# Suryakant Gautam

Email Id: gautamsuryakant@gmail.com suryakant@manit.ac.in Contact No.: *+91 9780894250*

## EDUCATIONAL QUALIFICATIONS

- **2007 – 2011 | Bachelor of Technology**
  Gurukul Kangri Vishwavidyalaya, *Haridwar-India* (Deemed University)
  Electronics & Communication Engineering **(Obtained Percentage - 82.39%)**

- **2011 – 2013 | Master of Technology (Thesis Title – "Design of Optical Systems using Freeform Surfacing Technology")**
  *Academy of Scientific and Innovative Research*, (An Institute of National Importance)
  Advanced Instrumentation Engineering. **(CGPA - 8.96/10)**

- **2022 | Doctor of Philosophy (Thesis Title – "Sensor Fault Detection and Isolation using Bayesian Estimation & Kullback-Leibler Divergence")**
  *Bhabha Atomic Research Centre, Homi Bhabha National Institute, Mumbai-India*
  Electrical Engineering.

## PROFESSIONAL EXPERIENCE

**LTIMindtree (L&T Group Company)** Mumbai, MH (India)
***Senior Specialist – Data Sciences*** May 2020 – Feb 2024

- Lead the team for data analytics-based product development to assess **risk likelihood of time and cost** using **Montecarlo and Bayesian statistics** to achieve seamless handling of the project.
- Successfully delivered the project of design and development of **anomaly detection** engine for hierarchical data of product booking, sales and forecast pipeline using **Machine Learning** based techniques.
- **Delivered a project** to optimize budget allocation for different sale channels using **Bayesian Marketing Mix Model** (MMM).
- Designed Model-based solution for Electric Vehicle Battery System fault detection using **probabilistic filters such as Kalman filter, Particle filter**.
- Developed solution to estimate the remaining useful life (RUL) of Aircraft engine by using **deep convolution neural network.**
- Designed a bio-surveillance system by augmenting **anomaly detection** and **large language-based models (LLM)** on pharma sales data at different hierarchy such as region, district, territory & customers.
- To monitor **smart cities**, a solution was devised for sensors fault detection by combining **probabilistic filters & Kullback-Leibler divergence**.

**CSIR-Central Scientific Instruments Organization** Chandigarh (India)
***Quick Hire Scientist*** August 2011 – September 2014

- Successfully achieved **design & optimization** of freeform optical surfaces for proposed surface descriptor using for **Head-Up display system** of combat aircraft.
- Developed a product **for Multi-class classification using logistic regression and K-Nearest neighbor** on beverage datasets for tagging of geographical indication.

## CERTIFICATIONS/WORKSHOPS

**(2022) "AWS Partner: Accreditation (Technical)"**

**(2022) "AWS Partner: Cloud Economics Accreditation"**

**(2018) Attended "IEEE Tutorial cum workshop on AI & ML" at National Institute of Industrial Engineering, Mumbai:**

- AI & Machine learning hands-on training using **Python** programming.
- Applications of Deep learning for digital supply chain and predictive modeling.

**(2016) Attended "Workshop on Computational Statistics" at Indian Statistical Institute, Kolkata-WB: (5-days workshop)**

- Comparative assessment of statistical distance measures for classification and prediction using **R**
- Re-sampling techniques based probabilistic filters for non-linear stochastic systems.

**(2015) Attended "Workshop on Design and Analysis of Experiments" at Indian Statistical Institute, Kolkata-WB: (5-days workshop)**

- Classical design & analysis of experiments and multiple response optimization methods.

## JOURNAL PUBLICATIONS

- **Gautam, Suryakant**, et al. (2019). Sensors Incipient Fault Detection and Isolation Using Kalman Filter and Kullback–Leibler Divergence. *IEEE Transactions on Nuclear Science*, *66*(5), 782-794. 2019 doi:10.1109/TNS.2019.2907753.
- **Gautam, Suryakant**, et al. (2019). Sensors incipient fault detection and isolation of nuclear power plant using extended Kalman Filter and Kullback–Leibler divergence. *ISA transactions* 2019 doi: 10.1016/j.isatra.2019.02.011.
- **Gautam, Suryakant**, et al. (2015). Optical design of off-axis Cassegrain telescope using freeform surface at the secondary mirror. *Optical Engineering*, *54*(2), 025113. 2015 doi:10.1117/1.OE.54.2.025113.
- **Gautam, Suryakant**, et al. (2014). Comparative assessment of optical performance for the optical design of HD-DVD micro-objective lens with NA 0.65 using aspheric and freeform surfaces. *Optik-International Journal for Light and Electron Optics, 125(22), 6845-6849.* https://doi.org/10.1016/j.ijleo.2014.07.117

## INTERNATIONAL CONFERENCES

- **Gautam, Suryakant, et al.** "Performance Evaluation of Statistical Method for Incipient Fault Detection under Noisy Environment." IFAC-PapersOnLine 50.1 (2017): 15728-15733. *IFAC-World Congress, Toulouse-France.*
- **Gautam, Suryakant, et al.** "Real-time statistical detection and identification of sensor incipient fault using Kalman filter." 2018 *Indian Control Conference (ICC), IIT Kanpur, IEEE, 2018.*