IE 633: Dynamic Programming Notes

Lecture 1

Topics Covered
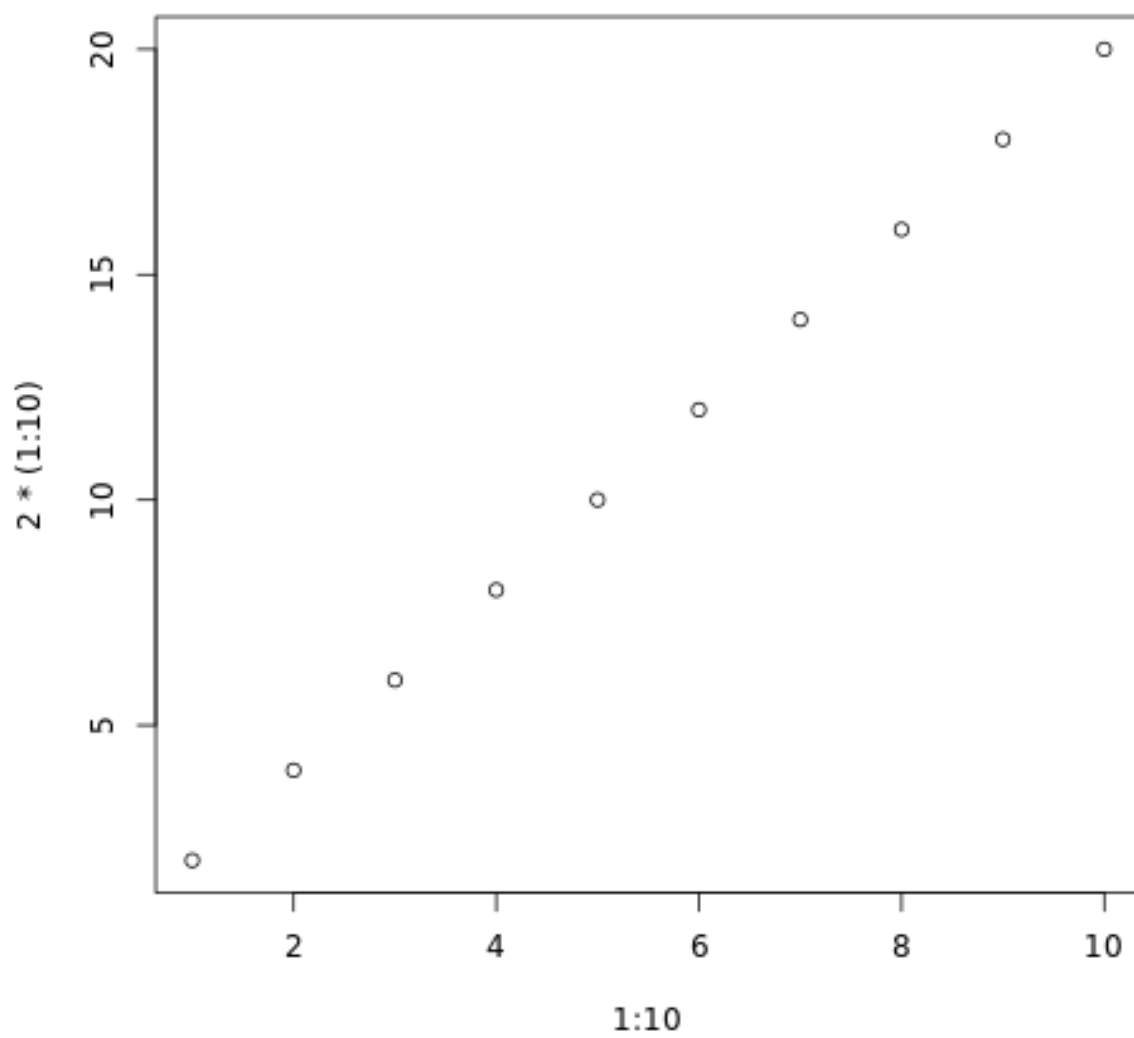
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Backlinks

None

Book References

None

Propositions/Proofs/Theorms

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Notes

```
plot(x=1:10,y=2*(1:10))
```

Figure 1: test

$$\min_u E[g + J]$$

Lecture 2

Topics Covered

Deterministic Problems

Backlinks

None

Book References

None

Propositions/Proofs/Theorms

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Lecture 3

Topics Covered

Finite State, Action, and Horizon Problems, Viterbi Algorithm

Backlinks

None

Book References

None

Propositions/Proofs/Theorms

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Lecture 4

Topics Covered

Viterbi Algorithm, Hidden Markov Models, Maximum A Posteriori Estimation, Forward Dynamic Programming, Multi-Objective and Constrained Dynamic Programming

Backlinks

None

Book References

None

Propositions/Proofs/Theorms

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Lecture 5

Topics Covered

Viterbi Algorithm Linear Model

Backlinks

None

Book References

None

Propositions/Proofs/Theorms

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Lecture 6

Topics Covered

Markov Policies, Inventory Control Problems, Stopping Time Problems

Backlinks

None

Book References

None

Propositions/Proofs/Theorms

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Lecture 7

Topics Covered

k-Convexity, Optimal Stopping/Asset Selling,

Backlinks

None

Propositions/Proofs/Theorms

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Lecture 8

Topics Covered

Markov Decision Processes, Optimal Staionary Policies, The Bellman Operator

Backlinks

None

Book References

Chapter 2 of Bertsekas and Shreve

Propositions/Proofs/Theorms

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Lecture 9

Topics Covered

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Backlinks

None

Propositions/Proofs/Theorms

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Lecture 10

Topics Covered

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Backlinks

None

Propositions/Proofs/Theorms

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Lecture 11

Topics Covered

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Backlinks

None

Propositions/Proofs/Theorms

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Lecture 12

Topics Covered

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Backlinks

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Propositions/Proofs/Theorms

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Lecture 13

Topics Covered

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Propositions/Proofs/Theorms

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Lecture 14

Topics Covered

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Lecture 15

Topics Covered

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Lecture 16

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Lecture 32

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