

# Idea (2A)

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CORDIC communication pattern  
Swapping → 2 Phase clock, multi-phase clock

Communication Computation scheduling  
Time division multiplexing  
Resource Sharing

Example Area  
CORDIC, FFT Butterfly, Encryption, ...

Think CORDIC as a search algorithm.

BFS (Breadth First Search)

DFS (Depth First Search)

A\*

What is the relationship between “redundant CORDIC algorithm” and this CORDIC search algorithms?

What is the optimal solution in CORDIC?

What can be cost function of search algorithms?

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Traditional CORDIC – greedy, Depth First Search

Literature shows this traditional CORDIC is not optimal  
At least in the number of iterations.

Angle Recording CORDIC  
Look Ahead CORDIC

Adaptive CORDIC: Using parallel angle recoding to accelerate CORDIC rotations  
[PDF] from utexas.eduTK Rodrigues... - Signals, Systems and ..., 2006 – [ieeexplore.ieee.org](http://ieeexplore.ieee.org)

An angle recording method for CORDIC algorithm implementation  
YH Hu... - Computers, IEEE Transactions on, 1993 - [ieeexplore.ieee.org](http://ieeexplore.ieee.org)

High-performance CORDIC rotation algorithm based on look-ahead techniques  
CC Kao - International Journal of Electronics, 2011 - Taylor & Francis





## References

- [1] <http://en.wikipedia.org/>
- [2] J.H. McClellan, et al., Signal Processing First, Pearson Prentice Hall, 2003
- [3] A “graphical interpretation” of the DFT and FFT, by Steve Mann