AMS CAD – AI ENGINEER INTERN

WHAT & WHY?

You'll be joining a small, dynamic team composed of experts in front-end tool support, circuit simulation, and AI methodologies. Our group focuses on advancing design automation by integrating machine learning into simulation workflows. Collaboration is a core value—we frequently engage with global colleagues who specialize in tools, flows, and AI strategies. Interns are welcomed as valuable contributors and will receive mentorship and guidance throughout their experience.

ROLE DESCRIPTION

As an intern, you will work closely with a small, collaborative team to develop AI-enhanced tools that support design simulation workflows. This is a hands-on opportunity to gain experience in EDA and AI integration. Key responsibilities include:

- Writing and testing code in Python and SKILL to support simulation-related tool development.
- Participating in regular team meetings to discuss progress, align on goals, and receive mentorship.
- Assisting in the integration of AI techniques into existing design and simulation flows.
- Learning and applying best practices in software development and tool automation within a professional engineering environment.

KEY SKILLS & REQUIREMENTS

- Full-time student working towards an Undergraduate or Graduate degree in Computer Science, Data Science, Math, Electrical Engineering, Physics or related fields, with basic knowledge and exposure to theories, principles and concepts.
- Basic electronics knowledge (circuits, circuit simulation, basic circuit function knowledge) and basic custom IC layout knowledge
- Strong knowledge of Linear Algebra (matrix operations), Calculus (gradients/ backpropagation), and Probability/Statistics
- Good programming and scripting skills (Python, C/C++, SKILL)
- ML/AI experience of frameworks (PyTorch, TensorFlow/Keras, Scikit-learn), ML algorithms, and data handling (Normalization, Feature Engineering)
- Engineering: Linux environment, Git
- Basic experience with CAD tools usage
- Good communication skills (spoken and written English)

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ANALOG DESIGN ENGINEER INTERN

WHAT & WHY?

The CE AMS Vietnam team is part of the Central Engineering AMS group, which is responsible for developing AMS and foundation IPs for Marvell products. These AMS IPs serve as key building blocks that differentiate Marvell's solutions across enterprise, cloud, and AI sectors. Our team focuses on high-speed interfaces and analog blocks, including SERDES and D2D, utilizing advanced technologies down to 2nm.

ROLE DESCRIPTION

- Successfully complete training with mentorship on developing foundation in understanding of analog design
- Design and layout analog circuits, including silicon evaluation and characterization.
- Collaborate closely with layout designers to assist with floor planning, routing, and special analog requirements.
- Support circuit behavior analysis and mixed-mode simulations
- Close engagement with teams in US and Asia will be required.

KEY SKILLS & REQUIREMENTS

- Minimum 3rd year of a Bachelor degree in EE, CE, or related field.
- Strong background and understanding of analog transistor-level design.
- Knowledge of semiconductor device physics and fabrication processes.
- Familiarity with basic analog building blocks and their functions (e.g., op-amps, LDOs, PLLs).

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ANALOG LAYOUT ENGINEER INTERN

WHAT & WHY?

Marvell's Central Engineering Team is seeking an analog layout design intern to support the development of analog IP products.

ROLE DESCRIPTION

- The successful candidate will be self-motivated, willing to learn exciting new technologies and be able to work effectively within a talented group of individuals up to 10+ years of experience.
- Support of layout implementation of analog integrated circuit (IC) designs.
- Projects can vary depends on product cycle and individual student interest.
- You will gain exposure to a variety of IC design engineering skills and tools during your internship.

KEY SKILLS & REQUIREMENTS

- Typically requires a Bachelor's degree in Electronic Engineering or Electrical Engineering, Mechatronics Engineering, Computer Science, or related fields, or the equivalent work experience that provides knowledge and exposure to theories, principles and concepts.
- Experience with tools like Cadence Virtuoso and Calibre DRC/LVS is beneficial.

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DESIGN VERIFICATION ENGINEER INTERN

WHAT & WHY?

In this position, you will work Design Verification (DV) team to implement scopes of Design Verification for the industry leading PHY chips

ROLE DESCRIPTION

- Apply theoretical knowledge to practical problems.
- Collaborate with team members on various projects.
- Assist in the verification of digital designs to ensure they meet specifications and requirements.
- Develop and execute test plans and test cases.
- Use simulation tools to verify the functionality of hardware designs.
- Collaborate with design engineers to identify and resolve issues.
- Document verification processes and results.
- Participate in team meetings and contribute ideas.

KEY SKILLS & REQUIREMENTS

Major: Computer Science, Electrical Engineering, or Electrical and Telecommunication Engineering.

Academic Year: 3rd or 4th year university students.

Skills:

- Strong proficiency in Mathematics.
- Good understanding of Digital Signal Processing.
- Basic knowledge of programming languages such as C/C++.
- Basic knowledge of hardware design languages such as Verilog, SystemVerilog, or VHDL.
- Familiarity with the Linux environment.
- Strong problem-solving skills.
- Excellent communication skills.
- Proficiency in English

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DFT ENGINEER INTERN

WHAT & WHY?

At Marvell, we take all responsibility for all project Tape Out, from gate netlist to GDSII.

ROLE DESCRIPTION

- To acquire basic DFT flow and be able to support basic DFT tasks
- Understand fully ASIC design flow and DFT in ASIC production
- Work with standard DFT flow for Scan and Memory BIST
- Support validating Marvell One Design Platform DFT flow on one major release with Regression Quality Assurance environment

KEY SKILLS & REQUIREMENTS

- In 3rd or 4th year of university program in Computer Science, Electrical Engineering or related fields, or the equivalent work experience that provides knowledge and exposure to theories, principles and concepts.
- Having basic knowledge of digital logic design, Verilog HDL and digital simulation tools.
- Detail oriented, self-motivated team worker, good verbal and written communication skills
- Good scripting/programming skill and familiar with Unix/Linux environment

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DIGITAL DESIGN ENGINEER INTERN

WHAT & WHY?

Marvell's Connectivity Business Group is the industry leading provider of AI infrastructure solutions to AI accelerators, Datacenter Interconnect, Enterprise, Service Providers, Small Business, and Digital Home Customers.

ROLE DESCRIPTION

- Defining Digital Design strategy for specific designs based on design specifications & standards
- Defining design solutions and design specification for specific designs
- Develop designs using Verilog, System Verilog.
- Work on ASIC design flows using RTL, SDC quality check, synthesis tools (Spyglass, Concert, DC etc)
- Work with Design Verification team to test the design including defining testcases, debugging issues.

KEY SKILLS & REQUIREMENTS

- BS/MS in Computer Science, Electrical Engineering or related fields, or the equivalent work experience that provides knowledge and exposure to theories, principles, and concepts.
- GPA: 8.0+, especially good in Math, Digital Signal Processing (DSP)
- Proficient in MATLAB
- Have basic knowledge of programing languages as C/C++, etc.
- Have basic knowledge of HW design languages as Verilog/System-Verilog/VHDL, etc.
- Have basic knowledge of Linux environment.
- Strong problem-solving skill
- Excellent communication skill
- Good in English skills

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EMULATION ENGINEER INTERN

WHAT & WHY?

As a hardware and silicon validation engineer at Marvell, you'll be helping to deliver high bandwidth over long distances. This team performs analog validations on amplifiers that drive optical electronic devices and receivers. We also validate silicon photonics, do upper electronic measurements and support the coherent digital signal programming unit. This is a niche area at Marvell, working with cutting edge technologies used by many internal and external customers around the world.

ROLE DESCRIPTION

- Working to verify functionality on Emulation-System of Marvell products.
- Research to understand standards and design specifications (verilog/system-verilog) to build test cases.
- Create documents using to test: test plans, test procedure, test methodologies to meet the requirements/standards.
- Automation/manual testing using Python/TCL/Bash.

KEY SKILLS & REQUIREMENTS

- BS/MS in Computer Science, Electrical Engineering or related fields, or the equivalent work experience that provides knowledge and exposure to theories, principles, and concepts.
- Knowledge Telecom, data transmission.
- Experienced in Testing Automation/ programming is plus.
- Knowledge in Verilog, System-verilog is plus.
- Experienced with Python, Bash, TCL, Git, Linux environment.
- Must have effective interpersonal, teamwork, communication skills and active at work.

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HARDWARE DESIGN ENGINEER INTERN

WHAT & WHY?

The Hardware team in the System Design Engineering Department of the Connectivity Business Unit develops evaluation boards and reference designs at data rates of 200G+/lane, for internal silicon evaluation and supporting customer designs of Marvell's high-speed PHY/retimer/DSP products. The team is responsible for signal and power integrity simulations, component selection, schematic and layout designs, exploration of advanced board and packaging technologies, and board bring-ups.

ROLE DESCRIPTION

- Currently enrolled student in Electrical Engineering or related fields with a bachelor's or master's degree.
- Fundamental knowledge of basic electronic concepts, circuit elements, high-speed analog and mixed circuit design, signal integrity, board layout, and lab equipment.
- Basic knowledge and experience on schematic capture tools.
- Understanding of IEEE 802.3 and optical module / AEC MSAs for datacenter applications.
- Good verbal and written communication skills.
- Self-motivated and team-oriented individual, willing to take ownership of project tasks and drive to completion.

KEY SKILLS & REQUIRMENTS

- Be part of a team in designing validation boards for product evaluation, together with silicon designers, validation engineers, and other hardware / software engineers.
- Experience a full hardware design cycle, from circuit development, board layout to platform evaluation to demonstrate Marvell's products for system applications.
- Receive training in signal integrity design and PCB layout for high-speed applications.
- Take individual tasks in hardware design projects, including circuit implementation, BOM selection, and layout consideration under supervision of senior engineers.
- Gain hands-on experience in lab equipment for board-level bring-ups and testing.
- Write technical reports and application notes.

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PHYSICAL DESIGN ENGINEER INTERN

WHAT & WHY?

As a member of Marvell central physical design team, your will participate in next-generation physical design implementation and verification activities of complex SOC designs.

ROLE DESCRIPTION

- Block-level layout implementation and timing closure.
- Static Timing/Crosstalk Analysis and timing closure
- Synthesis/Physical Synthesis
- Power/IR/EM analysis
- Physical verification (LVS/DRC/ERC)
- ECO implementation

KEY SKILLS & REQUIRMENTS

- Enrolled in Bachelor of EE, CE program within one year of graduation.
- Experience with scripting/programming using Tcl/Tk/Perl.
- Detail oriented, self-motivated team worker, good verbal and written communication skills.
- Previous experience on physical design and automatic place and route a plus. i.e. Knowledge of Synopsys/Magma/Cadence place and route tools.
- Previous experience on synthesis/STA a plus.

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SOFTWARE / FIRMWARE ENGINEER INTERN

WHAT & WHY?

The Ethernet PHY group at Marvell designs and develops high speed transceivers for computer and automotive networks. As a member of the PHY DSP firmware team the candidate will contribute to the development of firmware for an embedded processor in a high performance, mixed-signal DSP communication transceiver meeting automotive functional safety requirements.

ROLE DESCRIPTION

This position is responsible for developing and testing software components that are assigned to them by the project manager or his/her group/team leader.

Responsibilities include (but not limited to):

- Developer role on a project involving 1-3 other SW developers, driving all aspects of SW development.
- SW milestone planning, scheduling, conducting sprints, closing issues and squashing bugs.
- Architect and plan minor SW features, work with technical lead to fit each piece of the puzzle into the larger project.
- Work with cross-functional design team from analog design, digital design, system architects, validation, DV, SW QA, etc.
- Complete tasks within the time frame agreed with your project manager. Inform PM if tasks will take longer than planned or when task is completed ahead of schedule so new work can be assigned.
- Continue to expand technical skillsets, with guidance from technical leaders in the team.

KEY SKILLS & REQUIRMENTS

- Bachelor’s degree or in the years of 3 or final in Computer Science, Computer Engineering, Electrical Engineering or related fields..
- Strong scripting skills (python, C preferred)
- Familiar with gcc/clang, GNU make, Jenkins, git, Jira
- Fast learner and must be a self-starter.
- Excellent communication and written skills in English

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SYN/STA ENGINEER INTERN

WHAT & WHY?

Marvell is a leading provider of innovative storage technologies, including ultra-fast read channels, high-performance processors, leading edge transceivers, highly efficient analog designs, and powerful cryptographic engines. These solutions address all segments of the hard disk drive (HDD) and solid-state drive (SSD) electronics markets.

ROLE DESCRIPTION

- Understand the concepts of and flow of synthesis, equivalence check (LEC), static timing analysis (STA)
- Develop synthesis constraints, LEC, SDC
- Analyze synthesis results, timing check, LEC failure

KEY SKILLS & REQUIRMENTS

- BS/MS in Computer Science, Electrical Engineering or related fields.
- Knowledge of programing languages as C/C++, etc.
- Knowledge of HW design languages as Verilog/System-Verilog/VHDL, etc.
- Be familiar with scripting languages (TCL, Perl/Python)
- Knowledge of Linux environment.
- Strong problem-solving skill
- Excellent communication skill
- Good in English skills

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SYSTEM DESIGN VALIDATION ENGINEER INTERN

WHAT & WHY?

As an intern in the ODSP and PHY validation team, you will gain hands-on experience working with state-of-the-art instruments while validating and characterizing next-generation products. This role offers a unique opportunity to contribute to the development of advanced technologies shaping the future of connectivity.

ROLE DESCRIPTION

- Collaborate with senior engineers to gain knowledge about Ethernet transceivers and assist in preparing test plans and procedures.
- Execute tests and investigate root causes when issues found.
- Develop Python scripts to automate testing and control lab instruments.
- Operate state-of-the-art instruments in a lab environment.
- Perform data collection, analysis, and generate test reports.

KEY SKILLS & REQUIRMENTS

- Candidate must be currently pursuing Bachelor/master’s degree in computer science or electrical/Electronic Engineering fields.
- Knowledge of Python or C coding
- Knowledge of basic circuit theories
- Ability to collect, analyze and present data.
- Basic lab instruments knowledge, such as oscilloscope, DMM, RF Generator
- Good at English communication

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