Aditi Gulati

Bachelor of Technology
in Computer Science Engineering
Indira Gandhi Delhi Technical University For Women

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EDUCATION

Degree	Institute	CGPA/Percentage	Year
Bachelor of Technology (CSE)	Indira Gandhi Delhi Technical University For Women	9.16	2021-2025
Senior Secondary (CBSE)	Bal Bharati Public School, GRH Marg	97.2%	2021
Secondary (CBSE)	Bal Bharati Public School, GRH Marg	95.4%	2019

EXPERIENCE

- **The University of Winnipeg | Research Scholar** — *July 2024 - January 2025*
  Mitacs Globalink Research Internship — Winnipeg, Manitoba, Canada
  – Conducted research under Professor Camilo Valderrama as part of the Mitacs Globalink Research Internship, focusing on enhancing machine learning models through automated feature engineering.
  – Designed **Feature-Gen**, a Python library for automated feature engineering using genetic algorithms, boosting model accuracy while ensuring interpretability
  – Optimized feature sets via NSGA-II, achieving 54.5% fewer features and 1.5% higher F1 scores across diverse datasets
  – Integrated ensemble learning (XGBoost, SVM) and non-linear transformations to enhance machine learning models

- **JPMorganChase | Software Engineer Program Intern** — *June 2024 - July 2024*
  Consumer & Community Banking (CCB) - Data Technology Regulatory External Data Services team — Hyderabad, Telangana, India
  – Collaborated within the REDS team to ensure accurate and compliant data reporting for external regulatory authorities by modernizing legacy systems and automating critical workflows
  – Automated data validation checks for regulatory reporting, ensuring compliance with external requirements. Utilized Java Spark for efficient data processing and deployed on AWS EMR for scalable execution
  – Migrated a legacy PL/SQL-based reporting system to a Spark-powered ETL pipeline, improving processing efficiency and reducing runtime
  – Designed and deployed automated workflows using AWS services and CI/CD pipelines to streamline report generation

- **Engineers India Limited | Vocational Trainee** — *June 2023 - July 2023*
  Employee Database Management System using MVC — Delhi, India
  – Leveraged Big Data analytics and OpenCV to develop an employee attendance system, automating the employee data
  – Acquired proficiency in software development methodologies, databases, SQL, ASP.NET MVC, Visual Studio
  – Designed and implemented a user-friendly interface using React for data storage and retrieval, enhancing the efficiency of HR operations and ensuring data integrity

- **Omdena Edmonton | Data Analyst** — *June 2022 - July 2022*
  Predicting Housing Affordability of Canada's metropolitan region — Edmonton, Alberta, Canada
  – Conducted in-depth predictive analysis using Python, data mining, and quantitative analysis to assess the future trajectory of housing affordability
  – Developed a comprehensive heat-zone map through data visualization, highlighting regions with worsening housing affordability trends
  – Leveraged open-source data and applied advanced predictive analytics to gain a deep understanding of Canada's housing market, while identifying key factors influencing housing affordability, contributing to informed decision-making for addressing this critical issue

- **Infosys | Software Development Intern** — *February 2022 - May 2022*
  Wingspan User Importer — Bengaluru, Karnataka, India
  – Collaborated to implement a critical user management system, using Python, SQL, Kafka, and Apache Spark for Big Data
  – Synchronized client's user data with Wingspan's platform, allowing new users, updating existing users, and managing access for specified users based on client's criteria
  – Demonstrated adaptability by creating an extensible solution assuring a seamless integration for future enhancements, contributing to the ongoing success of Infosys' Wingspan project

PROJECTS

- **Swarm Intelligence** — *Python, Scikit Learn, OpenCV, Deep Learning, Flask*
  Artificial Intelligence Project — **GitHub**
  – Developed algorithm for optimal task distribution and path planning in multi-agent multi-task systems
  – Used K-Means clustering to assign tasks to agents according to proximity and threading for synchronous movement
  – Used fast solutions to the Travelling Salesman Problem to decide the order of traversal for multi-objective tasks
  – Implemented A* Path Finding algorithm from scratch to find optimal path between two objectives

- **Dominant Colour Detection** — *Python, Scikit Learn, NumPy, OpenCV, Matplotlib, Pandas, Seaborn*
  Project Jupyter Notebook — **GitHub**
  – Implemented K-means clustering for dominant color extraction in images, and optimized convergence speed
  – Performed image segmentation, and analyzed image content for efficient color extraction for image processing

- **Voice Notes**   *HTML, CSS, JavaScript, Web Speech API, SpeechRecognition API*
  Voice Notes Web App   **GitHub**
  - Web App to create and edit new notes by voice command or by typing
  - It allows users to create, edit, save, listen to, and delete notes, providing a comprehensive note-taking experience.

- **The Weather App**   *HTML, CSS, JavaScript, OpenWeather API*
  Weather App Website   **GitHub**
  - Developed a dynamic Weather Web App utilizing the OpenWeather API, offering real-time weather data, dynamic backgrounds, and user-friendly alerts for accurate city input

ACHIEVEMENTS

- **Microsoft MVP Award 2024**: Recognized technical leadership in the Windows Development
- **JP Morgan Code for Good 2023**: Addressed real-world challenges for social impact in a 24-hour Hackathon
- **Uber She++ 2023**: Selected among top 75 girls across the nation from the 19 best engineering colleges in the country
- **Gold Microsoft Learn Student Ambassador**: Empowered peers with tech expertise through Workshops and Tech-Talks
- **8x Microsoft Azure Fundamentals Certified**: AZ-900, AI-900, DP-900,PL-900, MS-900, MB-910, MB-920, DP-500
- **Ideate 'N' Solve (Devcation 2022 Hackathon)**: Jury Award by Google Developer Student Club
- **Google HASHCODE 2022**: Global rank 1133, All India Rank 241
- **IIT JEE MAINS 2021**: Secured top 2 Percentile among 1 million candidates

RESEARCH EXPERIENCE

- **Indira Gandhi Delhi Technical University For Women | Research Intern**   *Faculty Advisor: Dr. D. K. Tayal*
  Python, Feature Extraction, Multi-agent Systems, HCI, NLP, Big Data
  - Worked on the Detection of life threatening diseases by examining the human genome in Microarray data using distributed implementation of algorithms funded by Department of Science and Technology, and wrote the journal titled "Binary Class Coyote Optimisation Algorithm with Levy Flight Mechanism for Feature Selection."
  - Also worked on the Summer Internship Project in the Department of Computer Science and Engineering, IGDTUW, and wrote the journal titled "Evaluating Inconsistency in Textual and Speech sentiments."
- **Research interests:** Human-Computer Interaction, Computer Vision, Machine Learning, Data Analysis and Visualization, Data Mining, Big Data Analysis, Optimization Algorithms, Generative Adversarial Networks, Natural Language Generation, Natural Language Understanding, Feature Engineering, Sustainable Artificial Intelligence, Predictive Modeling, Data Ethics

SKILLS

- **Programming/Tools**: Python, C/C++, SQL, HTML, CSS, JavaScript, LaTeX, Git, GitHub
- **Courses**: Software Engineering, Database Management Systems, Object Oriented Programming, Data Structures and Algorithms, Operating System, Operation Management, Data Analytics, Big Data, Artificial Intelligence, Computer Vision
- **Soft Skills**: Problem Solving, Analytical thinking, Interpersonal skills, Research, Project Management, Strategist, Teamwork, Collaboration, Avid learner, Proficient writer, Organized and Detail oriented, Adaptability and continuous learning

LANGUAGES

- **English**: Native or Bilingual Proficiency
- **Hindi**: Native or Bilingual Proficiency
- **French**: Professional working proficiency
- **German**: Professional working proficiency