

Industrial Visit Report

Submitted in Partial Fulfilment of requirements for the Award of
Degree of Bachelor of Technology in Computer Science and Engineering

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List of Industries Visited

1. Indian Meteorological Department (IMD) Met Centre
 - Location: Ahmedabad, Gujarat
 - Date of Visit: 1st October, 2024
2. eInfochips
 - Location: Ahmedabad, Gujarat
 - Date of Visit: 21st March, 2025
3. BISAG-N
 - Location: Gandhinagar, Gujarat
 - Date of Visit: 2nd April, 2025

Introduction

The purpose of this report is to provide a detailed documentation of the industrial visits undertaken during our academic program. These visits serve as a valuable opportunity to bridge the gap between theoretical knowledge acquired in the classroom and its practical applications in real-world industrial environments. This documentation captures the key learnings, observations, and overall experiences from the visits to three organizations: **IMD Ahmedabad (Met Centre)**, **eInfochips Ahmedabad**, and **BISAG-N**.

Industrial visits hold great significance for us as students as they provide direct interaction with industry professionals and exposure to cutting-edge technologies and real-world workflows. Such experiences enable us to understand industry practices, develop awareness of emerging trends, and gain clarity about organizational operations, management, and culture. They also allow students to explore potential career paths and enhance their readiness for professional roles.

Objectives of the Industrial Visits:

1. To observe and understand the functioning of organizations in the various domains and understand their working with the field of computer science.
2. To gain insights into current industry practices, technologies, and infrastructure.
3. To interact with professionals and understand the skills, competencies, and knowledge expected in these sectors.
4. To bridge the gap between academic learning and industry requirements, enhancing overall employability and professional readiness.
5. To document and reflect upon the experiences for future reference and knowledge sharing and gain actionable advice from industry professionals themselves.

Description of the Industries

IMD Ahmedabad (Meteorological Centre, Ahmedabad)

- **Name & Location:** Meteorological Centre, Ahmedabad, India Meteorological Department (IMD), located in Ahmedabad, Gujarat.
- **Brief History:** Established as a Meteorological Observatory in 1893, it evolved into a full-fledged Meteorological Centre in October 1974 to enhance weather services in Gujarat and the union territories of Daman, Diu, and Dadra & Nagar Haveli.
- **Products and Services:** The centre provides accurate weather forecasts, climatological data, aviation meteorology services, cyclone and severe weather warnings, and agro-meteorological advisory services. It also supports disaster management efforts and supplies weather data for scientific and commercial use.
- **Role in the Sector:** IMD plays a crucial role in public safety, disaster mitigation, agriculture planning, water resource management, and various industries dependent on weather data. It also provides technical support for research and development in meteorology and climate science.
- **Unique Features / Technologies Observed:**
 - Instruments used for weather data collection such as automatic weather stations, radar systems, and specialized sensors.
 - Weather balloons used for collecting upper-atmosphere data.
 - Applications of computer science and machine learning for weather prediction and climate modeling.

eInfochips (An Arrow Company)

- **Name & Location:** eInfochips, Ahmedabad, Gujarat, India (Headquarters also in San Jose, California, USA).
- **Brief History:** Founded in the mid-1990s, eInfochips has grown into a global leader in product engineering and semiconductor design services. It is a subsidiary of Arrow Electronics, one of the largest electronic components distributors in the world.
- **Products and Services:** eInfochips offers product engineering services, ASIC/FPGA design, embedded systems, IoT solutions, AI/ML-based applications, and cloud services. They support clients in industries such as aerospace, healthcare, automotive, consumer electronics, and industrial automation.
- **Role in the Sector:** The company is a key player in accelerating innovation and enabling businesses to bring high-tech products to market faster. It is widely recognized for delivering cutting-edge embedded and software solutions to Fortune 500 companies.
- **Unique Features / Technologies Observed:**
 - Insights into how a corporate IT and product engineering environment operates.
 - Their approach to IoT and AI-based product engineering and cloud computing solutions.
 - Interaction with industry experts, learning about organizational values and culture.

BISAG-N (Bhaskaracharya National Institute for Space Applications & Geo-Informatics)

- **Name & Location:** BISAG-N, Gandhinagar, Gujarat, India.
- **Brief History:** Originally established as the Remote Sensing and Communication Centre (RESECO) in 1997, it was renamed BISAG in 2003 in honor of mathematician Bhaskaracharya. It later became BISAG-N, functioning as an autonomous scientific society under the Ministry of Electronics and Information Technology (MeitY), Government of India.
- **Products and Services:** BISAG-N focuses on satellite communication, geo-informatics, and remote sensing technologies. It provides solutions in the areas of natural resource management, agriculture, watershed development, infrastructure planning, and disaster management. It also operates the SATCOM network, delivering educational and training content via dedicated television channels.
- **Role in the Sector:** BISAG-N supports governance and planning by offering GIS and remote sensing-based decision support systems. It enables effective planning and monitoring across diverse sectors, including agriculture, environment, education, and urban development.
- **Unique Features / Technologies Observed:**
 - Satellite communication systems for broadcasting educational content and training programs.
 - GIS-based applications and advanced remote sensing technologies.
 - Insights into how BISAG-N supports diverse sectors using space technology and data-driven solutions.

Observations and Learning

IMD Ahmedabad (Meteorological Centre, Ahmedabad)

Observations:

During the visit, we observed various instruments used for weather data collection, including automatic weather stations, radar systems, and specialized sensors. We were also introduced to weather balloons that are periodically released to collect atmospheric data. The team demonstrated how these collected data points are processed and analyzed using advanced computational methods, including applications of machine learning for weather analysis and prediction.

Key Insights & Technologies:

- Importance of accurate data collection and processing in weather forecasting.
- Use of weather balloons for gathering upper-atmosphere information.
- Application of computer science, especially machine learning, in analyzing weather patterns and improving forecast accuracy.

Learning & Reflection:

This visit helped us understand how data from multiple sources is integrated for weather forecasting and decision-making. It provided clarity on how computer science concepts, particularly data analytics and machine learning, are directly applied in meteorology, bridging the gap between classroom learning and real-world implementation.

eInfochips (An Arrow Company)

Observations:

We gained exposure to the corporate work culture and learned about the company's services, including product engineering, embedded systems, IoT solutions, and AI/ML applications. Interaction with industry experts gave us insights into the skills, values, and competencies required in the IT product engineering sector.

Key Insights & Technologies:

- Professional corporate environment and teamwork practices.
- Range of services offered in product engineering, IoT, and AI-based solutions.
- Importance of innovation and continuous learning in a fast-paced technology sector.

Learning & Reflection:

This visit gave us an understanding of how a professional IT company operates and delivers services to global clients. It highlighted the relevance of soft skills, technical knowledge, and adaptability for working in the corporate technology sector. It also provided perspective on career paths in embedded systems, IoT, and software engineering.

BISAG-N (Bhaskaracharya National Institute for Space Applications & Geo-Informatics)

Observations:

We observed how BISAG-N applies space technology and geo-informatics to support diverse sectors, ranging from satellite communications to broadcasting educational content. The visit included an overview of their vision, mission, and real-world applications, such as GIS-based decision support systems and SATCOM technology for delivering educational content.

Key Insights & Technologies:

- Use of satellite data for planning and monitoring in various sectors.
- Importance of GIS-based applications in governance and decision-making.
- Broadcasting technologies for education and public information dissemination.

Learning & Reflection:

This visit broadened our understanding of how space technology and IT converge to solve real-world problems in areas like agriculture, disaster management, and education. It demonstrated the interdisciplinary nature of technology and how computer science is integral to geospatial and broadcasting applications.

Conclusions

The industrial visits to IMD Ahmedabad, eInfochips, and BISAG-N provided valuable exposure to diverse sectors where technology plays a crucial role. Each visit offered unique learning experiences that bridged the gap between academic concepts and practical applications.

From **IMD Ahmedabad**, we learned how accurate weather forecasting relies on advanced instrumentation, real-time data collection, and computational techniques, including machine learning models. This demonstrated the real-world use of data science and analytics, subjects that are central to our coursework.

At **eInfochips**, we gained insight into the functioning of a corporate IT and product engineering environment. Observing their services in IoT, embedded systems, and AI-based solutions highlighted how innovation and collaboration drive the technology sector and gave us clarity about industry expectations from future professionals.

The visit to **BISAG-N** showed how space technology, GIS, and satellite communication are applied across multiple sectors, including governance, agriculture, education, and disaster management. This emphasized the interdisciplinary applications of computer science in solving real-world problems.

Overall, these visits enriched our academic knowledge by providing practical context to the theoretical concepts we study, improved our understanding of industry processes and technologies, and gave us valuable insights into professional skills and competencies required for a successful career.

Acknowledgment

We express our sincere gratitude to our faculty and coordinators for organizing the industrial visits and providing us with this valuable learning opportunity. We also extend our thanks to the officials and staff of IMD Ahmedabad, eInfochips, and BISAG-N for their warm hospitality, detailed presentations, and willingness to share their knowledge and expertise with us.

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Appendices

