



Professor Dawn Song
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Dear Search Committee,

It is with great enthusiasm that I write this letter to recommend Kaihua Qin for the faculty position at your esteemed institution. As a professor at the University of California, Berkeley, I have had the pleasure of working closely with Kaihua for over three years, during which we have collaborated on several research papers and I have supervised his internship here at UC Berkeley.

Kaihua is an exceptional scholar with an impressive depth of expertise in blockchain and decentralized finance (DeFi) security. His unwavering dedication to advancing this field is evident in his outstanding publication record, which features contributions to top-tier venues in our domain. Blockchain technology plays a pivotal role in transforming various sectors through enhanced security, open access, and transparency. Kaihua's timely and essential research contributes significantly to these advancements, underscoring the importance of his work in driving technological progress.

A prime example of Kaihua's innovative approach is our collaborative project, "The Blockchain Imitation Game." This groundbreaking work introduced the first generalized solution for imitating blockchain transactions through dynamic taint analysis, significantly advancing blockchain security by offering a real-time method to prevent smart contract hacks. It was the first instance of applying dynamic program analysis to automatically synthesize smart contracts and transactions in real-time, showcasing Kaihua's exceptional technical acumen. Building upon this foundation, during Kaihua's internship with my group, we developed a fine-grained data-flow tracking engine for the Ethereum virtual machine, which is the most widely used virtual machine for blockchains. This data-flow tracking engine is an important tool for both academia and industry, as it enables efficient smart contract security analysis, further illustrating Kaihua's capability to lead and innovate in technical research. Kaihua is now also actively applying AI techniques to his research, an approach that shows great promise for further enhancing blockchain security and analytics.

In addition to his research excellence, Kaihua has demonstrated remarkable teaching abilities as a teaching assistant for the DeFi MOOC that I led. His depth of knowledge, commitment to student learning, and methodical approach to structuring course materials and assignments were highly appreciated by both students and faculty. His contributions were instrumental in enhancing the learning experience, demonstrating his ability to translate complex concepts into accessible and engaging content.

Kaihua's engagement in the academic community extends beyond teaching and research; he co-chaired the ACM CCS DeFi Workshop, an initiative I oversee as part of the steering committee. His leadership in organizing this workshop highlighted his exceptional organizational skills, extensive professional network, and dedication to fostering a collaborative and inclusive academic environment.

Kaihua's unique blend of technical expertise, teaching competence, and leadership qualities make him an ideal candidate for a faculty position. His passion for research, coupled with his commitment to education and community engagement, aligns perfectly with the values and goals of a thriving academic institution.

I am confident that Kaihua will make significant contributions to your institution, advancing both its research initiatives and educational mission. I am eager to witness the impact Kaihua will undoubtedly make in his future academic endeavors and strongly endorse his application without reservation. He has my highest recommendation.

Sincerely,

A handwritten signature in black ink, appearing to read 'Dawn Song', with a stylized, flowing script.

Dawn Song
Professor
Computer Science Division
University of California, Berkeley