Finite State Machines in Hardware: Theory and Design
(with VHDL and System Verilog)

Volnei A. Pedroni
MIT Press, Dec. 2013
Book web: www.vhdl.us

List of Finite State Machines Included in the Book

- Arbiter (bus access)
- Blinking light (with special features)
- Car alarms (basic and with chirps)
- Counters
- Datapath controller for a greatest common divisor
- Datapath controller for a largest-value detector
- Datapath controller for a sequential divider
- Datapath controller for a sequential multiplier
- Datapath controller for a square root calculator
- Datapath controller for an accumulator
- Debouncers (single and multiple, without and with one-shot conversion and memory)
- Divider
- Factorial calculator
- Flag monitor
- Garage door controller
- Greatest common divisor
- Hamming-weight calculator
- I^2C Interface
- Keypad encoder
- LCD driver
- Leading-zeros counter
- Light rotator
- Manchester encoders (regular and differential)
- Memory interface
- Multiplier
- One-shot circuits
- Parity detectors
- Password detector
- Pulse shifters
- Pulse stretchers
- Reference-value definers
- RTC interface
- Serial data receivers
- Serial data transmitters
- SPI interface
- String detectors
- Strings comparators (short and long, with and without overlap)
- Temperature controller
- Traffic light controller
- Triggered circuits (bistable and monostable)
- Vending machine controller