SI100B
Introduction to Information Science and Technology

Project:
Prediction of Lithium Ion Battery Cycle Life

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Outline

- Background
- Project Overview
- Rubrics
- Timeline
- Report Submission

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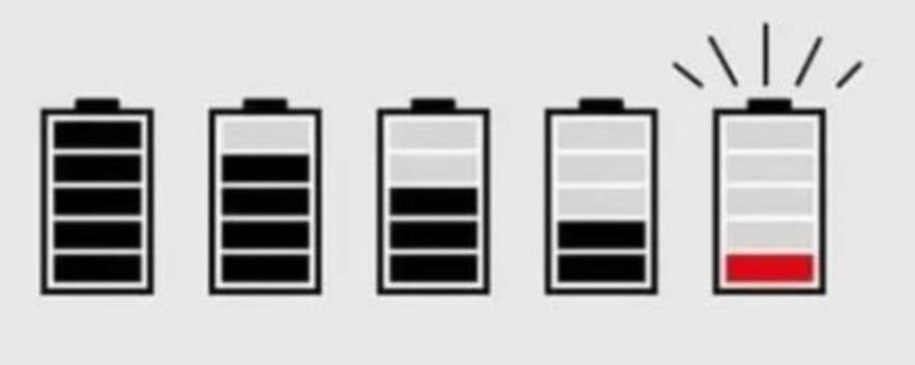
Background

- Battery Charging
- Battery Discharging
- Cycle Life



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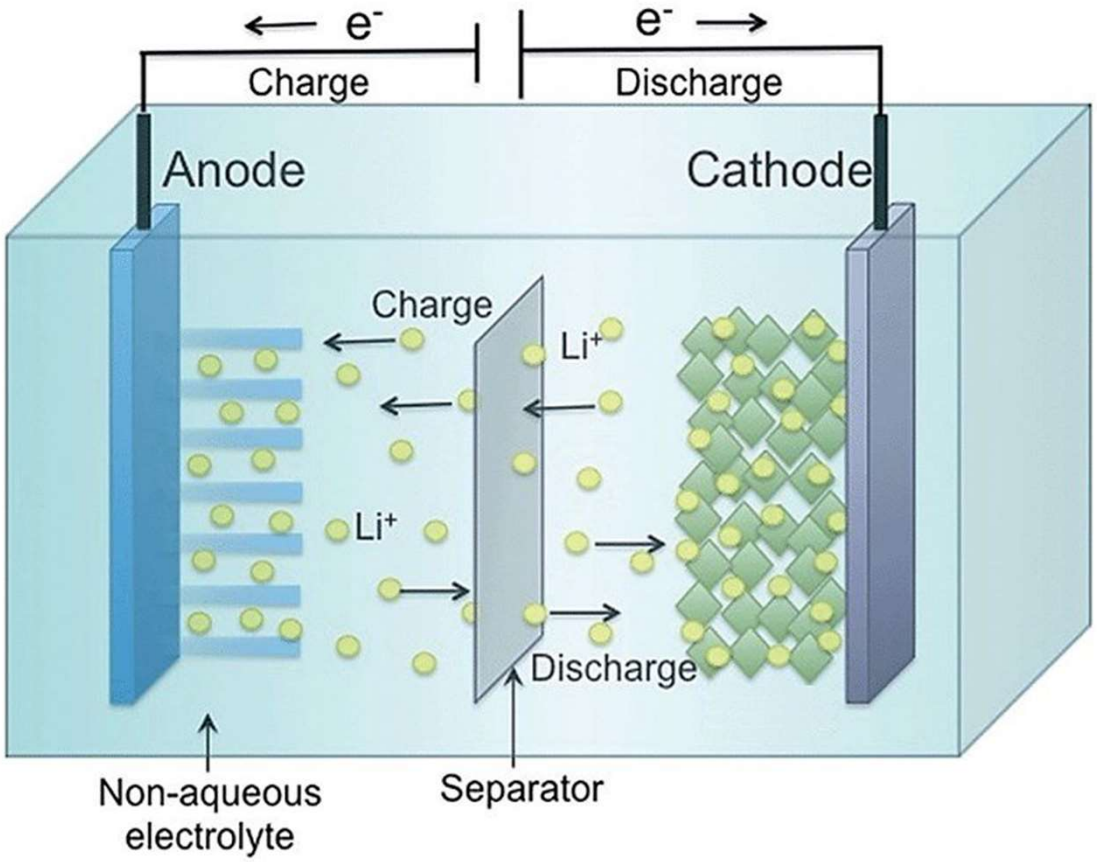
Project Overview

- Lithium Ion Battery
  - Materials
  - Principle
  - Properties



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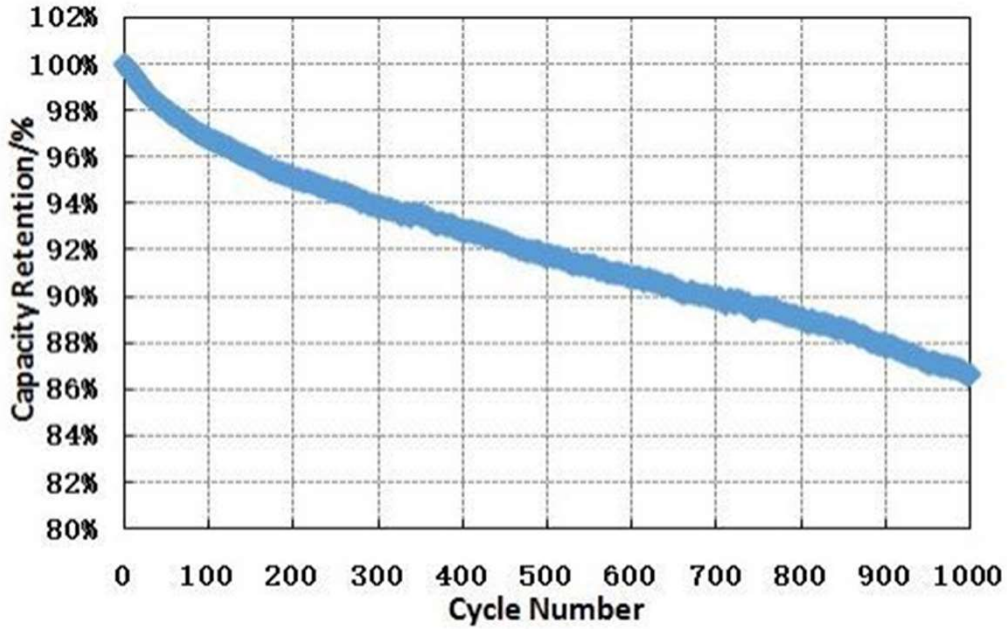
Project Overview

- Battery Cycle Life



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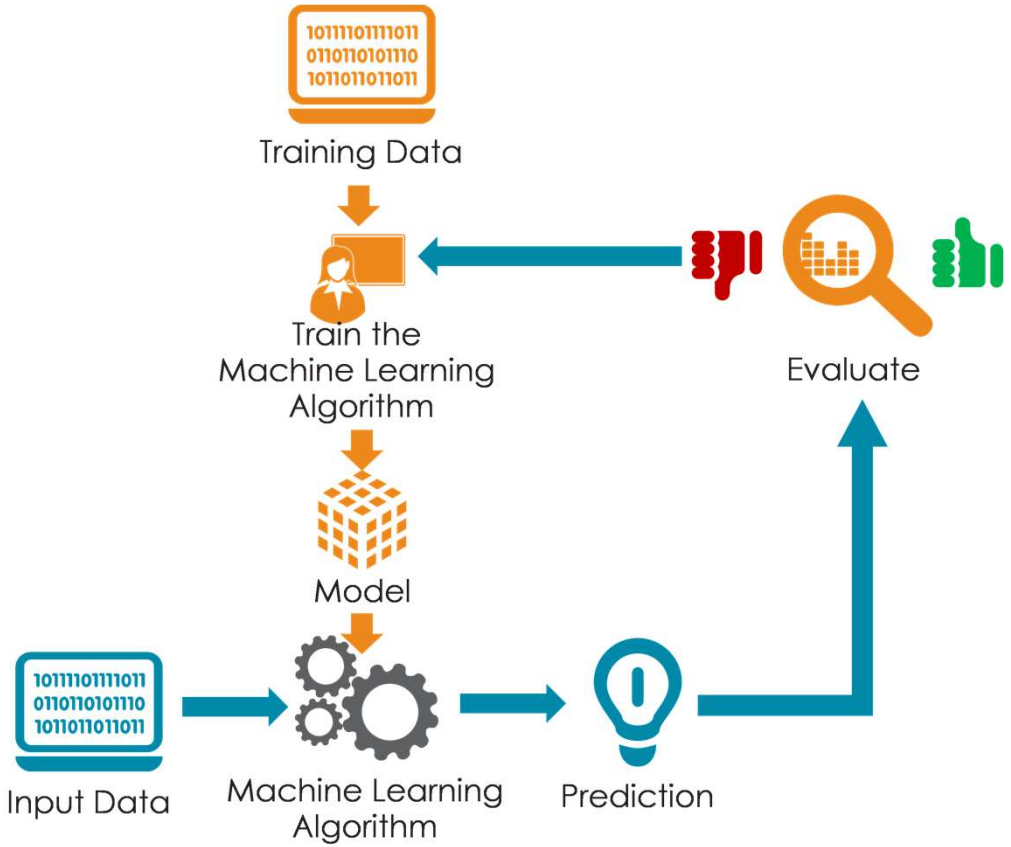
Project Overview

- How to predict cycle life?
  - Tool: Machine Learning
  - Data: Early Stage



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Rubrics

- Design and complete the prediction and classification program for cycle life of lithium ion battery
  - Complete the following :
    - Data processing (20%)
    - Loss function (10%× 2)
    - Optimization method(10%× 2)
  - Realize data prediction and classification, and score according to the results (40%)

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Timeline

- 5.05 Introduction
- 5.06 Battery Data preprocess
- 5.10 Linear Regression with One Variable
- 5.12 Linear Regression with Multiple Variable
- 5.17 Regularization
- 5.19 Logistic Regression
- 5.24 Prediction & Classification of Cycle Life
- 5.26 Optimization

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Report Submission

- Submit your report, result & code
- Report should include
  - Introduction
  - Logic of your solution
  - Details of your result
  - Conclusion
- Result & Code for double-checking

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