



# Broccoli, LLC

## Capability Statement

Broccoli is developing a novel reconfigurable array architecture for signal processing. We specialize in the design of custom timed and non-deterministic control structures to optimize compute architecture for program workload characteristics.

### Core Competencies

- Self Timed Circuit Design
- VLSI Design
- Reconfigurable Array Architectures
- Signal Processing
- Pre and Post Silicon Validation
- Chip Tapeout
- Logic Synthesis
- Compiler Design

### Differentiators

- Self-Timed Circuits Expertise
- Non-Deterministic Control Expertise

### Past Performance

- Open lecture series on Self-Timed Circuits [ [broccolimicro.io/courses.py](https://broccolimicro.io/courses.py) ]
- Self-Timed Length Adaptive Arithmetic  
Supported by CCF-1065307, CCF-1617945, N00014-13-1-0419, FA8750-15-1-0173
- A Systematic Approach for Arbitration Expressions [ [doi.org/10.1109/TCSE.2020.3011552](https://doi.org/10.1109/TCSE.2020.3011552) ]
- Self-Timed Adaptive Digit-Serial Addition [ [doi.org/10.1109/TVLSI.2019.2918441](https://doi.org/10.1109/TVLSI.2019.2918441) ]
- QDI Constant Time Counters [ [doi.org/10.1109/TVLSI.2018.2867289](https://doi.org/10.1109/TVLSI.2018.2867289) ]
- Open source tools for Synthesis of Self-Timed Circuits [ [github.com/nbingham1/haystack](https://github.com/nbingham1/haystack) ]
- Contributions to open source tools for Self-Timed Circuit Design [ [github.com/asyncvlsi/act](https://github.com/asyncvlsi/act) ]

### Company Information

Broccoli, LLC est. Indiana 2021

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**PSC:** AC33, AJ13

**Socio-Economic Certifications:** HUBZone

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