

# Swapnil Narhari Gaul

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## Education

**Master of Technology, RF and Microwave Engineering**

**June 2013**

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

- Project Work: Analysis of VLSI Interconnects & Electromagnetic structures using Partial Electrical Equivalent Circuit (PEEC) Technique, and benchmarking performance characteristics with standard EM solvers. Optimization using 'Particle Swarm' behavior.
- Relevant Course Work: Electromagnetics, RF Networks, RFICs and MMICs, Analytical and Computational Methods, EMI/EMC, Radar Analysis, Satellite Communication.

## Work Experience

**Founder and Director** | NUMEREGION, Delhi NCR

**Since April 2015 - Present**

NUMEREGION is a TBI-KIET based education technology start-up developing simulation tools for various aspects of engineering. According to our technical mentors from IIT Mumbai & IIT Kharagpur, our simulators will be India's first engineering software that will be used in virtual learning especially engineering and technology.

**Field Application Engineer** | NI LOGIC, Pune

**October 2013 - April 2015**

- Dealt with electromagnetic software tools namely 'EField', 'QuickField' and 'PAMCEM' which are intended for high frequency electromagnetic design and simulations.
- Conducted faculty development trainings, workshops on EM design and simulation in various institutions & PSU's.
- Solved design issue of various educational and industrial clients such as, Defense Laboratory Jodhpur [RCS], INA Kannur.

## Other information

**Paper published:**

*"RCS prediction for NASA Almond with S-bend cavity", Erik Abenius, Bhupesh Purohit, and Swapnil Gaul.*

**Simulation Packages Developed:**

- EM\_Solve: To solve a distributed lumped model equivalent circuit of EM structures and to analyze their performance characteristics.
- EM\_Opt: An optimization tool based on 'Particle Swarm' algorithm for finding optimum parameters of structure, subject to performance constraints.
- CirReduct: A tool for reducing a complex lumped element passive circuit to a simple circuit with same terminal response characteristics.
- HenryFarad: A tool for obtaining sectorized distributed impedances of regular shaped wire and other transmission line structures over a frequency band.
- CirSolve: A fast but efficient tool for passive circuit simulation in the high frequency RF domain, while including time delay and phase variation effects.