

Final Project Update: Optimal Farming Schemes in Stardew Valley

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1. Update

To date, I have built a simple crop simulator in Julia that considers both single- and multi-harvest crops, stochastic crop quality, and expected profit per crop, per season. Functionalities remaining to be implemented include fertilizer effects, labor costs, and multiple objectives besides long-term profit such as crop diversity, risk aversion, or immediate reward. I will baseline my cutting plane method optimal policy against a random crop selection at each day, subject to the player's available gold and the number of open plots. If feedback is provided, I would appreciate other ideas for how to make this crop scheduling problem more technically interesting.

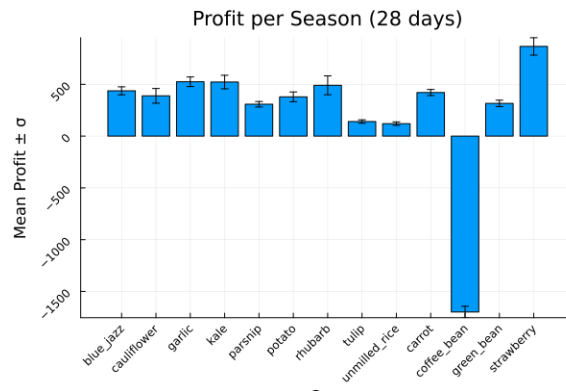


Figure 1: Expected profit per season of Stardew Valley spring crops. Error bars indicate $\pm\sigma$.

2. Timeline

Goal:	Due By:
Implement random policy	5/23
Implement cutting plane method	5/25
Create slide template	5/28
Finalize and record presentation	5/30

Table 1: Project milestones.