UNC AI Bootcamp
Project Outline for AI-Powered Covered Calls Service - Presentation Outline

Slide 1: Title Slide
- Content: Project Title, Your Name, Date
- Image: Logo or thematic image related to AI or finance

Slide 2: Introduction to Covered Calls
- Content: Brief explanation of what covered calls are
- Image: Diagram of a covered call's components

Slide 3: The Lemonade Stand Analogy
- Content: Story of selling the option to buy your lemonade stand
- Image: [Lemonade stand image](sandbox:/mnt/data/Create_an_image_of_a_quaint_lemonade_stand_on_a_su.png)

Lemonade Stand Story:
Imagine you own a small lemonade stand that you believe is worth $100. One sunny day, a neighbor comes to you and says, "I see you're doing well with your lemonade stand. I'd like to have the option to buy it from you for $100 next month because I think it will be worth more by then. I'll pay you $10 right now for that option."

You think about it and decide to accept because:

> ***You get to keep the $10*** *no matter what happens.*
>
> ***If your neighbor decides to buy*** *the lemonade stand for $100, you've made a bit of profit (the $10 option fee).*
>
> ***If your neighbor decides not to buy*** *the stand because it's not worth more than $100, you still keep your stand and the $10.*

This situation is similar to ***selling a covered call*** *in the stock market. The lemonade stand is like your stock. The $10 payment is the option premium that an option buyer pays you, the stock owner, for the right (but not the obligation) to buy your stock at a predetermined price (the strike price, in our analogy, $100) within a certain period.*

Why 'covered'? *Because you already own the lemonade stand (or stock), which covers the obligation to sell it if the neighbor (option buyer) decides to buy it at the agreed price.*

Why do people do this? *For the same reason, you took the $10 from your neighbor. It's a way to make extra income (the premium) on your investment while still owning it. If the value exceeds the agreed selling price (strike price), you keep the premium and the stock. If it does, you still keep the premium and profit from selling the stock, although you might miss out on higher profits if the stock's price goes significantly above the strike price.*

Risks? *The main risk is missing out on higher profits. If your lemonade stand suddenly becomes super popular and worth $200, you still have to sell it to your neighbor for $100. But remember, you entered this agreement willing to take that risk for the certainty of the $10 upfront and a fair selling price based on what you thought the stand was worth.*

Slide 4: Why Covered Calls?
- Content: Benefits of using covered calls for income
- Image: Icons or small diagrams showing income, security, and strategy

Slide 5: The Problem Statement
- Content: Challenges retirees face in optimizing covered call strategies
- Image: Graph or icon showing the complexity and risk vs. reward

Slide 6: AI to the Rescue
- Content: How AI can transform covered call strategies
- Image: AI and technology symbols

Slide 7: Project Objective
- Content: Detailed objectives of the AI-powered covered call program
- Image: Bullseye or target icon

Slide 8: Data Acquisition
- Content: Sources of stock and options data, focus on real-time data access
- Image: Logos of data sources like polygon.io

Slide 9: Data Preparation
- Content: Steps for data cleaning and preprocessing
- Image: Flowchart of data preparation steps

Slide 10: Model Development
- Content: Overview of AI models considered
- Image: Icons or small visuals for different models (e.g., neural networks)

Slide 11: Model Training & Validation
- Content: Explanation of training, validation, and backtesting
- Image: Split diagram showing training and validation sets

Slide 12: Optimization Process
- Content: Iterations in model development, response to market events
- Image: Before and after graphs showing optimization impact

Slide 13: Performance Summary
- Content: Model's capabilities in identifying optimal covered calls
- Image: Table or chart showing backtesting results

Slide 14: GitHub Repository Management
- Content: How the project is organized on GitHub
- Image: Screenshot of GitHub repository structure

Slide 15: Project Documentation on GitHub
- Content: Key components of the README and documentation
- Image: Example snippets from the README file

Slide 16: Presentation Summary
- Content: Recap of key points and project innovation
- Image: Summary icons or checklist

Slide 17: Data and Methodology Overview
- Content: Deep dive into the data sourcing and analytical approach
- Image: Complex flowchart or data model diagram

Slide 18: Project Approach and AI Model Selection
- Content: Rationale behind AI model choice and methodology
- Image: Decision tree or model selection criteria chart

Slide 19: Results and Insights
- Content: Detailed findings and model performance
- Image: Graphs and charts illustrating successful strategies

Slide 20: Future Directions
- Content: Potential improvements and market opportunities
- Image: Roadmap or compass icon