NITISH KUMAR

SCIENTIFIC OFFICER - BHABHA ATOMIC RESEARCH CENTRE

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PROFILE

I'm an electrical engineer with over 4+ years of experience working in the R&D institute under the **Government of India.** With hands on experience in **signal processing, machine learning, embedded systems** & **Computer Networking** am looking forward to take challenging tasks that would help grow my skills further and achieve company goals.

EMPLOYMENT BACKGROUND

Scientific officer - D
Bhabha Atomic Research Centre (B.A.R.C.) - August 2018 - Present

Triboelectric sensor based Perimeter Intrusion Detection System (PIDS):
- Developed and implemented event detection and classification algorithm on DSP-FPGA platform. Accuracy of 100 % events were detected and more than 90% events were classified correctly.

Fiber-Optics based Perimeter Intrusion Detection System (FO-PIDS):
- Developed phase demodulation algorithm to extract the amplitude of interferometer signal obtained from DMZI sensor.
- Experienced in development of High speed Data Acquisition system.
- Experienced in the development of event detection algorithm using Teager-Kaiser Energy Operator (TKEO), Discrete Wavelet Transform (DWT) & supervised machine learning techniques and development of algorithm for locating the intrusion within accuracy of ± 50m.

Multi-Sensor Perimeter Intrusion Detection System (MS-PIDS):
- Developed the Simulink model of High Voltage Energizer for High Voltage Pulses in Electric fence.
- Involved in development of Electric fence card, triboelectric based card and alarm assessment unit card.

Network Administrator/Engineer:
- Documenting network topologies, IP allocation, and network designs.
- Installed more than 150 IP-CCTV cameras at single site for perimeter surveillance.
- Designed, integrated and maintained consolidated network services.
- A good understanding of AlliedWare Plus Operating System, and VLAN configurations.
- Implemented VRRP and VC stacking to improve redundancy on single point Network Layer switch failure.
- Implemented MAC address filtering and VLANs to lower vulnerabilities.
- Improved Network performance through monitoring and app prioritization.

Algorithm Developer:
- Develop, document, test, and release production quality algorithm code.
- Collaborate with multi-function teams on design development and test of new product initiatives.
- Experience in analysis and estimation of time-series signals and Signal processing.
- Experienced programmer in C++ and Python.
- Well versed in Data structures and Algorithm and demonstrated ability to develop sophisticated algorithms under both computational and memory constraints.

Technical Skills	Soft Skills
- Non-Stationary Signal Processing - Supervised Machine Learning - MATLAB, NI LabView, Milestone Software - MS-Office - Embedded C - Embedded Firmware - Real Time Operating System (RTOS) - OSI, TCP/IP Layers - C++, Python - Data Structures & Algorithms, Object-Oriented Programming.	- Project Management - Lateral Thinking - Interpersonal Skills - Pace Learner

WHITE PAPER - INDIAN INSTITUTE OF TECHNOLOGY, PATNA, INDIA.
OCTOBER - 2020.
DOI: 10.1109/ICCCS49678.2020.9277245.

Recipient of **Best Paper Award** for Research Paper titled **"Event Detection and Classification Algorithm using Wavelet and Machine Learning Technique for Vibration fence PIDS"** in 5th IEEE International Conference on Computing, Communication and Security (ICCCS).

EDUCATIONAL BACKGROUND

Homi Bhabha National Institute, Mumbai, Maharashtra, India.
Master's in Technology (M.Tech) in Electrical Engineering with specialization in Nuclear Engineering
2017 - 2019

B.A.R.C. Training School Mumbai, Maharashtra, India.
One Year Orientation Course in Nuclear Engineering
2017 - 2018

Jabalpur Engineering College, Jabalpur, Madhya Pradesh, India.
Bachelor's in Engineering (B.E.) with Honors in Electrical Engineering
2012 - 2016

PROJECTS AND INTERNSHIP

- 2017 - 2019: Development of **Reliable Event Detection and Classification algorithm development** for **Vibration Fence based Perimeter Intrusion Detection System**
- 2017 - 2018: Simulation of **Solid State based Electron Gun Modulator** in **Electron Beam Centre** (EBC), Kharghar, Navi Mumbai.
- 2012 - 2016: Involved in development of **Optimum Hybrid Energy Management System** as a major project in Graduation.
- 2012 - 2016: Internship of 45 days in **Electrical Maintenance Department** (EMD) at **National Thermal Power Corporation (NTPC) Power Station**, Vindhayachal, Madhya Pradesh.

Please Note : Due to nature of my current job, I am reachable on my cell phone -
Monday - Friday before 8 am or after 8 p.m. IST and anytime over the weekend.
Kindly drop me an email to contact - **nitish.070593@gmail.com**
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