

# Lecture 06: Generalization Bounds and Intro to Stability

## Alex Rakhlin

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### Description

We introduce the notion of generalization bounds, which allow us to have confidence in the functions our algorithms are finding. We introduce the notion of algorithmic stability, and explore the connection between algorithmic stability and generalization bounds.

### Suggested Reading

- V. N. Vapnik. **Statistical Learning Theory**. Wiley, 1998.
  - F. Cucker and S. Smale. **On The Mathematical Foundations of Learning**. Bulletin of the American Mathematical Society, 2002.
  - O. Bousquet and A. Elisseeff. **Stability and Generalization**. Journal of Machine Learning Research, to appear, 2002.
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