Digital Electrical Design Engineer

OPPORTUNITY

Ainira Industries is currently seeking applicants for Digital Electrical Design Engineer position to join our team in beautiful Melbourne, Australia. This position will report to the Electrical Engineering Manager and is responsible for supporting the design and testing of complex optoelectronic systems related to the next generation advanced EV. You will be helping with novel implementations of autonomous driving and remote sensing.

JOB DESCRIPTION

A Digital Electrical Design Engineer is required to design and develop the digital cores of the next generation of autonomous driving systems. Product designs involve the combination of optoelectronics, analog and digital design for interfacing to high-speed FPGAs and ASICs transmitting data to GPU's and PCs. The engineer will work with a diverse cross-functional project team to create subsystem elements for the next generation of autonomous driving systems and navigation mapping.

The ideal candidate will be able to develop, simulate, synthesize, verify, and document Field Programmable Gate Array (FPGA) designs in VHDL. In addition, the candidate will have extensive experience utilising microcontrollers and multicore processors using C# and other operating languages.

Key tasks include requirements development, simulation, high-speed, digital design, FPGA code development, test bench development, verification, synthesis, timing analysis, unit testing and support of debugging, and system integration activities.

The ideal candidate will be able to do the above and the creation of analog or digital schematics, circuits, and key component selection to support board layout and debug. Additional tasks and responsibilities can include task estimation, design trade studies, interface definitions, and architecture definition.

RESPONSIBILITIES

- Initiate and troubleshoot the system-level performance, including component selection, schematic capture, and simulation of board design/ high-speed digital design (>1Gbps)
- Programmable logic design experience with VHDL, Verilog, Xilinx, and Altera FPGAs
- Interfacing FPGA and boards to standard peripherals and microcontrollers via LVDS, I2C, SPI, SerDes, USB, Ethernet, and other sensor interface specifications
- Embedded programming experience for FPGAs, microcontrollers and multicore processors
- Embedded C and Matlab and software debugging tools and environments
- Signal and Data Processing Systems – high-performance computing and data processing architectures for image processing and receiver/exciter designs
- Digital Hardware – subsystem/Module Digital Circuits, custom circuit board design, programmable logic device, and field programmable gate array designs for custom and commercial off-the-shelf systems

- Digital Systems – System Trades, Architecture/Partitioning, Embedded Processing, and Real-Time System Control
- Hands-on experience testing and debugging high-speed systems with complex analog amplification, microcontrollers, and/or digital signal processing systems
- Experience with moving from FPGA to custom ASIC design and fabrication a plus
- Perform other duties as assigned

SKILLS and ABILITIES

- Qualified candidates must have a BSc or MSc degree in electrical engineering and 5+ years of work experience with electronics
- Background in lasers and photonics; LiDAR and/or ViDAR is an advantage
- Must have excellent communication, presentation and supply chain interface skills with a keen eye for detail
- Ability to prioritise multiple competing projects; and is flexible, adaptable, collaborative and follows-through
- Must operate with the highest level of ethics, integrity, confidentiality, and be dependable
- Strong organisational skills and ability to work independently with limited supervision
- Must be able to accurately communicate ideas, always operate on a professional level and provide solutions to challenging issues
- Willingness to continue to learn, grow, and take on stretch assignments
- Excellent computer and MS Office reporting skills

COMPENSATION

The Company offers a competitive compensation and benefits package, including salary and company stock.

APPLY

Click "Apply" below or use form in the Contact section – quote the reference number HR-ENG-0029. Only the shortlisted candidates will be contacted. Thank you for your interest.