3M
3M Center
Saint Paul, MN 55144-1000

October 27, 2017

To Whom It May Concern,

Please find my attached application for the open "Process Data Scientist" position at 3M. I expect to graduate with a Ph.D in Materials Science and Engineering in the summer of 2018, having worked with Prof. Russell J. Holmes at the University of Minnesota (UMN). While working on my Ph.D, I have had the privilege of touring the 3M campus and giving a poster presentation in the 3M Innovation Center, as well as attending informational sessions about 3M on the UMN campus. I have been very impressed with the spirit of collaborative innovation that 3M fosters and am excited for the opportunity to join this team. During my PhD, I have acquired a unique skill set for developing measurement equipment and integrating them with data collection systems, as well as using data science techniques to realize the full potential of experimental data. My background in data science and experimental research has given me a breadth of experience that I am confident I would be a good fit for this position.

My graduate work has focused on the characterization and optimization of Organic Light-Emitting Devices (OLEDs). This has involved designing and creating novel measurement equipment to characterize device performance over multiple time scales. Given my bachelors degree in computer science and interest in data science, I knew how valuable organizing the collected data could be. Therefore, when building the data collection software, I implemented data collection into a central research database, which stores experimental details as well as measurement data. This database system conducts all data analysis and allows for easy querying. With this data collection system highly integrated into our measurement equipment, data analysis in our group has changed dramatically. This system has allowed rapid comparison of experiments and enables seamless data mining of experimental results. We are now able to look at much larger trends in our experiments, including all data collected for several years, rather than a few individual experiments. In my work, I have developed a highly multiplexed OLED lifetime measurement setup. Using data science and statistical techniques, I have been able to diagnose instabilities within individual channels that are hard to observe within run-to-run variation, increasing reliability of our testing system.

My background as an experimental researcher gives me a unique perspective to bring to this position. I have worked with a team of fellow scientists and engineers to design and create measurement and data acquisition systems. Additionally, I have experience with using data science techniques to provide information that enhances experimental techniques. As an experimental scientist with significant experience in lab science as well as data science, I bring a unique multifaceted perspective and passion that would be very valuable in this position.

I would be extremely enthusiastic about having the opportunity to work in the 3M environment. I look forward to speaking with you more about how I could contribute to 3M. Please contact me if you have any questions.

Sincerely,

Kyle W Hershey

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