

I am a PhD student in Computer Science at Georgetown University, and I am highly interested in your Software Engineer Intern - Corporate Architecture position. I am attracted to the potential and opportunities offered by the position, as well as the challenging yet creative environment at Oracle. I believe there is a match between the requirements and my qualifications, which motivates me to apply for the position.

My current research topic is distributed algorithms, specifically, resilient distributed optimization algorithms, including fault-tolerant and asynchrony in the distributed system. For example, machine learning is usually an optimization problem. Imagine a system solving machine learning tasks involving multiple computers working collaboratively, and some of the participants might be faulty, caused by system failure or adversary attacks. I am working on designing resilient algorithms against these faulty participants so that they can still output usable outcomes, and showing how resilient the algorithms can be. As cloud computing becoming increasingly popular these days, this topic is gaining interest and attention from researchers. Research in this line of work involves mathematical analysis of algorithms and simulations of the algorithms with Python.

My other research experience of mine is my graduate thesis on social media privacy. I studied a type of privacy breach on social media websites, where an attacker could discover a user's hidden information through public information of the users that he/she is connected to. We discovered that it is possible to breach users' privacy on social media in this way. This research involved data collection, data mining, analysis, and creating a demo website for users to check their possible social media privacy issues. It is a part of a larger project in the lab and we used Python, Java, PHP, and other coding languages in the whole project.

In addition, I have previous working experiences that have introduced me to industrial standard software engineering and polished my communication skills. My internship last year at Meta as a software engineer was a task on creating an intermediate verification step of transfer learning in the machine learning workflow as an internal tool. The verification step is conducted in parallel with resource allocation for the actual job, such that early detection of input errors can save time for users. I was required to read and understand the related codebase, and design and implement the new step from scratch in Python. It also involved communicating and coordinating with multiple coworkers in different groups who owned the code related to this task. In this internship, I learned how to effectively work together with others, as well as what industrial jobs look like.

I am interested in software engineer intern opportunities in general, with interests in machine learning, distributed optimization, data analysis, data privacy and security, based on my previous experiences and coursework.

My training and experience during my pursuit of graduate degrees and communication skill training from my working experience allow me to positively contribute to the position. Thank you in advance for your consideration of my application. I look forward to hearing from you soon and I would appreciate an opportunity for an interview.