January 27, 2012

Dear Chairperson of the Recruitment Committee,

I understand that Dr. Kenneth Wai-Ting Leung has applied for a teaching/research position in your department. As Dr. Leung’s former Ph.D. advisor and his close research collaborator, I am very happy to write this reference letter to extend my strongest support to him.

I was a faculty member for nine years at the Department of Computer Science and Engineering, Ohio State University, USA. In 1994, I joined Hong Kong University of Science and Technology (HKUST). I have evaluated many faculty applicants and tenure cases at both OSU and HKUST. In this letter, I am evaluating Kenneth's research against the international standard.

Kenneth's general research area is search engine and information retrieval. In particular, his Ph.D. research focuses on personalization in search engines for both web-based and mobile search. This area has been, and will remain to be, one of the hottest research areas in academia and industry.

Kenneth’s research is unique. Personalization for search engines is a practical problem, as is evident from its deployment as a regular feature in Google about a couple of years ago. Thus, it is mandatory for Kenneth to implement his ideas in prototypes (not just simulation or emulation) and compare the performance (in terms of search quality) against Google and other established baselines. In addition, he has to come up with realistic examples to justify his works, conduct experiments using real users, and demonstrate the practicality with prototypes. As you can observe from his CV, his research results have been published in IEEE TKDE, ACM TOIT, SIGIR and ICDE, all of them are top venues for database research. In addition to publications, the impacts of his work are demonstrated via extensive experimental results and functional prototypes.

Kenneth started his research by investigating personalization methods for web-based search engines. He proposed to extract and represent users’ concept preferences, as opposed to page preferences employed in previous research, and use the preferences to train the ranking function to produce personalized results for the users. His approach resolved the sparsity problem of clickthrough data (i.e., the number of clicks on results compared to the number of pages retrieved by a search engine is too small to achieve effective personalization) and made significant improvement on the effectiveness of personalized search. I believe this idea will have long-lasting impact in the research field.

He then went beyond the traditional web search to study personalization methods for mobile search. In particular, he developed methods to extract content and location preferences of the users and to combine these two types of preferences for effective personalization. This work was presented in his ICDE 2010 paper. The work was extended to include privacy, an important aspect of mobile applications, and users’ physical movements in personalization. Kenneth’s work combines users’ physical movements and their content and location preferences captured through online activities. I believe the idea has opened up a new direction for personalized search and will make a significant impact on the research field.

One of the problems that Kenneth is working on is community-based, collaborative search personalization. The idea is to obtain user clusters within which search recommendations can be shared. While previous works identified user clusters based on users’ common interests, Kenneth’s work goes one important step further to delineate user groups whose recommendations can improve the precision of the submitted query, or improve the recall, or lead the user to different semantic interpretations of the query. He has also extended the idea to mobile search for identifying users’ tasks and activities from their GPS locations. Overall, the research area is very new and calls for unique solutions. Kenneth’s work in this area has a great potential in the research field.
The research I mentioned above has been implemented in prototypes, including a web-based system implementing concept-based and community-based personalization and an Android-based system implementing privacy and location-based personalization.

Kenneth is a diligent and intelligent researcher. He is very quick in understanding research problems and developing solutions drawing ideas across other research areas. Besides research, Kenneth is a very good team member and collaborator. In the past three years, he had helped me in supervising dozens of undergraduate students who were doing final-year projects (2 semesters for each project) with me. Kenneth carried out the supervision diligently and enthusiastically, meeting with them, providing ideas, and monitoring their progress on a weekly basis. Indeed, a couple of workshop papers on his CV were based on those projects. I want to emphasize that Kenneth is an effective supervisor. He not only was willing to do the supervision but did it very well. This is a very unique aspect that I don’t observe very often in my other students. This is a great asset for Kenneth to succeed in academia.

Regarding his teaching ability, Kenneth worked as my TA in both undergraduate and graduate courses, and made numerous presentations in research group meetings. He makes clear and well-prepared presentations and is very responsible in carrying out him TA work. He communicates very well in English (English is the instructional language at HKUST, and he did his undergraduate at University of British Columbia, Canada).

After his Ph.D., Kenneth was hired as my postdoc for 5 months and was then appointed a Visiting Assistant Professor in our department. He is ready to accept the challenges of an academic career, and I strongly believe he will succeed in this venture.

With his nice personality and demonstrated research excellence, I am confident that he will be an effective teacher and will contribute to the teaching and research programs in your department. If opportunity allows, I definitely would look forward to his continuous involvement in my research projects.

If you have any questions, please don't hesitate to contact me.

Sincerely,

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