

Madhu Sudan



Project Overview

- **(Broadly) Algorithms & Information Theory**
- **(Focus) Algorithms for error-correction**
 - Using list-decoding
 - To correct errors in communication media
 - More errors
 - More efficiently
 - For more codes

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Progress Through December 2001

- **Efficient algorithms for list-decoding**
 - Reed Solomon case
 - Expander based
- **New applications of list-decoding**
 - Guessing secrets
- **Analysis of Grammar-based compression**



Research Plan for the Next Six Months

- **More efficient algorithms:**
 - Approach capacity for low-rate codes in nearly linear time
- **New applications of list-decoding**
 - Watermarking? Frameproofing?
- **Tree codes: For interactive computation.**
- **List-decoding vs. Packing density.**