Philip J. Guo

December 5, 2012

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Dear Faculty Search Committee Members:

I am applying for an assistant professor position with a focus on human-computer interaction. Even though I have published in top HCI conferences such as UIST, CHI, and CSCW, I do not consider myself a typical HCI candidate. My Ph.D. dissertation spans a variety of applied CS subfields, and my current research passion is related to educational technology. I emailed Professor [**redacted**] with my concerns about whether I would fit in here, and he responded with a very supportive email that encouraged me to apply.

I was an unconventional Ph.D. student. I began doing graduate research in my advisor's area (automated software bug finding) but then ended up diverging far from his core expertise. My dissertation was one of the first to identify the unique software needs of computational scientists and to develop five new tools to address those needs. Since nobody in my department worked in this area, I had to seek out my own collaborations, most notably with Professor Margo Seltzer at Harvard University. And since my work straddled several subfields—human-computer interaction, programming languages, scientific computing, data provenance, and systems—I had trouble getting my paper submissions taken seriously by the top researchers in any one particular subfield. I wrote about these struggles in a free 122-page e-book called *The Ph.D. Grind* (`phdgrind.com`), which is the first known detailed account of an entire Ph.D. experience. This e-book has been downloaded over 100,000 times so far, and my words have resonated with Ph.D. students in a variety of fields. My graduate training has prepared me for the challenges of doing interdisciplinary research in new areas and also makes me well-equipped to empathize with and mentor my own Ph.D. students.

In mid-2012, I finished my Ph.D. in Computer Science at Stanford University and began working in a new online education group within Google. Over the past six months, though, I have come to realize that academia is the only place where I can advance the research that I truly care about. As a professor, I want to leverage my diverse background in applied CS research to develop new educational technologies. My *Research Statement* describes how I am currently in a unique position to make substantive advances across areas such as human-computer interaction and program analysis, all guided by a motivation to improve computer science education. As a start, in 2010 I created a web-based educational program visualization tool called Online Python Tutor (`www.pythontutor.com`). In the past three years, over 200,000 people have used this tool, including students taking online courses from Coursera, edX, and Udacity. It has also been incorporated into three interactive online CS textbooks, which collectively attract over 16,000 viewers per month. And CS instructors in over a dozen universities have used it in their teaching. The popularity of Online Python Tutor shows the demand for online CS education technology and enables me to use it as both an intellectual and technical platform for launching my research agenda.

Finally, my devotion to teaching goes hand in hand with my interest in CS education. My *Teaching Statement* describes my versatility as a teacher and my desire to innovate beyond traditional lectures by using technology such as live code visualizations. I am eager to incorporate principles from my past decade of teaching—deep empathy, peer teaching, intrinsic motivation, and project-based learning—into my future classes.

Thanks in advance for your consideration, and please contact me if you need additional information.

Sincerely,
Philip Guo

encl: my application materials are online at `[URL]`