

# Sebastian Baldini

sebastian.baldini@outlook.com | sebastianbaldini.com | 603-321-1577

To Whom It May Concern,

I am interested in applying for the Customer Success Development Program at Cognex as the mix of computer science, mechanical engineering and computer vision I have learned over my undergraduate and graduate courses along with my work experience makes me a good fit for this role. I am currently a senior Robotics Engineering major at Worcester Polytechnic Institute and will be graduating with my Bachelor's degree in May of 2025 followed by Masters in December of 2026.

I have a great deal of experience with computer vision from courses, at both a graduate and undergraduate level, in a professional work environment, and through personal projects. My courses load has had me working with robotic arms and integrating them with computer vision for manipulation and categorization of object within the workspace. My graduate computer vision course also got me hands on with the programming of custom filters and tools such as panoramic stitching of images.

Additionally, while working at Sig Sauer last summer I worked on a custom software tool to perform point tracking of their products. I designed this software to replace the current software that was in use, provided by Phantom Cameras, as that tool struggled to track their points and provided data in integers, without any ability to provide any sub-pixel estimates. My tool was able to provide sub-pixel estimates using a mix of optical flow tracking and k-means data centralization, resulting in an overall all improved data output, while outputting the data in the same format.

Finally, through my personal projects I have worked with a variety of object detection models such as Haar Casades and versions of the YOLO object detection architecture which I trained myself. I used these models for personal projects that involved integration with motors and microcontrollers to pan and tilt a camera to follow its user as they move throughout a room.

Beyond my computer vision experience I have experience in Research and Development positions which have involved mechanical design and integration with microcontrollers. I have worked in robotics research labs for the last 2 academic years where I have done research into the application of novel materials in soft robotics. I have been working with conductive TPU filaments in multi-material FDM 3d printing to develop custom sensor in robotic bodies. This work have given be a great deal of mechanical design experience along with experience in doing research into new published research and developing my understanding of new subjects and how I can apply them to my current work. Also while I worked at Sig Sauer, before beginning my software development, I worked with their R&D team to do mechanical and electrical design for their systems.

I feel that this mix of experience makes me a good fit for this position, and I hope to hear from you soon regarding this opportunity

Sincerely,

Sebastian Baldini