Dear Hiring Manager,

Currently, I am a PhD candidate in ME department at The University of Texas at Austin. I am eagerly interested in obtaining a full-time position of Engineering Summer 2015-Product Development at Caterpillar. The enclosed resume details my academic qualifications and professional experiences.

While I have comprehensive Mechanical Engineering background, my focus is on system modeling, simulation and control. I have been working on simulation and control design of wind turbine systems since September 2013. As a result, I developed a dynamic programming-based algorithm and an adaptive real-time controller that addressed modeling uncertainties and improved the energy efficiency and the useful life of the system. Besides, I added battery storage system to wind turbine and proposed an innovative control of the hybrid system that maximized the profits of wind farm owners. My research findings are published on IEEE/ ASME conferences and journals. I also have research experiences related to motor operation optimization, adaptive cruise control etc.

In addition to my research experiences, I have also taken advantage of diverse graduate courses to broaden and deepen my knowledge. This includes control theories ranging from linear quadratic regulator to robust control as well as data analysis such as regression model and ARIMA probabilistic prediction. Besides, I am proficient in programming languages such as Matlab, C# and C++. I have been a teaching assistant for an undergraduate Matlab and C++ course for 3 semesters. My research experiences, academic background and skills have given me confidence to be well qualified for the position.

I am impressed by the reputation of Caterpillar and would appreciate an opportunity to meet with you and discuss how my background can match the requirements of the position. Please let me know if you have any question or want to see some work samples. I may be reached at 512-8658134 or [zhrm@utexas.edu](mailto:zhrm@utexas.edu). Thanks a lot for your time and consideration.

Sincerely,

Zheren Ma