

# TORAL BANERJEE

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## EDUCATION

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Clark University, Worcester, MA – B.A. in Computer Science with a Minor in Mathematics. **Expected 2027**  
Cumulative GPA: 3.78/4.0

Honors/Awards: Dean's List (Fall 2024)

Atupem Award – Granted to one student annually demonstrating exceptional motivation to pursue an impactful summer internship

## EXPERIENCES

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**Research Assistant – Prof. Ron Lin, Clark University, Worcester, MA** **Jan'25-Present**

- The research lies in development and application of AI-driven methodologies, particularly large language models and multi-agent systems, especially done for intelligent design across domains such as semiconductors, materials science, and industry-specific problem solving.
- Developing a regression-based predictive model to estimate semiconductor chip performance, leveraging feature importance analysis across 50+ design parameters to improve accuracy.
- Authored a medical policy correspondence on AI regulation and patient safety; successfully published in Nature journal.

**Data Analytics Intern, Reliance BP Mobility Limited, Mumbai, India** **Summer'25**

- Customer segmentation initiative across 1,400 fuel retail outlets to personalize loyalty and pricing strategies.
- Conducted K-Means and RFM clustering on 15,000+ customers, collaborated with pricing and loyalty teams, and built visualizations using Matplotlib and Tableau.
- Reduced customer churn by 10% and improved redemption efficiency by 15% through targeted loyalty offers and regional strategy customization.

## PROJECTS

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**DoodlesCare – iOS Wellness App for Dogs** **Mar'25-Present**

- A playful and wellness-focused iOS application that's designed to track pet profiles, medical records, and care routines, featuring an integrated AI chatbot for personalized recommendations.
- Designed and developed playful, user-centric interfaces for pet profiles, medical logs, and care routines using Swift and SwiftUI, while integrating an AI-driven chatbot to recommend products, meals, and activities based on pet characteristics.
- Continuously improved features through iterative updates informed by beta testing and user feedback, enhancing both user engagement and recommendation accuracy.

**Sales Forecasting Model, Worcester, MA** **Winter'24**

- Developed a time-series forecasting solution to predict sales trends with seasonal variability using ARIMA and Facebook Prophet models.
- Led model development in Python, focusing on identifying optimal parameters for accurate seasonality and trend analysis.
- Improved seasonal forecast accuracy by 18%, leading to better marketing decisions for the users.

**Interactive Tableau Dashboard – Udaan Foundation, Mumbai, India** **Aug'24-Nov'24**

- Built an interactive Tableau dashboard to analyze performance data of 100 girls in a coding education program.
- Visualized key performance indicators (KPIs) such as attendance, engagement, and completion rates.
- Advised on curriculum redesign and regional delivery models based on KPI insights, enhancing program scalability and increasing retention by 20%

## ACTIVITIES

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**International Student Association:** Being part of organizing Clark's biggest international event, The Gala.

**Clark's Centre for Technology, Innovation and Entrepreneurship:** Participant for various workshops; speaker on internship panel.

## SKILLS

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**Programming & Data Tools:** Python (Pandas, NumPy, Matplotlib, Scikit-learn), R, SQL, Java, CSS, JavaScript

**System Administration & IT Support:** Linux (basic command line, package management), Virtualization (VirtualBox), Bash scripting (basic)

**Basic UI/UX:** Responsive layout principles, mobile-first design considerations

**CMS Platforms:** WordPress (familiar with content structuring, updates)

**Data Analytics & Modeling:** Data wrangling, predictive modeling, clustering, regression analysis, statistical inference, Pattern Finding, Trend Analysis

**Insights and Synthesis:** Customer, Insights, Insight Summary, Question Writing

**Strategic Decision-Making:** Forecasting Impact, Trade-Off Testing, Recommendation Framing, Stakeholder Framing

**Data Visualization:** Tableau, Power BI, Matplotlib, Seaborn

**Database Management:** MySQL, PostgreSQL

**Cloud & Tools:** AWS (basic), Git, Jupyter Notebooks, MS Access, Excel, GitHub

**Big Data Technologies:** Apache Spark

**Generative AI:** OpenAI APIs

**Soft Skills:** Analytical thinking, problem-solving, clear communication, team collaboration, confident presenter

**Spoken:** English (Fluent), Hindi & Bengali (Native), French (Basic)

## RELEVANT COURSEWORK

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Data Structures (CSCI21), Discrete Structures (CSCI122), Introduction to Python (CSCI120) **Fall'24-Spring'25**  
Algorithms (CSCI 160), Automata Theory (CSCI 180), Linear Algebra ( Math 130) and Introduction to Analysis (Math 172) **Fall'25**