

# NGUYEN THANH HAO

## VLSI & Digital Design Student

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### PROFESSIONAL SUMMARY

Second-year FPT Jetking student majoring in VLSI & Digital Design, with foundational RTL and digital verification training at ICTC. Experienced in ASIC and FPGA projects for IoT applications through intensive academic coursework. Currently transitioning from a background in management to engineering, demonstrating strong adaptability and technical aptitude. Passionate about RTL design and semiconductor development. **Seeking RTL Design Intern opportunities.**

### EDUCATION

#### FPT Jetking

2025 - Present

*Higher Diploma in VLSI & Digital Design*

- **GPA:** 94.2/100 (Excellent)
- **Focus:** RTL Design, Digital Verification, FPGA Implementation, Semiconductor Fundamentals.

#### ICTC

2025

*Fundamentals of IC Design and Verification*

- **Achievement:** Ranked EXCELLENT
- Specialized training in ASIC design flow and verification methodologies.

#### FPT University

2019 - 2023

*Bachelor of Hotel Management*

- GPA: 7.01/10
- *Note: Successfully pivoted career path to high-tech engineering through self-study and formal technical education.*

### TECHNICAL SKILLS

#### HDL & Programming

Verilog, SystemVerilog (Basic), RTL Design, Testbench Development

#### Design & Verification

Block & Logic Diagram Design, VPLAN Design, Simulation, Waveform Analysis

#### Tools & Platforms

Xilinx Vivado, Logic Analyzer, Linux (Basic), ThingsBoard

<b>Hardware/FPGA</b>	Zynq-7010, EBAZ4205, ESP32-S1, Arduino Uno, 8051 Microcontroller
<b>Protocols</b>	UART, I2C, APB, SPI
<b>Languages</b>	English (IELTS 5.0 - Technical Reading/Writing), Vietnamese (Native)

## ACADEMIC PROJECTS & COURSEWORK

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*Hands-on technical projects completed during training at FPT Jetking and ICTC.*

### Multi-Protocol Implementation on FPGA

Academic Project

- Designed and implemented standard communication protocols (**UART, I2C, APB, SPI**) using Verilog HDL.
- Deployed designs onto target FPGA platforms (EBAZ4205, Zynq-7010) and microcontrollers.
- Created comprehensive testbenches to verify protocol compliance and edge cases.
- Analyzed and debugged logic utilizing both simulation tools and real-time hardware Logic Analyzers.

### Digital Design & Verification Coursework

Coursework

- Developed detailed block and logic diagrams for various digital modules to ensure design feasibility.
- Prepared Verification Plans (VPLAN) and executed RTL verification procedures.
- Utilized simulation waveforms to identify timing violations and logic errors.

### IoT Applications with FPGA Integration

Academic Project

- Implemented IoT sensor interfaces using low-level hardware protocols on FPGA and ESP32 platforms.
- Integrated hardware data streams with **ThingsBoard** for real-time data visualization.
- Gained hands-on experience in cross-domain debugging (Hardware vs. Software).

## ADDITIONAL INFORMATION

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- **Certifications:** Fundamentals of IC Design and Verification (ICTC) - Rated Excellent.
- **Soft Skills:** Strong adaptability (proven by successful career transition), logical thinking, detail-oriented.
- **Availability:** Available immediately for full-time internship positions.