

The other side of derandomization

If a problem has an efficient randomized algorithm, does it also have an efficient deterministic algorithm? For most natural problems, the answer is yes: they have indeed been "derandomized". But the general question remains open, and problems like Polynomial Identity Testing are still not derandomized.

Instead of trying to give efficient deterministic algorithms for these problems, we will explore the other side of the question: show that they cannot be too hard (e.g. EXPTIME-complete). We will see some problems and some tools that might be helpful in this task.