

## **Principal CPU Architecture/Design Engineer**

The ideal candidate will have a Bachelor's Degree in Electrical or Computer Engineering with at least ten years of experience in CPU or similar complexity ASIC microarchitecture and design

The following skills and experience are required:

- Experience with CPU or similar complexity ASIC development
  - o Harvard and RISC architectures
  - o Design partitioning and micro-architecture definition
  - o Detailed documentation of interfaces, data flow, logic structures, pipelines, etc.
  - o High performance physically aware RTL coding
  - o Fundamental verification skills and interaction with a verification team
- Solid understanding of commonly used CPU structures
  - o Transposing ISA descriptions into fundamental processing elements such as instruction decoding, queuing, buffering, predication and branch prediction, etc.
  - o Multi-level instruction/data cache design
  - o FP ALUs, GP Regs, Accumulators
  - o Multi-thread pipelining, synchronization and exception handling
  - o Integration of high bandwidth memory and IO interfaces
- Solid working experience with industry standard CAD tools and ASIC development flows
- Scripting, e.g. with Perl, Tcl, Python, etc...
- Excellent written and verbal communication skills
- Comfortable and confident interacting with customers
- Ability to support occasional travel

The following additional skills and experiences would be a plus:

- RTL design for multi-threaded, low-power, out-of-order processor design
- Demonstrated success in RTL design of CPU/DSP logic blocks
- Recursive architectural evolution and performance tuning using hardware/software modeling methods
- Project leadership, including task definition, planning and estimating
- Deep-submicron ASIC technologies and flows
- Experience with aspects of DFT, JTAG and boundary scan
- Master's Degree in Electrical or Computer Engineering

Must be a US Person as defined in EAR 15 CFR Part 772 and ITAR 22 CFR Section 120.15, which includes US Citizenship, US Permanent Residence, or a Protected Person under 8 U.S.C. 1324b(a)(3).

***For consideration, please send your resume to [careers@firstpasseng.com](mailto:careers@firstpasseng.com)***