Introduction to Graduate Algorithms

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FFT

Problem: given A and B two polynomias of degree $n-1$ find an algorithm to compute $C = A \cdot B$ in time $O(n \ln n)$.

Computing polynomial convolution

Given A and B, find $x_1, ...x_{2n}$ points and define:

1. Define $A_{even}(y)$ and $A_{odd}(y)$ where $deg \leq \frac{n}{2} - 1$.
2. Recursively evaluate at n points $y_i = x_i^2$.
3. In order $O(n)$ time get $A(x_i)$.