

Feb 15, 2026

To whom it may concern:

This letter of reference is in support of Achal Patel, whom I have known for approximately 9 months, as supervisor of a summer research internship in my laboratory and as the professor of a multidisciplinary Capstone project course he is currently completing. Achal's initiative and technical skills in robotics and machine learning/AI easily eclipse those of just about any undergraduate student I have met and even surpass those of many successful graduate students.

During the summer research project in my lab, Achal very rapidly learned a great deal of new and complex material and successfully overcame major technical endeavors, implementing a real-time position estimation system, teleoperation package, and simulation for a novel 16-DOF mobile hybrid wheel-leg robot we developed. The position estimation system is of top quality and is now actively in use by a PhD student of mine for their research; Achal will be included as co-author in a forthcoming journal publication. Achal interfaced a ZED stereo camera with the robot's onboard Jetson AGX to wirelessly provide high-frequency displacement data for closed-loop feedback, even though the Jetson was deprecated for ROS2 and thus required a custom Docker container. For the simulation, Achal implemented virtual CAN communication for motor drivers in Gazebo and set up joint trajectory planning using MoveIt2, which required building a detailed understanding of a large and initially unfamiliar codebase within a short extent of time.

Within the context of a multidisciplinary Capstone project, Achal has demonstrated leadership and initiative alongside additional technical abilities. The project is implementing imitation learning for mobile bimanual manipulation robots, applied to both a custom robot developed in-house by Achal's team and an advanced Kinova MOVO platform at the McGill Mobile Robotics Lab (in a partnership set up independently by the team). Achal is the team lead, and the project is among the most impressive I have seen in my multiple years as instructor of the course. Achal and the team are implementing state-of-the-art techniques including multimodal Vision Language Action (VLA), transformers, and diffusion, concepts that go well beyond what is currently offered in our undergraduate curriculum. Achal led the team through a successful submission to Concordia's Gina Cody School of Engineering and Computer Science Innovation Fund, earning \$10,000 in funding in the highly competitive process.

I strongly recommend Achal Patel without any hesitation for any position related to robotics, machine learning, or AI. His advanced technical skills and leadership and teamwork qualities would make him an invaluable member of any team working in this field.

Best regards,



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