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Graduate Project Portfolio

Systems Science Projects

Agent-Based Modeling of Satellite Networks and Debris Proliferation using Netlogo

- **Presentation**
- **Research Paper**

System Dynamics Modeling Papers

- Exercise 1: **Object in Freefall and with a Parachute**
- Exercise 2: **Rocket Acceleration, Specific Impulse**
- Exercise 3: **Rocket Control Systems**

Data-Mining with Information Theory

- **Reconstructability Analysis and Vehicle Health Management Data**

Modeling and Simulations with Python

- Lab 1: **Probability Models**
- Lab 2: **ODE Models**

Undergraduate Project Portfolio

Business Operations, Supply Chain & Logistics

Business Forecasting using R (a selection of HW assignments)

- HW5: **Seasonality**
- HW6: **R-Squared**
- HW7: **Exponential Smoothing**
- **R Code Output (all HWs)**

Production Planning & Control

- Case Study 1: **Greaves Brewery Bottle Replenishment (Excel)**
- Case Study 2: **Aggregate Planning at Green Mills (Excel)**

Operations Research using Excel

- HW2: **Product Mix (paper)** | **Excel**
- HW3: **Comprehensive Problems (paper)** | **Excel**
- Cast Study 1: **Merton's Trucks (paper)** | **Excel**
- Case Study 2: **Rougir Cosmetics (paper)** | **Excel**

Lean Six Sigma Quality Project

- **A3 Report 1**
- **A3 Report 2**
- **A3 Report 3**
- **Voice of the Customer (VOC) Survey**
- **Quality Report**
- **Data used in report (Excel)**

Electrical Engineering

Engineering Computation

- **Light Tracking Robot** | **Demo video**

Electrical Circuits

- **Surge Suppressor**
- **Audio Equalizer**
- **Power Factor Correction in a Black Box Circuit**