# Letter of Motivation
*James Wen*

I grew up fascinated by the idea of having computers and technologies fully and seamlessly integrated into our everyday lives. However, this was well before the advent of the Internet of Things and the field of Human Computer Interaction was still an orphan niche seeking a discipline to adopt it. With no established convention to provide guidance but driven by a vision of a futuristic society, I was determined to master all the relevant disciplines--pursuing the fine arts as well as the computer sciences, engineering fundamentals as well as interaction design. Building a skillset from first principles in lieu of a pre-packaged curriculum had its advantages: it was invigorating and it exposed me to the fundamentals of the constituent disciplines that give me an ease with which I can adopt and adapt to new technologies. As the path from research institutions to the consumer market shortened for cutting edge technologies, I had the opportunity to explore the interface between the two worlds from within large corporations such as amazon.com as well as from startups as an entrepreneur founding and raising capital for a number of ventures. With a strong sense of how to transition from concept to deployment, I have returned to academia to pursue the sort of research that I had only dreamt of when I first found my passion for blending disparate fields together to merge technologies into our lives and lifestyles.

The foundation I had invested proved worthwhile and elevated my ambitions to deeper consideration of the human-technology relationship. My doctoral dissertation was themed on the concern of how technology can "dumb us down" resulting in unhealthy dependencies and searching for design solutions to creating a balanced relationship. My postdoctoral appointment focused on how to address the diminishing of social interaction between people physically nearby due to the use of mobile technology. My solution was a creative cooperative photography app that brought collocated strangers together through image capture that is currently patent-pending. I even found an opportunity, in my present position at the United States Air Force Academy, where i am modeling the mind using parallel neural networks to study human-technology relationships: I led an effort to explore our empathic potential towards robot teammates in mission-oriented settings. The recent publication of the resulting work at the American Psychological Association's Technology, Mind, and Society conference led directly to a number of collaborative efforts that are currently active: George Washington University (human perception and relationship with the Internet of Things), University of Southern California (a user's distinction between a robot tool from a robot teammate), and the Massachusetts Institute of Technology (the sharing of situation awareness and calibration of trust between people and autonomous vehicles).

While the expansion of research projects through academic collaboration is always a priority for me, by nature, the study of technologies that will shape our everyday lives will benefit greatly from real world scrutiny and, in this, my extensive experience in industry helps me to create a roadmap converting my research into viable and practical manifestations. From user interface development work in large corporations, such as amazon.com, to end-to-end concept-to-product experience as a technology startup entrepreneur, I have gained operational skills that can serve as a guide to the design, development, and deployment of research results intended for integration into our lives. Taken together, the skills I have accumulated over the years in apparently disparate areas that have converged to offer the opportunity to blend technologies into our lives has provided me with a broad

yet in-depth experience in a wide variety of relevant areas that makes me eager to contribute, collaborate, and lead research efforts over the challenges.

Health and well being has been a large part of my work--mental and social--and, with my pending grant application for using ML to help visualize aggregate data from wearable devices, I feel I have the background and experiences to contribute as a Professor of Digital Life.

With my accumulated experience I am able to adapt to a great variety of projects in a timely fashion. As an example, when I joined the Warfighters Effectiveness Research Center at the United States Air Force Academy a year ago, it was halfway through a grant at risk of termination due to a lack of any publications. I quickly adapted to an area completely new for me (Human-Robot Interaction), identified a novel gap, and proceeded to generate the first few publications aligned with our group's mission thus helping to sustain the grant. Although a military institution, my interest in societal issues steered my work towards a more humane domain: I investigated into how people may empathize with their machine teammates. The work has attracted attention from a broad audience and I am presently collaborating with George Washington University (to expand my work into how people perceive and interact with the Internet of Things) and with the Massachusetts Institute of Technology (on how humans and machines can best share awareness). I am eager to extend the system I had built to incorporate a parallel neural network I have been developing to imbue human-like cognitive biases into robots to encourage greater bonding between people and technologies through a computational interaction approach to persuasive technologies. With the many ideas I have in how to best integrate machines into our lives, the possibilities of working with a number of teams at HVA makes it an exciting environment for me to contribute on a wide variety of fronts commensurate with my broad experiences. Having secured skills in both design and development as well as in testing and evaluation in academic as well as industry environments, I know how to realize visions and I look forward to exercising my experience in a variety of settings with students and fellow researchers.

My work has ranged from handling data (visualizing abstract data at IBM Research) to sensor data (wearable monitoring of physical activities at the US Air Force Academy) to creative technologies in everyday life (socially cooperative photography at Göteborg Universitet). With the considerable experience and contacts I have accrued, I look forward in bringing them to bear in order to find solutions on a societal level. My network is global, with active contacts all over the United States but also in Europe and Australasia. I have honed, as an entrepreneur and twice-elected president of the Phi Beta Kappa Association of New York, presentation skills that have resulted in invitations to speak to business audiences as well as popular audiences. My research and business experiences combine to equip me with investigative as well as operational skills that would immediately apply to the tasks at HVA to organize and lead projects. I am driven to disseminate through top tier publications and integrate into the educational experiences of students based on my experience in mentoring and leading student as well as professional teams. My fundraising background includes private capital as well as writing research grant proposals and I look forward combining the academic and consumer worlds together through the funding of projects that expands our knowledge in novel and creative ways while serving people for better living.