

PATEL JAY

Contact

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Languages

English, Hindi,
Gujarati(M.T)

Programming Languages

♥ Python, C, C++,
Embedded C,
HTML, WordPress, XML,
CSS

Engineering Tools

♥ Matlab, CST, AutoCAD,
HFSS, ROS/ROS2

DOCTORAL

♥ Underwater Acoustic
communication, Digital
Signal Processing,
RF/Microwave system,
CMOS-MEMS, Analog
MOS Design

GRADUATE

♥ RF & Microwave,
Antenna Engineering,
Digital Logic Design,
Micro-controller,
Micro-processor,
Statistical signal
Analysis, Advance Digital
Communication.

Website

patel999jay.github.io

Summary

Dynamic and innovative Electrical Engineer with a PhD from Dalhousie University, bringing extensive expertise in electrical and computer engineering with a focus on communication systems and advanced technological applications. Proficient in leading research and development projects, particularly in underwater communication networks and IoT systems security, complemented by robust experience in sophisticated simulation and modeling. Demonstrates strong leadership in managing multidisciplinary teams and delivering educational programs that integrate academic rigor with practical industry applications. Experienced in enhancing IT and network infrastructures to improve system performance and reliability. Adept at deploying cutting-edge engineering solutions, I offer a unique blend of technical depth and innovative problem-solving capabilities. Committed to advancing sustainable energy solutions and technological innovations that emphasize efficiency and environmental impact. With a passion for continuous learning and a proven track record in generating impactful research outcomes, I am eager to contribute to the success of a forward-thinking organization.

Experience

2018-current Dalhousie University

Faculty of Engineering & Intelligent Systems Lab

Teaching Assistant & Lead Research Engineer

- Led a team at the Intelligent Systems Lab in pioneering research on underwater communication networks, significantly enhancing the security and efficiency of IoT systems for marine robotics as demonstrated in doctoral thesis.
- Advanced the field of underwater acoustic engineering through high-tech simulation and modeling, applying novel methodologies in ECED 6575 and Signal Processing ECED 4502, improving student engagement and learning outcomes.
- Directed comprehensive lab sessions and supported curriculum development in Systems-I (MECH 3900), Signal Analysis (ECED 3500), and Communication Systems (ECED 3511), significantly contributing to the academic success of over 110+ students annually.
- Spearheaded the development and implementation of innovative data backup systems and streamlined IT infrastructure, reducing data loss incidents by 50% and cutting IT operational costs by 20%.
- Utilized expertise in digital signal processing and network protocols to conduct groundbreaking research on secure, full-duplex communication systems for multi-domain operations, enhancing data reliability and system robustness.

2018-current Dalhousie University

MedIT, Faculty of Medicine

Helpdesk Support Specialist - Part time

- Managed IT systems across multiple platforms, optimizing computational resources for Faculty of Medicine, enhancing system efficiency and user support.
- Provided technical support and managed service requests through diverse communication channels; played a key role in the laptop lease program and systems migration.
- Collaborated with internal teams to streamline service delivery and address technical challenges, ensuring robust support for research and academic activities.

2016-2017	Parul Institute of Technology <i>Assistant Professor in Dept. of Electronics and Communication Engineering</i>	Faculty of Engineering
	<ul style="list-style-type: none"> • Spearheaded the design and development of an RF and Antenna Laboratory at Parul University, while serving as an Assistant Professor in Electronics and Communication Engineering. • Held multiple coordination roles including IEEE Student Branch Coordinator, Departmental Exam Coordinator, and Practical Exam Coordinator for both Parul Institute and Gujarat Technological University. • Engaged in teaching, examining, and mentoring undergraduate and master's level students; played a key role in setting and grading assignments and tests, assessing student work, and actively contributed to curriculum development and departmental teaching strategies. 	
2015-2016	Bombardier Transportation India Pvt. Ltd <i>Methods Engineer</i>	Savli, Vadodara, India
	<ul style="list-style-type: none"> • Served as a Trainee Engineer in the Methods Department, focusing on lean manufacturing processes, robot operations, and process optimization for major projects including the Queensland New Generation Rolling Stock (QNGR) and Delhi Metro Rolling Stock (DMRC). • Led change management for CARBODY in BT-Savli, enhanced manufacturing methods and procedures, and programmed a 9-axis Siemens robot for automated roof manufacturing, leveraging expertise in Kaizen, SAP, and mechanical fixture development. 	

Education

2018-2024	PhD in Electrical & Computer Engineering	Dalhousie University, Halifax, NS, Canada.
2014-2016	M.Engg in Electronics & Comm. Engineering	Gujarat Technological University, India.
2014-2010	B.Engg in Electronics & Comm. Engineering	Gujarat Technological University, India.

License

2018	Engineer-in-Training [Registration ID:29222]	Engineers Nova Scotia
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Patent

Mar-20	Low cost design of UHF Antenna for roof mounted vehicular & Heavy-duty applications Government of India	
	<ul style="list-style-type: none"> • Official Journal of the Patent Office (Date:March 20, 2020) 	

References

Currently holding Reliability Status Clearance and valid Driver's License.

Projects

2023-current	TC-QVI Transport Canada & Dalhousie University
2020-2024	DCAF & CATL DRDC & Dalhousie University

2021-2022	Remote Emergency Trigger System for Uncrewed Ships in Distress MHOPEG & Dalhousie University
2018-2022	CDMA-based multi-domain communication network for marine robots Thales R&D & Dalhousie University
2018-2019	DND IDEaS research project Cellula Robotics and Dalhousie University
2015-2016	QNGR (Queensland New Generation Rolling Stock) Bombardier Transportation India
2015-2016	DMRC (Delhi Metro Rail Corporation Ltd) Bombardier Transportation India
2015-2016	Antenna development for Metro Trains Bombardier Transportation and GTU
2013-2014	Automatic inspection system using Image Processing VTalent Global Pvt Ltd and GTU

Publications

Oct-22	Collaboration of Heterogeneous Marine Robots Toward Multidomain Sensing and Situational Awareness on Partially Submerged Targets	IEEE Journal of Oceanic Engineering, Oct 2022.
Sep-21	Kalman Filter-based doppler tracking and channel estimation for AUV implementation	Oceans 2021, San Diego – Porto, USA.
Jun-21	Multi-UUV Object Detection Localization and Tracking with Secure Full-Duplex Communication Networks	Proceedings of Meetings on Acoustics, UACE 2021.
Dec-20	CDMA-Based Multi-Domain Communications Network for Marine Robots	Acoustics Virtually Everywhere 179 th Meeting of the Acoustical Society of America (ASA 2020).
Sep-20	Underwater channel characterization for shallow water multi-domain communications	International Conference on Underwater Acoustics-ICUA'20.
Aug-20	Live RF Image Transmission Using OFDM with RPi and PlutoSDR	IEEE Canadian Conference on Electrical and Computer Engineering-CCECE'20.
Oct-19	CDMA-based multi-domain communication network for marine robots	14th ACM International Conference on Underwater Networks Systems-WUWNET'19.
Jun-19	Collaboration of multi-domain marine robots towards above and below-water characterization of floating targets	IEEE International Symposium on Robotic and Sensors Environments ROSE-19. • Best Student Paper Award at ROSE-2019.
Jul-16	Book on Roof Mounted UHF Antenna for Auto motives	LAP LAMBERT Academic Publishing
Apr-16	Development of Low Profile antenna for Point-to-Train Communication	7th National Level Conference on Emerging Vistas of Technology (NCEVT-2016),Parul University
Mar-16	Design and Simulation of Roof mounted low profile UHF antenna for Auto motives	IEEE International Conference on Wireless Communications, Signal Processing and Networking
Jan-16	Review Paper on Design and Simulation of UHF antenna for Roof mounted vehicular and Heavy Duty Applications	Indian Journal of Technical Education

Achievements

2021-2022	Bruce & Dorothy Rosetti Engineering Research Scholarship Grant Recipient Engineering, Dalhousie University	Faculty of
	<ul style="list-style-type: none">• Received funding for Doctoral research.	
2018-2021	NSERG & Thales R&D Grant Recipient	Intelligent System Lab, Dalhousie University
	<ul style="list-style-type: none">• Received funding for Doctoral thesis.	
2020-2020	IEEE Student Innovation Challenge Canada 2020 Recipient	IEEE Canada 2020
	<ul style="list-style-type: none">• Received first spot on the National IEEE Student Technological Innovation Challenge (STIC 2020).	
2018-2019	Director of Engineering, Architecture and Planning	DAGS
	<ul style="list-style-type: none">• Elected as Director Engineering, Architecture and Planning of Dalhousie Association of Graduate Students and International student Life Committee Member-Dalhousie University for term 2018-2019.	
2018-2019	IEEE Student branch, PES & HKN chapter Ex-Chair	IEEE Dalhousie University Student Branch
	<ul style="list-style-type: none">• Received funding for the project under PES Member-Driven Initiative Program from IEEE.• IEEE HKN Member and Ex-Chair of IEEE Dalhousie University SB.• Active Volunteer in IEEE Atlantic Canada Section.	
2014-2017	IEEE Student branch and PES chapter Chair	IEEE PU Student Branch
	<ul style="list-style-type: none">• Member of Technical Advisory Committee in IEEE 2018 International Conference On Power,Energy,Control and Transmission Systems.• IEEE PU PES Student branch stood at 28 Highest Performing SB PES chapter all over the world and received token of appreciation from IEEE PES.• Received funding from IEEE for the project under PES Member-Driven Initiative Program.• Volunteered for 4 years in IEEE Gujarat PES Student Section.	