Cover Letter

Dear Hiring Manager:

I am Songlin, a final-year undergraduate student with a CGPA of 3.75, and also an incoming Master of Philosophy (MPhil) student majoring in Computer Science at the University of Hong Kong. I am more than excited to express my interest in the **Computer Vision Engineering & Research Intern** at Apple Beijing, and I'll be available in Beijing from now to August. I believe my in-depth expertise of Computer Vision and Machine Learning, along with my strong passion for building extraordinary products, has laid me a solid foundation for this position.

On May 23, this Tuesday, I was so proud to be the very first undergraduate to give a **Young Scholar TechTalk**, a series of forum and dialogues hosted by HKU for PhDs and professors to general public. In this talk, I, along with my colleague, presented the HOF2, a **computer-vision based human-comptuer interaction (HCI) project**. In this project, we question whether it's possible for us to operate mobile devices just as naturally as how we control our fingers or body. Our answer is the HOF2, a novel input modality that use simple gestures over your face to interact with your device such as the following figure. Unlike other gesture-based modality, HOF2 is highly robust and can avoid false triggering by unconscious gestures like scratching, while is still comfortable to perform. Moreover, HOF2 is highly available, and the computer vision approach can be implemented on any phone / tablet / computer / TV with single camera. We also present a real-time demo on iOS / iPadOS / macOS by CoreML and even on browser by Tensorflow.js, as the proof of concept. In this demo, we explore many interesting use cases such as virtual conference, selfie, TV controller and we believe more possiblility is waiting to be explored. Furthermore, this demo puts the user privacy first and all the inference are on-device without privacy leakage. The web demo is at https://hof2.framer.website and iOs demo will be available on App Store soon.

And we found people love HOF2. Following the HCI manner, we conducted a user studies with volunteers from different age and gender. We found HOF2 could significantly reduce the workload and received positive feedbacks on usability.

From this project, I developed in-depth expertise in Video Understanding and Computer Vision, strong prototyping and programming skills, and gained experience in developing algorithms for resource-constrained platforms. Beyond technology, I developed a product-focused mindset that not just delivers models but an end-to-end technical solutions with a high standards of quality, user experience, and respect for user privacy, which perfectly aligned with the Apple's value.

Moreover, last summer, I interned as a Machine Learning Platform Architect at NVIDIA, where I worked with a fast-paced global team on the design, implementation, and maintenance of the end-to-end Machine Learning as a Service (MLaaS) platform for scalability, performance, and reliability. I led the project on integrating Explainable AI to improve the transparency of ML models. From this experience, I gained experience in industry-level machine learning pipelines and experience working in a fast-paced team with products as the primary goal while exploring innovative ideas to improve customer experience. I also developed software engineering fundamentals, excellent programming and prototyping skills, and collaborative skills.

I hope you will be persuaded by my strong passion for building extraordinary products and my solid basis in computer vision and machine learning. I am looking forward to the opportunity to express myself and present you the HOF2 demo in interviews. Thank you very much for your consideration.

Best regards,

Huang Songlin