# Gourab Modak

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Portfolio Website | LinkedIn | Github | Codechef | Codeforces | Leetcode

## Professional Summary

Computer Science student with a strong background in software engineering and machine learning. Experienced in developing and optimizing ML models, performing data analysis, and leading technical projects. Proficient in Data Structures and Algorithms (DSA) and committed to teamwork and mentoring.

## Education

**Indian Institute of Technology Madras**, BS in Data Science and its Applications — May 2023 to Present
- CGPA: 9.63/10.0 (Topper) (Profile Page) (Progress Card)

**Jalpaiguri Government Engineering College**, B.Tech in Computer Science — Sept 2022 to May 2026
- CGPA: 9.57/10.0 (Latest Progress Card)

**Competitive Exams:** 95.5%ile in JEE Mains and 98%ile in WBJEE Rank: 2100

## Work Experience

**Software Engineering Intern**, iHub and HCi Foundation, IIT Mandi, H.P., India — May 2024 to July 2024
- Automated EEG data signal processing from a 64-channel ANT Neuro device using Python scripts, significantly reducing manual workload and improving efficiency; implemented noise reduction algorithms on signal data from 150 patients.
- Developed and tested over 7 machine learning algorithms, including KNN, SVM, and Random Forest, achieving over 80% accuracy in classifying healthy individuals and Parkinson's patients, and predicting disease severity.
- Enhanced machine learning model performance by 20% through optimal hyperparameter tuning using grid search.
- Created an automated attendance system using QR code scanning, streamlining attendance tracking and eliminating manual work.

## Projects

**Deep Leaning Project on Plant Disease Prediction** — github.com/spexcher/PDP
- Designed and implemented a robust CNN-based image classifier for precise plant disease prediction, leveraging advanced data augmentation techniques to enhance model generalization.
- Engineered data pipelines and created visualizations using NumPy, Pandas, Seaborn, Matplotlib, scikit-learn, TensorFlow, and Keras; increased data processing efficiency by 40% and streamlined model evaluation process

**Machine learning Project on Diabetes Prediction** — github.com/spexcher/DBP
- Developed an advanced diabetes prediction model using Support Vector Machine; spearheaded the optimization hyperparameters via Grid Search and Bayesian Optimization, achieving 78% prediction accuracy, best in the industry.
- Tools Used: NumPy, Pandas, Seaborn, Matplotlib, scikit-learn, scikit-optimize.

**Competitve Programming Editor** — ceditor.vercel.app/
- The Competitive Editor is a custom-built code editor designed for competitive programmers. It provides an interactive interface for writing, running, and testing code efficiently, supports multiple programming languages, and includes a snippet library with useful algorithms and data structures for competitions.
- Tech Stack: Chakra UI, JS, ReactJS, Monaco Editor, Node JS.

## Achievements Certifications and Awards

- **Coding Achievements:** Achieved 3 Star Coder status (Top 10%) on CodeChef; solved over 1,500 DSA questions across various coding platforms like Codeforces, Leetcode etc.
- **2ND Prize, IST Runner Up**: IIT Kharagpur Techfest (Kshitij) Voyager competition.
- **Silver Medalist:** Achieved Excellency in Data Structures and Algorithms in Python, Joy of Computing in Python, Discrete Mathematics, and English Language for Competitive Exams.
- **1ST Prize**: Awarded for demonstrating exceptional problem-solving skills and advanced knowledge in Data Structures and Algorithms in College Coding Competition.
- **2ND Prize**: Recognized for outstanding writing ability and proficiency in English composition in College English Writing Competition.

## Volunteering Experience

**AI/ML Core Team**, Google Developer Student Clubs GDSC - JGEC Jalpaiguri W.B. India — Aug 2023 to Feb 2024
- Promoted to AI/ML Core Team in 2023, led workshops, coding bootcamps, and mentored students in Data Structures, Algorithms, and AI/ML.
- Provided one-on-one mentorship, enhancing students' problem-solving skills and preparing them for coding contests.

## Skills/Technologies

**Programming Languages**: Python, C++, JavaScript, Java
**Machine Learning**: Scikit-Learn, TensorFlow, Pandas, NumPy
**Web Development**: HTML, CSS, JavaScript, React, SQL, Flask, Django, MongoDB
**Tools & Technologies**: Git, GitHub, Docker
**Software Development**: Data Structures and Algorithms (DSA), Object-Oriented Programming (OOPs), Software Engineering