Electrical Engineering and Computer Sciences

January 8, 2025

RE: FNU Pratibha

To Whom It May Concern,

It is with great pleasure that I write this letter of recommendation for Ms. Pratibha, I first met her in my capacity as her academic advisor at Florida Institute of Technology (Florida Tech) where she was pursuing an M.Sc. in Computer Engineering. I have come to know her as a talented, dedicated, and hard-working student with a promising professional future. I am happy to recommend her for this opportunity at your company/institution.

Pratibha has developed a strong technical foundation that bridges hardware and software engineering principles, with expertise in FPGA development, embedded systems, quantum computing applications, and AI model acceleration. She is experienced in Field-Programmable Gate Array (FPGA) hardware design flows and digital circuit implementations, with particular strength in optimizing machine learning workloads. Her proficiencies include RTL design with hardware description languages (VHDL/Verilog), high-level synthesis using C/C++, and deep learning frameworks. She has demonstrated proficiency using AMD Xilinx tools such as Vivado and Vitis HLS, applying these skills to implement efficient AI model architectures. As part of her M.Sc. thesis, she has developed a framework to accelerate hybrid quantum-classical algorithms using FPGAs, with significant focus on model optimization and quantization techniques. One of her notable achievements in her research was accelerating a quantum convolution task using FPGAs, obtaining up to 100x average speedup w.r.t. a state-of-the-art software solution, while maintaining model accuracy through careful optimization. She has also worked extensively with various microcontrollers and ARM-based systems, implementing hardware protocols such as UART, I2C, SPI, CAN, and PCIe, with experience in deploying on embedded platforms. Pratibha is familiar with custom board development and system optimization, and one of her notable achievements was to develop the real-time firmware for a home automation project that incorporated efficient model inference, bringing about 25% improvement in power consumption through innovative hardware-software co-design approaches.

As an individual, Pratibha has a professional attitude and intuitive nature. During discussions, she always provides valuable insights and ideas. She has demonstrated the ability to grasp new concepts and skills with ease and is capable of articulating her thoughts with lucidity. She is hard-working and usually has an intelligent approach in solving a given problem. She has also demonstrated the qualities of a good team-player with high ethics. I am delighted to have her as my student, and I am confident she would be of great value and contribution to your institution/company when given the opportunity. Please let me know if you have any further questions regarding Pratibha.

Sincerely,

N. Mahmud

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