Hugo Lam – Sr. Director of Bioinformatics

With the rapid advance in sequencing technologies, biological data are being generated at an unprecedented rate. Since 2008, the amount of genomic data has been doubling in size every year. A full operating sequencing cluster is generating over 6 petabytes of data over 3 years, which is equivalent to over 70,000 whole genomes sequenced at 30X. So how large is the data? Six hundred times larger than the data generated by the same amount of users over 3 years on YouTube at their current upload rate. Yes, we are talking about exabytes (1018) of raw, unprocessed, and raw sequence data in a few years.

To tackle this big data challenge requires considerable software engineering skills. I had worked in software engineering for 5 years before I decided to pursue my Ph.D. in Computational Biology and Bioinformatics at Yale. Later in my post-doctoral studies I was lucky enough to have had a chance to work at the biggest genomic lab at Stanford. What I can say with my experience is that if data are being generated at this unprecedented rate, the genomics field is not really ready to handle the information. We need a robust, scalable, and accurate computing platform that can manage and analyze data efficiently.

There are two drivers that can achieve this – excellent scientific research as well as cutting-edge software engineering. My interest is in both, but my priority is on improving the accuracy of bioinformatics tools and developing advanced algorithms. In a perfect environment, I could partner with a top-notch engineering team that shares my passion for high performance software and improving healthcare. I'm very glad to have found that balance at Bina.

Bina has a perfect Silicon Valley culture for you to grow and to develop your career. We not only advance science but also apply high tech to science to ultimately improve healthcare through personalized medicine, where we produce sophisticated algorithms, an enormous amount of research, and state-of-the-art computing infrastructure. At Bina, we strongly encourage innovations and communications. We also believe that sharing knowledge is an important way to contribute back to the scientific community. It is part of our corporate culture to publish, be peer-reviewed, and create open-source software. That's who we are.