

# Alef Lambda

## Capabilities Statement

✉ [jmmatthews@aleflambda.io](mailto:jmmatthews@aleflambda.io) ☎ +1 (469) 901-9233 📄 Minority Owned

**Alef Lambda** specializes where hardware meets software. We make RISC-V FPGAs, ASICs, and concurrent computing models built on them. We build tools to empower people not replace them.

### COMPANY DATA

**UEI** — D67XCKK74U55

**CAGE** — 11TR0

**Legal Business Name** — Alef Lambda L.C

### PAST PERFORMANCE

**Custom Data Normalization Engine:** Took in data from a database, parsed millions of rows and applied custom logic using parser combinators.

**Yubikey Testing Automation:** Created embedded programs to automate yubikey testing

### NAICS

**541511,**  
*Custom Computer Programming Services*

**541512,**  
*Computer Systems Design Services*

**513210,** *Software Publishers*

**334111,**  
*Electronic Computer Manufacturing*

**334418,**  
*Printed Circuit Assembly (Electronic Assembly) Manufacturing*

### CORE COMPETENCIES

#### Programming Language

**Development:** Expertise in lexers, assemblers, linkers, bytecode, virtual machines, emulation, parsers, lambda calculus, proof assistants, and solvers

#### Custom Software

**Development:** Expertise in Common Lisp, Scala, Chisel, System Verilog, Verilator, Simulation Testing, Database integration, SQL, data analytics, backend services, and Cloud Applications

#### Emerging Computer

**Architectures:** Expertise in RISC-V Development and RISC-V assembly

#### Real Time Operating

**Systems:** Expertise in Linux and freeRTOS

#### PCB Assembly

#### FPGA/ASIC Design