Responsibilities:

- * Delivered lectures to students in the pre-final year.
- * Developed curriculum and laboratory manual for the course.
- * Maintained regular office hours for additional student assistance.
- * General classroom duties performed: Test development, grading, assigning of homework.

■ Assistant Professor: IUST Awantipora, India, March 2013 - Aug 2013

ECE203C(Analog Electronics) ECE210C(Analog Electronics Lab)

– Responsibilities:

- * Delivered lectures to students in the 2nd year.
- * Developed curriculum and laboratory manual for the course.
- * Maintained regular office hours for additional student assistance in their project work.
- * General classroom duties performed: Test development, grading, assigning of homework.

■ Lecturer: University of Kashmir Srinagar, India, March 2012 - March 2013

ECE211C(Analog Electronics Lab) ECE212C(Numerical Simulations-MATLAB)

– Responsibilities:

- * Delivered lectures to students in the 3rd year.
- * Developed curriculum and laboratory manual for the course Digital Signal Processing.
- * Maintained regular office hours for additional student assistance in their project work.
- * General classroom duties performed: Test development, grading, assigning of homework.

Mentoring

2012-2023 **BTech ECE Project guidance**, as Lecturer & Assistant Professor

2016-2017 **MTech ECE Project guidance**, NIT Srinagar

2022-2023 **PhD Research guidance as PhD advisor**, IUST Awantipora

Research Experience

NIT Srinagar - Dept of ECE

ADVISOR: PROF. A. H. MIR

Srinagar, India
April 2017 - Oct. 2021

- Dissertation: "Neuronal Models: From Dynamics to Implementation"
- Designed a synchronized SNN which can learn any real time input research presented in "Neural Network Journal".
- Digital Hardware Implementation of Fractional Order Operator research presented in "Applied Mathematical Modelling journal".
- Presented a Simplified version of SNN model which can used for large scale implementation of SNNs research presented in "IEEE Transactions journals".

Research Experience

IUST Awantipora - Dept of ECE

AS PHD ADVISOR/CO-SUPERVISOR:

Awantipora, India
Aug. 2018- Present

- Scholar: Mr Rayees A. Lone
 - Thesis Title: "**Signal Processing and Control**"
 - Date-of-award: **ongoing**
- Scholar: Ms. Nazia Farooq
 - Thesis Title: "**Millimeter Wave Antenna Design for 5G and Future Generations**"
 - Date-of-award: **ongoing**
 - AS: **Co-Supervisor**

Research Interests

- Signal Processing
- Fractional Order Modelling
- Spiking Neural Networks(SNNs, AI)
- Numerical Simulations of DEs and FoDEs
- Hardware Implementation/Modelling of systems.

ICT-Skills

- **Word Processing:** MS Office, Latex.
- **Programming Languages:** C++, Python, Microsoft Visual Studio.
- **Technical Software Packages:** MATLAB, Mathematica, Simulink, VHDL-HLS.

Professional Development

SERVICE AND OUTREACH

- **Coordinator:** Department Research Coordinator (2022-present).
- **Member:** DIQA Member (2020-Present).
- **Coordinator:** NIRF-Coordinator (2023-Present).

DEVELOPMENT

Workshops I Participated In

- 14 days workshop on Robotics and Automation organized by IIT Dehli.
- 3 days workshop on signal Processing organized by IIT Kanpur.
- 1 day orientation workshop for Principal Investigators on Collaborative Research Scheme held at AICTE New Delhi.
- 1 week "Summer training program on advanced pedagogy and digital tools" IIT Kanpur.
- 1 day "NPTEL Awareness Workshop" conducted by IIT Kanpurat IUST.
- 1 week "Knowledge Incubation for TEQIP" IIT Kanpur.
- 40 hour online Faculty development on "Applications of Applied Signal Processing, Communication and devices for IOT driven e-Health care".
- 4 weeks certification program on "BlockChain Technologies".

PEER REVIEW

- Applied Mathematical Modelling.
- IEEE-TETCI

PROFESSIONAL MEMBERSHIPS

■ IEEE, IEI

NATIONAL LEVEL EXAMS/ACCOLADES

■ **GATE**(5-Times), **JRF**(4-Times), **NET**(6-Times),**JK-SLET**

References

■ **Prof. A. H. Mir**(Ph.D. Advisor)

Professor (HAG),
Department of Electronics & Communication Engineering,
National Institute of Technology, Srinagar
Email: ahmir@nitsri.net
Mobile:+91-7006836408

■ **Dr. G. R. Begh**(MTech. Project Advisor)

Associate Professor,
Department of Electronics & Communication Engineering,
National Institute of Technology, Srinagar
Email:grbegh@nitsri.net
Mobile:+91-9906577743

■ **Dr. K. Muzaffar**(BTech Project Advisor)

Associate Professor,
Department of Electronics & Communication Engineering,
Islamic University of Science & Technology, Awantipora
Email: khalid.muzaffar@islamicuniversity.edu.in
Mobile: +91-9873099896

■ **Dr. Sajad Ahmad Loan** (Fellow IETE, Shastri Fellow, IEEE,MIAENG UK)

Professor,
Department of Electronics & Communication Engineering,
Jamia Millia Islamia, New Dehli
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