**Sprint-1 Minimum Viable Product**

**Introduction**

In this Sprint, the purpose was to create a minimal viable working product. The following sections contain the User Stories I worked on with a detailed description of the Tasks I worked on.

**User Stories**

I worked on the following User Stories:

[**GNN: DishFT-GNN: Future-Aware Distillation GNN #595**](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/595)

**Conditions of Satisfiability:**

* Correctness: Adjacency shapes and edge thresholds are validated.
* Performance: Teacher & student training complete without errors; student inference meets latency target.
* Robustness: Pipeline handles missing days or low-volatility periods gracefully.
* Integration: Crew AI agent consistently applies probability rules to emit valid recommendations.

**Definition of Done:**

* Price data loader and returns matrix are implemented and tested.
* Correlation-based graph builder produces correct adjacency tensors.
* Teacher GNN architecture, training loop, and checkpoints are in place.
* Student GNN with distillation loss trains and is serialized.
* Inference script loads student model and emits the required JSON.
* Crew AI decision agent is configured and returns correct BUY/SELL/HOLD payload.
* End-to-end integration test passes under performance requirements.

**Tasks**

[GNN.1 Price & Returns Ingestion (8 ph) #596](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/596)

[GNN.2 Graph Construction (9 ph) #615](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/615)

[GNN.3 Teacher GNN Development (9 ph) #713](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/713)

[GNN.4 Student GNN & Distillation (7 ph) #714](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/714)

[GNN.5 Inference Wrapper (6 ph) #715](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/715)

[GNN.6 Crew AI Integration (4 ph) #716](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/716)

[GNN.7 Validation & Testing (7 ph) #717](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/717)

[GNN.8 Backtesting & Evaluation (11 ph) #718](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/718)

**Tasks I Worked On**

[GNN.1 Price & Returns Ingestion (8 ph) #596](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/596)

I developed an application to pull OHLC data for all tickers and compute daily returns matrix and persist using Numpy/PyTorch tensors. The task was estimated at 6 person hours but it took me 17 person hours to complete.

**Summary Table of Work**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| UserStory GitHub Issue ID | User Story | Story Points | Task GitHub Issue ID | Task | Task Hours | Status | Actual Hours |
| [GNN](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/595) | [DishFT-GNN: Future-Aware Distillation GNN #595](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/595) |  | [GNN.1](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/596) | [Price & Returns Ingestion (8 ph) #596](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/596) | 8 | Complete | 17 |

**Summary Table of Commits**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date | Commit Number | Commit Description (exactly as in github) | User Story | Task |
| June 2nd, 2025 | 50fca89ee6fb211be1ecf733182a96f8fc64c971 | [GNN price load and compute daily price matrix](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/pull/626/commits/50fca89ee6fb211be1ecf733182a96f8fc64c971) | [GNN](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/595) | [GNN.1](https://github.com/Rivier-Computer-Science/AI-Agent-Stock-Prediction/issues/596) |