

# Rajan Shrestha

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## Objective

Industrial Engineering undergraduate seeking an internship in **Operational Research & Analytical Engineering**. Passionate about data-driven decision-making using Operations Research and Simulation. Proficient in Python, SQL, Excel (Solver/Crystal Ball), IoT, and fabrication.

## Education

- 2078–Present **Bachelor in Industrial Engineering (BIE)**, *Tribhuvan University*, Kathmandu  
Focus: Industrial System Design, Optimization, and Data Analysis.  
**Relevant Coursework:** Operation Research, Probability & Statistics, Production Planning & Control, Supply Chain Management, Project Management, Simulation Modeling, Engineering Economics

## Technical Skills

- Data Analysis Microsoft Excel (Solver, Data Analysis Toolpak), Oracle Crystal Ball (Simulation), Regression  
Programming C, Python (Pandas, NumPy), SQL  
Design & Core SolidWorks, AutoCAD, Linear Programming, Network Optimization, IoT (Arduino), Inventory Mgmt.

## Academic Projects

- Academic **Operations Research & Data Analysis Portfolio**  
Applied industrial engineering concepts to solve logistical and financial problems:
- **Optimal Route Planning:** Utilized Network Optimization algorithms (Shortest Path/MST) to minimize travel time.
  - **Staff Shift Management:** Developed a linear programming model to optimize staff scheduling and minimize costs.
  - **Cash Flow & Prediction:** Analyzed liquidity using engineering economy; applied Regression/Time-Series for demand planning.
  - **Simulation:** Used **Crystal Ball** for stochastic prediction and risk analysis in decision-making models.
- Major Project **Automatic Pet Feeder Machine (IoT)**  
Designed and fabricated a smart dispensing system to automate pet feeding intervals.
- **Role:** Designed mechanical hopper in SolidWorks; programmed Arduino logic for precise timing.
  - **Fabrication:** Managed physical fabrication using workshop tools (Lathe, Drilling, Sheet metal work).
- Design Project **Plastic Brick Making Machine**  
Designed a machine to convert plastic waste into construction bricks, focusing on sustainable manufacturing. Calculated torque requirements and designed the compression mechanism.

## Achievements

- 2080 **Winner**, Project Demonstration at Yathartha 2080, IOE Thapathali Campus  
2080 **Public Choice Winner**, BE Project Demonstration at MechTRIX 2080, IOE Pulchowk Campus