

Research Notes

Yuqin Ao

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1 Today's Work

- Read about gradient descent and strong convexity.
- Summarized key lemmas.

2 Key Formula

If f is L -smooth,

$$f(y) \leq f(x) + \nabla f(x)^\top (y - x) + \frac{L}{2} \|y - x\|^2.$$

3 Questions

1. Why does strong convexity help with linear convergence?
2. How does proximal gradient relate to classical gradient descent?