

Dear Dr. Bert de Vries,

I am writing to apply for the position of PhD student on probabilistic programming for machine learning. I'm currently working as a senior data scientist in Trend Micro, which is a global well-known cyber security company. In my previous working experience, machine learning and probabilistic programming is a common method used to solve the quality issues with wafer manufacturing. However, it is not easy to get the results we want from those analytic methodologies. As an enthusiastic engineer, I've decided to make machine learning researcher as my next career goal.

During my professional career, I worked as a data scientist and data engineer in the world's most admired wafer manufacturing company, Taiwan Semiconductor Manufacturing Company (TSMC). When I was working in the department of Computer Intelligent Manufacturing (CIM), I had built a big data solution to process 6 billion data records per day, from which I designed multiple systems to detect the significant changes in the processes. Also, I cooperate with Engineering Department and Quality Control Department in a critical project which increased 4% production capacity on wafer fabrication.

While working on the yield improvement project, I noticed that utilizing statistics and machine learning to automatically discover the small changes in the processes is challenging maneuver, and this is what motivated me to go deeper in the probabilistic machine learning field for my future career. For example, the traditional statistics cannot address the problem with such high volume of data with complex structure. In contrast, using an intelligent agent developed by your lab can be helpful to carry out the correct results.

I believe that I am well-qualified to meet your requirement based on my academic research, teaching and software engineering experience. Apart from works, I have made it a habit to teach people using R to vectorize code, manipulate data in an efficient way, and overcome performance issues with C++ in my workplace, my blogger and online programming communities. Also, I am the administrator of the biggest R programming community in Taiwan established to teach people write descent and performant R codes. On the other hand, I devote myself to develop several R packages for functional purposes and data analysis.

I believe my versatility, quick learning, and adapting abilities would make me a great candidate.

Thank you for considering my application.

Sincerely,

Ching-Chuan (Jamal) Chen