

Sebastian Baldini

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To whom it may concern,

I am excited to apply for the summer 2025-2026 Intern position at BETA. I am interested in this position because my experience through my Senior Capstone Project, or MQP as it is called at WPI, has driven me to learn more about the field of aerial robotics, in the form of both fixed-wing and quad-copter autonomous drones. I am a Robotics Engineering Undergraduate and Graduate Student from Worcester Polytechnic Institute who will be graduating with my Bachelor in the May 2025 and Masters in December 2026.

I believe I would be a good fit for this specific position as I possess a unique mix of project work, research work, and class experience that would make me an invaluable asset to the BETA team. To support this I have experience with aerial systems with my MQP, WPI's equivalent for a senior project, which aims to design and program a drone to intercept a projectile that we launch at it. I am leading the code development for this project to create a system to estimate the balls' future path and generate a trajectory that the drone can use to intercept it at full speed using industry-standard control algorithms. Additionally, I have 2 years of lab research experience at WPI. This year I have been working in the WPI Soft Robotics Lab to develop custom encoding solutions made up entirely of flexible TPU filaments. This novel technique will allow for direct integration into the body of robots that can be shaped and formed into unique sensor shapes that cannot be done with traditional sensors. Finally, my unique class experience, being a Robotics Engineering major gives me very different perspective and skillset than what is available to many other majors. Robotics has given me a more versatile mix of experience in mechanical, electrical, and computer science experience along with experience in hardware and software integration which are all subjects and skills that many other students are not able to get in their undergraduate degrees. Additionally, through class and pushing myself to start my masters in my senior year I have been able to explore even more advanced subjects including advanced computer vision, robot dynamics, and multi-robot systems.

Outside of my classes and projects at WPI, I have gained excellent work experience during my internship at Sig Sauer this past summer, leadership experience as an RA for WPI's precollegiate program, and management experience through the planning of WPI's Merit Badge University event. My internship at Sig, as a Remote Weapon Systems Intern, gave me great experience in mechanical design for parts that will be exposed to extreme forces and rough environments. Additionally, it provided me software development experience as I worked on custom computer vision tools to be used by their testing and evaluation division on high-speed video.

I firmly believe these experiences have equipped me to be an excellent fit for this position and would love the opportunity to further discuss what I can bring to the role. Thank you for your time and consideration. I look forward to speaking with you in the near future.

Sincerely,

Sebastian Baldini