

**Name:-Dr. Rupali A. Mahajan**

Associate Professor &amp; Head, CSE( Data Science) Department

Associate Dean – Research and Development

Vishwakarma Institute of Information Technology, Pune – 411048

**Phone:** 9175974452, 8698432976**E-mail:** [rupalimahajan@gmail.com](mailto:rupalimahajan@gmail.com), [rupali.mahajan@viit.ac.in](mailto:rupali.mahajan@viit.ac.in)

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**Social Media Links:****Google Scholar:** <https://scholar.google.com/citations?user=2C7fKOUAAAAJ&hl=en&authuser=1>**Scopus:** <https://www.scopus.com/authid/detail.uri?authorId=57208666180>**LinkedIn:** <https://www.linkedin.com/in/dr-rupali-mahajan-98101b75/>**Summary:**

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To work in a competitive environment, where I can contribute my best of knowledge, experience and skills to achieve organizational and personal excellence. To undertake interesting and challenging tasks in academics.

**Educational Profile**

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**Post-doctoral Researcher** at Singapore Institute of Technology, Singapore, on research problem statement”

Generative AI for Predictive Financial Modeling: Enhancing Accuracy in Market Forecasting research problem statement”

**Ph.D.** in Computer Science & Engineering at Shri J.J.T. University on research problem statement”

Developing Quality Comprehensive Model for Software Project Management Cycle Using Scrum Strategy” Ph.

D awarded on 13<sup>th</sup> Oct 2019.

**M.E.** (Computer Science & Engineering ) at S.G.B.A.U. Amravati in 2012 with First Class

**B.E.** (Information Technology) at Dr. B.A.M.U. Aurangabad in 2004 with Distinction

**HSC** from Aurangabad Divisional Board, Aurangabad in 2000 with 80.00%.

**SSC** from Amravati Divisional Board, Amravati in 1998 with 71%

**Experience:**

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- **Associate Professor & Head CSE(Data Science) Department** at Vishwakarma Institute of Information Technology, Pune Since August 2023.
  - **Associate Dean – Research and Development** at Vishwakarma Institute of Information Technology, Pune Since 2<sup>nd</sup> January, 2023.
  - **Associate Professor**, Department of Computer Engineering at Vishwakarma Institute of Information Technology, Pune Since 17<sup>th</sup> Nov 2022
  - **Associate Professor** , at MIT ADT’s School of Bioengineering Sciences and Research, Loni Pune since 3<sup>rd</sup> May 2021 to 16<sup>th</sup> Nov 2022.
  - **Assistant Professor and Head ,Information Technology Department** at JSPM’s Bhivarabai Sawant Institute of Technology & Research, Wagholi, Pune. Since 21<sup>st</sup> July 2011 to 30<sup>th</sup> April 2021)

**UGC Approval (UG) : CCO/App.Camp/152 ( w.e.f. 01/07/2011)**

**(PG) : BOD/Sci&Tech/10/253(w.e.f. 30/09/2019)**

- **Assistant Professor , Information Technology Department** at Hasmukh Goswami College of Engineering, Ahmedabad ,Gujarat since **1<sup>st</sup> Jun 2008 To 30<sup>th</sup> May 2011**
- **software programmer** at Netweb Software Pvt. Ltd. Baroda, Gujarat, since **Jun.2007 to Nov. 2007**
- **Telecom Engineer** at ORG Telecom Limited, Baroda, Gujarat, since **Oct.2005 to Nov. 2006**
- **Subject Chairman** for paper setting Information Technology Department, Savitribai Phule Pune University for subjects - Software engineering & Project Management, Data Analytics, Machine Learning and AI, Introduction to Programming
- **Paper setter and Examiner** Information Technology Department, Savitribai Phule Pune University for Subjects- Programming & Problem Solving, Information & Cyber Security, E & M Governance
- **SPPU Flying Squad Committee Member** for– Pune District North
- **External examiner** for practical and Project examinations for both IT and Computer Engineering
- **Member – Board of Studies (Bioengineering & Computer Science), MIT ADT University**
- **PhD Thesis Evaluator** at GTU( Gujarat Technical University), Rai University , Ahmedabad, GNSU Bihar
- **PhD external examiner** at GTU( Gujarat Technical University), Rai University Ahmedabad, GNSU Bihar
- **Session Chair & Reviewer for IEEE and springer conferences**
- **Session Chair for Post Graduate conference and International conferences**
- **Approved PhD Guide – JJT University**
- **Approved Post-Doc Co-supervisor:** Lincoln University, Malaysia, NKTU Taiwan. National Taipei University of Business , TAIWAN

### **Honors and Awards:**

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- Awarded with Best India Research award 2023 at World IP conclave , Delhi,2023
- Awarded for Best Future Focus in International Conference on Interdisciplinary Engineering and Sciences 2018
- Invited as a Judge for state level Paper Presentation and Poster competitions
- Appreciation Letter for 100% result for subject Fundamentals of Programming Language Foundation of computer networks Information Assurance and security ,Software Testing and Quality Assurance ,Information Retrieval ,Management Information System
- Invited as PhD Thesis Evaluator and PhD external examiner at GTU
- Reviewer , IEEE, Springer Conferences and Journals on the Globe
- Subject Matter Expert for Computer Science & Engineering , Yashoda Technical Institute, Symbiosis, Indore
- Guided 70+ students from U.G. and P.G
- Mentoring 2 PhD scholars

## Publications (Journal/Conference/Book Chapter):

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### Research Publications:

- 1) “Adaptive SDN- based network architecture for vehicle to vehicle communication using flexible optical networks for 5G, Optical and Quantum Electronics, springer ,2023, 55(12), 1041, DOI <https://doi.org/10.1007/s11082-023-05303-9>
- 2) “Efficient key revocation in WSN with lattice-based cryptography, Journal of Discrete Mathematical Sciences and CryptographyThis link is disabled., 2024, 27(2), pp. 339–348”
- 3) "Wireless Wheelchair Automation via Mobile Devices",Journal of IoT-based Distributed Sensor Networks, Vol. 1 No. 3 (2024)
- 4) "Real Time Anomaly Detection in Big Data using scalable machine learning technique",Advances in Nonlinear Variational Inequalities,ISSN: 1092-910X, vol 27, No.4 (2024)
- 5) "Deep Learning for Automated Code Generation\_ Challenges and Opportunities",Advances in Nonlinear Variational Inequalities,ISSN: 1092-910X, vol 27, No.4 (2024)
- 6) "Optimizing Blockchain Protocols with Algorithmic Game Theory",Advances in Nonlinear Variational Inequalities,ISSN: 1092-910X, vol 27, No.4 (2024)
- 7) "Enhancing Social Network Analysis using Graph Neural Networks" ,Advances in Nonlinear Variational Inequalities,ISSN: 1092-910X, vol 27, No.4 (2024)
- 8) "Predicting Software Vulnerabilities with Advanced Computational Models"Advances in Nonlinear Variational Inequalities,ISSN: 1092-910X, vol 27, No.4 (2024)
- 9) “Machine learning approaches for prediction of ovarian cancer driver genes from mutational and network analysis, Data Technologies and ApplicationsThis link is disabled., 2024, 58(1), pp. 62–80”
- 10) “A secure authentication protocol for healthcare service in IoT with Q-net based secret key generation,Web IntelligenceThis link is disabled., 2023, 21(4), pp. 407–433
- 11) “Enhancing Heart Disease Risk Prediction Accuracy through Ensemble Classification Techniques”, Vol. 11 No. 10s (2023), International Journal of Intelligent Systems and Applications in Engineering
- 12) “Keyless Security The Smart Solution for Home with a Smart Door Lock”, *International Journal on Recent and Innovation Trends in Computing and Communication*, 2023, 11, pp. 170–174, DOI: <https://doi.org/10.17762/ijritcc.v11i8s.7187>
13. “Enhancing Digital Healthcare with IoMT and Big Data: A Computational Intelligence Approach”, Springer, ICDAI 2023: Proceedings of International Conference on Data Analytics and Insights, ICDAI 2023 pp 209–219
- 13) “Machine learning approaches for prediction of ovarian cancer driver genes from mutational and network analysis”, ISSN: 2514-9288, Emerald Publishing Limited
- 14) “A secure authentication protocol for healthcare service in IoT with Q-net based secret key generation” International Journalm of Web Intelligence, , pp. 1-27, 2023 , 29 May 2023, [DOI: 10.3233/WEB-220104](https://doi.org/10.3233/WEB-220104)
- 15) “Machine Learning Techniques for Quality Management in Teaching Learning Process in Higher Education by Predicting the Student's Academic Performance”, International Journal of Next-Generation Computing (IJNGC) Volume 13, Special Issue 3, October 2022, <https://doi.org/10.47164/ijngc.v13i3.837>, Impact Factor 2.4
- 16) “Artificial Intelligence with Attention Based BiLSTM for Energy Storage System in Hybrid Renewable Energy Sources”, Elsevier, Sustainable Energy Technologies and Assessments, Volume 52, Part D, August 2022 , <https://doi.org/10.1016/j.seta.2022.102334> , Impact Factor 7.63
- 17) “Hybrid Sea Lion Crow Search Algorithm-based stacked auto-encoder for drug sensitivity prediction from cultured cancer cell lines”, International Journal of Swarm Intelligence Research (IJSIR) , IGI Global, volume 13, issue 1 , [DOI: 10.4018/IJSIR.304723](https://doi.org/10.4018/IJSIR.304723) , Impact Factor 1.8
- 18) Development of scrum Tree- KNN Algorithm for Distributed Agile Development”, IEEE [DOI: 10.1109/ICSE47139.2022.9934444](https://doi.org/10.1109/ICSE47139.2022.9934444)

- [10.1109/ESCI48226.2020.9167621](#), INSPEC Accession Number: 19896466
- 19) "Development and Analysis of Quality Comprehensive Model with Scrum Tree Algorithm for Automatic User Story Processing", Journal of Theoretical and Applied Information Technology EISSN 1817- 3195 / ISSN 1992- 8645, Vol.97. Issue 6, March 2019
  - 20) "Systematic Review of Software Project Management Using Scrum Strategy for Agile Software Development 2018-2019" International Journal of Research and Analytical Reviews (IJRAR) [EISSN-2348-1269 /ISSN-2349-5138](#), January 2019
  - 21) Enhancing IoT Network Security through AI-Driven Intrusion Detection with Hybrid Autoencoder-GAN Fusion,ACM International Conference Proceeding Series,2023
  - 22) "Development and Integration of Scrum Tree Algorithm with K-Means Data Clustering" International Journal of Engineering and Advanced Technology (IJEAT) , ISSN: 2249-8958, Vol 8 Issue 6, August 2019, [DOI: 10.35940/ijeat.F9026.088619](#) , Page No. 4248-4251
  - 23) "A Survey on Women's Security System Using GPS and GSM", International Journal of Innovative Research in Computer and Communication Engineering (IJRCCE), Volume 5, Issue 2, February 2017, ISSN (Online): 2320 – 9801, [DOI: 10.15680/IJRCCE.2017. 0502060](#)
  - 24) "A Novel Adaptive Approach for Anomaly Detection Using System Call Patterns." Elsevier, ISBN: ISBN:[9789351072928](#), Volume 3, page no. 850-859, December 2014
  - 25) "ACCELERATING CLOUD-NATIVE APPLICATIONS: AUTOMATED KUBERNETES CLUSTER DEPLOYMENT", Journal of Data Acquisition and Processing, Vol. 38 (3) 2023, [DOI: 10.5281/zenodo.7923139](#)
  - 26) "Implementing Cutting-Edge Techniques and Tools for Sentiment Analysis: A Practical Assessment", Data Acquisition and Processing,Vol. 38 (3), 2023,DOI: 10.5281/zenodo.9854890 " VALUABLE HEALTH INSIGHTS USING EFFECTIVE PREDICTING MODELS FOR DIABETIC PATIENTS",Computer Integrated Manufacturing system, Vol. 29 No. 5 ,[DOI: 10.24297/j.cims.2023.5.24](#)
  - 27) "MediManage: Streamlining Pharmacy Medicine Supply", Computer Integrated Manufacturing Systems, Vol.29 No. 5 ,[DOI: 10.24297/j.cims.2023.5.23](#)
  - 28) "A Secure Authentication Protocol for Healthcare Service in IoT With Q-Net Based Secret Key Generation", Web Intelligence, volume 22,[DOI: 10.3233/WEB-220104](#)
  - 29) " Need of scrum Framework Adoption for Software engineering Projects" REX Journal ISSN [2321-1067, 2019](#)" A Future Online Analyzer for Hidden Project Management Risks", IJARCSSE, 2017, ISSN: 2277128X (Volume -7, Issue-7)
  - 30) Image Refining and Tracking using Content –Based Image Retrieval" International Journal of Research in Information Technology (IJRIT), Volume 3 Issue 3 , March 2015 ,ISSN: 2001- 5569
  - 31) "Why to Test Software Only? Test and Track Client Requirements too - A Future Online Analyzer for Hidden Project Management Risks "Volume 5, Issue 3, March 2015, ISSN: 2277 128X
  - 32) "Cloud Based Integration of CRM, BPM & DM for SME's", March 2015 volume 3 Issue 3, ISSN: 2001-5569
  - 33) "An Efficient Web search Query Engine Implementation using Link Rank-Object Algorithm development", International Journal of Research in Information Technology (IJRIT), Volume 3, Issue 3, March 2015, ISSN: 2001-5569
  - 34) "Image Refining and Tracking "Multidisciplinary Journal of Research in Engineering and Technology (MJRET), Volume 2, Issue 3, March 2015, ISSN: 2348-6953
  - 35) "Fast and Robust Algorithm of Tracking Multiple Moving Objects for Intelligent Video Surveillance Systems Using OCR Algorithm", Volume 3, Issue 4, April 2015, IJRIT, ISSN 2001- 5569
  - 36) "Efficient use of System Metrics for IDS Design", Volume 4, Issue 10, September 2014, ISSN: 2277 128X
  - 37) "A Unified Approach To Direct and Indirect Discrimination Prevention using Data Transformation" Volume 3, Issue 7, July 2014, ISSN 2319 – 4847
  - 38) "Enforcing and Preserving Privacy of Information Brokering in Semantic Web", International Journal of Research in Information Technology (IJRIT), April 2014, Volume 2 Issue 4, ISSN: 2001-5569
  - 39) "Literature Review on Mining High Utility Item set from Transactional Database" , International Journal of Application or Innovation in Engineering & Management (IJAIEM), Volume 3 Issue 7, July 2014 ISSN 2319 – 4847
  - 40) "Anomaly Detection: Methods, Approaches and Techniques", (IJEETR), Vol. 3 Issue 10, October – 2014, ISSN: 2322-0163
  - 41) "Source Location Privacy Preservation using Improved Statistical Framework in Wireless Sensor

- Networks,” Elsevier, ISBN: 9789351072928, Volume 3, page no. 278-289, December 2014
- 42) “A Novel Adaptive Approach for Anomaly Detection Using System Call Patterns.” Elsevier, ISBN: ISBN: 9789351072928, Volume 3, page no. 850-859, December 2014
  - 43) “Methodology for Different Source Location Privacy Preservation Using Improved Statistical Framework in Wireless Sensor Networks”, IJCET, Volume 5, Issue 5, May (2014) ISSN 097635) – 6375(Online)
  - 44) “Review of Methods for Frequent Item set Mining from High Transactional Datasets”, International Journal of Engineering & Extended Technologies Research (IJEETR), Vol. 2 Issue 11, and November – 2013, ISSN: 2322-0163
  - 45) ”Survey on Mining High Utility Item set from Transactional Database”, International Journal of Innovative Research and Development, Vol 2 Issue 13 , December, 2013 ISSN 2278 – 0211 (Online)
  - 46) ”Overview on Methods for Mining High Utility Item set from Transactional Database”, International Journal of Scientific Engineering and Research (IJSER), ISSN (Online): 2347- 3878, Volume 1 Issue 4, December 2013
  - 47) ”Impact of Privacy Preservation Technique used in Data Publishing & Mining “ International Journal of Advanced Research in Computer Science and Software Engineering, Volume 3, Issue 11, November 2013 ISSN: 2277
  - 48) ”Review Paper on Discovering Knowledge in complex data through combined data mining”, IRSMTES 2011, ISSN: 2249-7456, Pune
  - 49) “Data mining recent trends and future”, IRSMTES 2011, ISSN: 2249-7455
  - 50) ” Discovering Knowledge through combined data mining”, IJAMES, Vol I, Issue 2(I), Nov.2011
  - 51) “Combined data mining for discovering knowledge and applications”, IJARCS, ISSN No. 0976- 5697, Volume 3, May –June 2012.
  - 52) International Conference on Emerging Smart Computing and Informatics (ESCI), 12-14 March 2020, AISSMS, Pune
  - 53) International Conference on Research Aspects in Renewable Energy, Green Technology, Engineering & environmental science & Its Applications for Development of Rural India at JJT University on 17th Nov 2018
  - 54) Got Certificate of Achievement in International Conference on Interdisciplinary Engineering & Sciences- 2018 at Pune on 23-24 March 2018.
  - 55) National conference on Emerging Trend through Innovation and Creativity Management for Value Education at JJT University on 19th August 2018.
  - 56) National conference on Human rights of Migrant Workers in India Context at JJT University on 21st July 2018.
  - 57) ”Methods used in combined data mining”, International conference on Information Technology Management, Pune on Oct 11th & 12th, 2011
  - 58) ”Wireless Sensor Network” National conference on Innovations and trends in computer & communication engineering, ITCCE-2011, at MET’s Inst of Engg, Feb 25th 2011
  - 59) ”Mobile Application development with Android”, National conference on Innovations and trends in computer & communication engineering, ITCCE-2011, at MET’s Inst of Engg, Feb 25th 2011
  - 60) ”A statistical approach to mining customers' conversational data from social media “IEEE paper presentation in Accolade 2013 at M.I.T. pune on 23rd Feb, 2013.

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## Patent:

1. IOT Based Automatic Biological Vermi Compost Maker – German Patent granted
2. Artificial Intelligence Based Personal Adaptive Assistance Exoskeleton, UK Design Patent Granted- Design number: 6296628, A.Y.2023
3. A Novel Mental Health Survey Device, UK Design Patent Granted- Design number: 6296629, A.Y.2023
4. Positron Emission Tomography Functional Magnetic Resonance Imaging, UK Design Patent Granted- Design number: 6296627, A.Y.2023
5. AN INAPPROPRIATE IMAGE IDENTIFIER AND REPORTER SYSTEM, REPUBLIC OF SOUTH AFRICA patent filed- application No.2024/03673
6. AN IOT BASED CERVICAL CANCER SCREENING DEVICE, Indian Utility patent

- published-Application No.202421003357 A
7. ARTIFICIAL INTELLIGENCE BASED AUTOMATED ACTIVATION MECHANISM INTEGRATED K-TYPE FIRE EXTINGUISHER MOBILE ROBOT, Indian Utility patent published-Application No.202321045683 A
  8. A CLOUD BASED HEALTH RECORD MONITORING SYSTEM, Indian Utility patent published-Application No.202421010794 A
  9. REAL-TIME DRONE-BASED CONCRETE DAMAGE DETECTION SYSTEM AND METHOD FOR TALL STRUCTURES, Indian Utility patent published-Application No.202421002990 A
  10. ROBOTIC GARBAGE DISPOSAL SYSTEM AND METHOD THEREOF, Indian Utility patent published-Application No.202421010465 A
  11. AEROPONIC DEVICE FOR PLANT CULTIVATION, Indian Utility patent published-Application No.202421010462 A
  12. SMART BLOOD PRESSURE AND PULSE RATE MONITORING KIOSK, Indian Utility patent published-Application No.202421047084 A
  13. METHOD AND SYSTEM FOR ADAPTIVE FEDERATED LEARNING IN DECENTRALIZED AI-ENABLED IOT NETWORKS, Indian Utility patent published-Application No.202421007341
  14. SYSTEM AND METHOD FOR SECURE AND PRECISE DELIVERY OF SENSED DATA IN UNDERWATER ENVIRONMENTS USING THE SPADE ALGORITHM, Indian Utility patent published-Application No.202421038277 A
  15. Four - Armed Robotic Surgical System, UK Design Patent Granted- Design number: 6296630, A.Y.2023
  16. Artificial Intelligence Based Wave Dental Unit - Indian Design Patent Granted – Application Number - 381674-001
  17. Neonatal Heating Belt for Hypothermia Indian Design Patent Granted– Application Number- 381675-001
  18. Deep Learning Based Agriculture Robot Indian Design Patent Granted– Application Number - 384504-001
  19. Novel Cloud Based Life-Saving Wearable Device for Hospital Alert Management System, UK Design Patent –Granted - Design Number - 6291246
  20. IOT Based Nutrient Analyzer using ATMEGA-328, Indian Design Patent – Application Number -382035-001
  21. Smart Wearable Harness- Indian Design Patent – Application Number -384325-001
  22. A Smart Wireless EarBud device with Ad-hoc connectivity for safe communication Indian Utility Patent – Application Number -202321008431
  23. Novel IoT Based Digital Hydroponic Nutrient Prediction Device, Indian Utility Patent –
  24. Real Time Project Management Process Based On Scrum Strategy Scrum Tree and System Thereof. Indian Utility Patent filed
  25. Method and System for Managing Social Distancing

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**Books / Book Chapter Published:**

1. Cyber security beyond the screen tackling online harassment and cyberbully, IGI Global, 2023
2. Improving workplace safety with AI powered predictive analytics, IGI Global, 2023

3. Staying safe in the digital Age, IGI Global, 2023
4. Synergies of digital twin technology and AI: Future-focused innovations in business, IGI Global, 2023
5. Advancements in Data-Centric AI Foundations, Ethics, and Emerging Technology, Data-Centric Artificial Intelligence for Multidisciplinary Applications, Springer, 2023
6. Emails Classification and Anomaly Detection using Natural Language Processing, Data-Centric Artificial Intelligence for Multidisciplinary Applications, Springer, 2023
7. Programming for Everybody in Python, Aasan Publication, 2023
8. Neural Network with Deep Learning, Aasan Publication, 2023
9. Big Data Analytics, Nirali Publication, 2023
10. Echoes of Tomorrow: Navigating Business Realities with AI and Digital Twins, IGI Global, 2023
11. AI-Driven Predictive Safety Analytics: Enhancing Workplace Security, IGI Global, 2023
12. Advancements in Data-Centric AI Foundations, Ethics, and Emerging Technology, IGI Global, 2023
13. Emails Classification and Anomaly Detection using Natural Language Processing, Springer, 2023
14. Software Engineering by Technical Publication for Second Year Engineering 2023
15. Design and Development of Internet of things and Medical Imaging Artificial Intelligence System – Scopus 2023
16. Affective Computing for social Good, Springer 2023
17. Affective Computing Challenges, Scopus 2023
18. Software Engineering by Technical Publication for Second Year Engineering 2020

#### **Research Projects/ Consultancy**

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1. Majhi Vasundhara Consultancy Project by Government of Maharashtra 2024, Received fund of **Rs. 13,50,000**
2. Majhi Vasundhara Consultancy Project by Government of Maharashtra 2023, Received fund of **Rs. 18,50,000**
3. Majhi Vasundhara Consultancy Project by Government of Maharashtra 2022, Received fund of **Rs. 12,00,000**

## Subject of Interests:

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Theory of Computations, System Software, Data Structures & Algorithms, Principles of Programming Languages, Computer Networks, Network Security, Design and analysis of algorithm. Excellent feedback (More than 90%) in the student's appraisal for the subject taught.)

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## Skill Sets:

<b>Key Domains</b>	Data Visualization, Data Analytics, Artificial Intelligence, Machine Learning, Data Preprocessing, Data validation, Model development
<b>Tools</b>	Jupyter Notebook, PowerBI, Pycharm, GoogleColab, AWS,Jira, Github
<b>Programming Languages</b>	C,C++,Python
<b>Machine Learning</b>	Linear Regression, Logistic Regression, Auto ML, Bio Python ,Decision Tree, Random Forest, SVM, PCA,K Means Clustering
<b>Packages</b>	Numpy , Pandas,Scikit Learn, Tensorflow , RDkit, OpenCV, NLTK , Spacy, Matplotlib, Plotly,Seaborn, Matplotlib
<b>Certifications:</b>	SAP-Getting Started In Data Science(Ed- 2021), Coursera -Data- Driven Decisions with PowerBI, LinkedIn Learning Machine Learning and AI Foundations, LinkedIn Learning Text Analytics and Prediction with Python Essential Training

## Professional Membership

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- Life Time Member of ISTE (LM- 90137)
- Life Time Member of IIENG (154612)

## Personal Detail:

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Blood Group: B +ve  
Date of Birth: 25<sup>th</sup> April 1982  
Marital Status: Married

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I hereby declare that the information furnished above is true to the best of my knowledge.

Dr. Rupali A. Mahajan