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Olin College, Faculty Search Committee  
Needham, MA

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Dear Members of the Faculty Search Committee,

I am writing to apply for a faculty position in computing. I am currently a postdoctoral researcher at Harvard's School of Engineering and Applied Sciences (SEAS), after completing my Ph.D. in Computer Science from Brown University. I develop machine learning methods to find useful structure in large, messy datasets. My focus is on challenging healthcare applications, where novel probabilistic models and optimization algorithms are needed to learn from abundant yet noisy and unlabeled data to produce recommendations clinicians can trust. In one project, we've modeled common patient trajectories in the Intensive Care Unit (ICU) to suggest personalized treatments. In an ongoing collaboration with Dr. Roy Perlis at Massachusetts General Hospital, we are discovering subpopulations of patients with major depression which require different drug combination therapies. I strive to deliver results beyond top-tier publications, including open-source software and (eventually) recommendation systems integrated at the point-of-care.

As an independent researcher and educator, I hope to advance a broad data science agenda that delivers *interpretable*, *reliable*, and *meaningful* solutions. As a product of Olin myself (Class of 2010), I am passionate about a **human-oriented** approach to healthcare informatics. I have built a network of clinical collaborators at both MGH and Brigham and Women's Hospital, with whom I consult weekly on our proposed solutions. I have shadowed ICU nurses on rounds to understand how they gather information to make decisions. Producing useful solutions in healthcare informatics requires a blend of technical, ethical, and political awareness. I think Olin graduates are thus uniquely positioned to be leaders in human-oriented health informatics, and I'd like join the Olin faculty to help lead the way.

As a professor at Olin, I would engage in and outside the classroom. I could teach many standard computing and applied math courses, and I would happily co-develop courses exploring the intersections of data science and X, where X could be human-computer interaction, biology, or the humanities. I can imagine a course that teams Olin students with medical school students to codesign new patient-oriented tools. I could also advise student entrepreneurship, since I am a scientific adviser for a well-funded stealth startup. Finally, I am excited about outreach efforts that would export the Olin mindset to education programs across the world. I am eager to join the Olin community and I look forward to hearing from you.

Sincerely,

Michael C. Hughes