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COSE Scholarships for the Academic year 2012/2013
Letter of Motivation

As an incoming student to the MA program in the Math Department, my attention was drawn to the COSE scholarships. I will be graduating SFSU with a BA in philosophy and a minor in mathematics at the end of this semester. I have had the opportunity to broadly survey both disciplines as well as pursue in depth studies of several fields. As a philosophy student, my main interest was epistemology and the philosophy of science and mathematics. It was as a student of logic at the university of Paris that I came to realize my own aptitude and interest in studying mathematics as a scientist, in addition to the historical and philosophical approaches.

The highly interdisciplinary nature of contemporary mathematical research means every scientist must be able to deftly navigate the epistemological uncertainties that arise at the intersections of disciplines. My training in philosophy, I believe, makes me especially sensitive to the responsibility of mathematics to managing the structural aspect of scientific knowledge and assuring the legitimacy of deductive reasoning, the lingua franca of science. More than anything, scientific research is becoming a social activity. For a young scientist establishing a place in the community is as important as completing the required curriculum. The scholarship would allow me to avoid having to spend the majority of time outside of class working at a job, time that could otherwise be spent on mathematical study within the community of professors and students in the department. Additionally, besides the obvious benefits of the financial award, winning a scholarship will increase my visibility and credibility as an academic at a crucial stage in my career. Long after the money is gone, a significant academic recognition such as this will still be opening opportunities for me.

As my ultimate goal is a PhD, I will be doing the thesis option for my MA. While it is still too early to definitively declare my topic, there are many interests I hope to explore during the master, including mathematical logic, Galois theory and related topics in combinatorics and algebra, and statistical analysis with applications to computer science and the social sciences. Additionally I hope to continue studying higher level programming languages as both tools for mathematical research and subjects in themselves. I have applied to an NSF funded summer school on Number Theory where, if accepted, I hope to study computational and algebraic number theory, gaining a head start on refining my research interests. In addition to this, I have been hired as a research assistant by Dr. Shidong Li to work on wavelets and frame theory and their applications to signal processing, which will require extensive knowledge of the co-disciplines of electrical engineering, information theory and imaging technology. I have included a short CV with a list of planned course work for next year.

My relatively late arrival in the math department has not prevented me from gathering quite a bit of momentum under the influence of an incredibly active faculty. Desiring to maintain this momentum was my motivation for applying to the MA. However, without this scholarship, I fear that financial obligation, while perhaps not insurmountable, may prevent me from wholly integrating into the scientific community at the university and making the kind of advances I'd like to see during this first year.

Sincerely,

Matthew Kim

encl: Transcripts, Coursework planned for Fall and Spring 2012/13