

Sebastian Baldini

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To Whom It May Concern,

I am interested in applying for the Electrical Engineering Internship at BAE as my mix of undergraduate and graduate robotics courses along with experience with electrical engineering through a greater focus on digital circuitry and sensors and mechanical engineering through my work in robotic design and internship at Sig Sauer make me a good fit for this position. I am currently a senior Robotics Engineering major at Worcester Polytechnic Institute and will be graduating with my Bachelors degree in May of 2025 followed by masters in December of 2026.

I have had various experiences with microcontrollers and digital circuitry through robotics and electrical engineering courses. My robotics courses have had me hands on with a variety of different systems and working to integrate them with larger mechanical system. These courses have also had me integrate a variety of different sensors into the control for autonomous robotic systems. I have also taken an extended course load that involved more in depth understanding of electrical circuit design, which I have put to use in my research project in the Soft Robotics Lab at WPI. Outside of my course load I have worked on smaller projects including designing a brushless DC motor controller with an Arduino nano and designing a custom face tracking camera system, utilizing communication between multiple microcontrollers to process camera output for stepper motor controls.

I have additional controls experience through my current senior project which has had me programming a drone to autonomously intercept projectiles out of the air. This has had me get involved with writing code to integrate with a real-time operating system, ROS 2, to get sensor readings, determine and verify trajectories for the drone, then apply an aerial velocity-based control algorithm to have the drone adhere to the path I have calculated. This has been a project which I have learned much from and I feel is most applicable to the type of work that would be applicable to this position.

Beyond this I also have mechanical design experience through projects, course work, and work experience. I have gotten a Solidworks Associate certification through my courses and within them have developed an in depth understanding of design within Solidworks and similar CAD software. I have also explored designing parts for high forces and rough environments as the Remote Weapon Systems Intern at Sig Sauer last summer.

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