Jacob Knaup

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January 20, 2018

1400 South Carolina 101,

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Dear Hiring Professionals:

I am a Robotics Engineering student at Arizona State University interested in designing and programming robotic systems, especially those utilized by the manufacturing industry. As such, I am particularly interested in working for your automotive manufacturing team to develop controls solutions for your assembly lines. My diverse experience modeling robotic systems, communicating with teams and individuals both verbally and in writing, and programming embedded systems will make me a valuable addition to your team. I am eager to gain more experience developing solutions with BMW Manufacturing to solve the toughest challenges relating controls engineering and look forward to speaking with you about your internship opening.

I have a passion for learning about robotic systems and it has become the main focus of my ongoing academic work. In my favorite class last semester, I learned to model the forward and inverse kinematics of robotic manipulators using the Denavit-Hartenberg method. I derived the homogenous transformation matrices for a variety of manipulators and used inverse kinematics to develop a control algorithm to move a manipulator’s end-effector to specified coordinates in the manipulator’s base frame. I then tested and debugged the controls for the manipulator in order to improve accuracy and repeatability. This semester, I am currently learning about the Jacobian matrix and how it can be used for motion control and path planning. I am excited to apply this knowledge and continue learning about robotics controls in the manufacturing industry.

I have unique experience communicating in an academic environment uncommon for engineering students. I work as a Supplemental Instruction (SI) Leader for ASU’s University Academic Success Programs and as a writing tutor as a member of the Honors Writing Colloquium. As a SI leader, my job is to lead regular calculus review sessions. This entails explaining mathematical concepts and walking students through the processes for solving calculus problems. As a writing tutor, I help students to improve the arguments, content, and organization of their course papers. Both positions require clear communication in a variety of settings and provide a regular opportunity to further develop my skills.

I am available starting the second week of May through the third week of August this summer. I am happy to relocate to Spartanburg, SC for the summer. Early afternoons Monday through Friday are the best times to contact me. Thank you for your consideration.

Sincerely,

Jacob Knaup