I am writing in response to the openings for Professor of Information and Computing Sciences at Utrecht University. Beyond my passion for the field, the announcement resonates with me due to its emphasis on fostering a collaborative and inclusive environment. This would be an ideal balance to strike and I am grateful for the opportunity to present my credentials for your consideration.

I am writing in response to the announcement for openings as Professor in the Department of Information and Computer Sciences at Utrecht University. The tone and guiding principles of the announcement resonated with me touching, as it did, upon not only the academic aspects of the position but the collegial and supportive nature of the department, which is very important to me. I am eager to join a department that cares about fostering an actively collaborative and inclusive environment and I am grateful for the opportunity to have my application considered.

My area of expertise lies in Human Computer Interaction (HCI). While it is not one of the areas explicitly listed in the announcement, I believe it fulfills the department's stated keen eye on applicability and offers a broad potential for collaborations with the AI community in the relatively new area of Computational Interaction and with researchers in Complex Systems, an area I am directing my HCI research towards.

The area of my expertise lies in Human Computer Interaction (HCI) which, while not explicitly listed in the announcement, would fit in well given its alignment with the department for applicability and its broad potential for collaborations with a wide variety of areas both within and external to the department. For example, a project I have been working on to digitize the non-linear sequencing of musical scores for musicians involves the obvious HCI component but incorporates the application of machine learning in recognizing page turning triggers through user gaze as well as system integration with respect to the parsing and organizing of printed scores. As a Research Fellow of the Air Force Academy, I am applying my HCI expertise as part of a team of psychologists, sociologists, as well as computer scientists towards the more theoretical area of Human Machine Teaming (HMT).   With the Internet of Things and autonomous vehicles becoming more tightly integrated into the infrastructure of society, how we interact with smart technologies is becoming increasingly important. The opening of an entirely new paradigm of computational possibilities through the wide scale adoption of the iPhone a decade ago was arguably as much HCI as it was technology advances. When I joined the team, it was facing a potential termination of funding due to its struggles to generate HMT publications based on its research path of investigating trust repair with robots and the impact of anthropomorphism in human robot interaction. Although I was tasked with some of the more technical projects on mission planning and wearable technologies, I took the initiative to start a new research project that was a bold departure from the main focus of the work. My research into how empathic relationship with a robot companion may affect the ultimate outcome of mission fulfillment became the first HMT publication from the team and I have been asked to plot a roadmap for research in that direction as it has satisfied our funding source for producing relevant research output.

While my area of focus is HCI, part of what I love about it is its theoretical and applicable breadth. I am eager to extend and expand my research into a new area that blends Artificial Intelligence and HCI to imbue a degree of personality into the machine. Giving a machine personality is not a new notion but is a risky area that has seen many a commercial attempt to create likeable character--often with mixed success (think Microsoft's Clippy). My perspective is

to approach this from a first principles direction--applying our understanding of the brain and our model of the mind--to use deep learning techniques to create human-like cognitive biases and other human characteristics. This is, in a way, an extension of my current research in understanding Human Machine Teaming (HMT). Although I am the newest researcher to join our group less than a year ago, our group is a relatively new one at only three years old. However, we had had no publications in our area of focus the entire time and so I decided to take the initiative, deviating from our direction of examining anthropomorphism and human robot trust building to instead, investigate what I believe to be a more fundamental element of team spirit: the relationship between teammates. While trust is one of the main ingredients of such relationships, it is but one of many and I proposed that empathy between teammates may, in many ways, be more powerful. Much work has been done to try to imbue robots with empathic behavior based, oftentimes, on feature and expression recognition that can trigger appropriate responses (e.g., seeing a frown, the robot can respond by asking what is wrong). However, empathy in the reverse direction has received little attention. After all, empathizing with a collection of wires and electronics takes some suspension of disbelief. Nonetheless, I designed a game-like simulation that measured empathic behavior towards a machine teammate on a mission to a hostile planet and my work resulted in the first publication from our group in the area of HMT and my work has been embraced as a leading project representing our group. I have since been asked to create a roadmap for the future direction of this work which affords me the opportunity to map out a transitional plan that will minimize the impact of my departure. The transitional plan will expand upon the work I have started and will continue to shepherd but will also branch into a new domain that blends AI with HCI to integrate Theory of Mind corpus in creating a grounded form of artificially generated personality.

I am presently a Research Fellow at the United States Air Force Academy and my position here continues an exhilarating path I have taken to follow my passion of blending disciplines and to pursue my desire to stay on the leading edge of technology in both industry and academia. It was my interest in pursuing visual arts while studying physics and computer science at Cornell University that brought me to Prof. Dexter Kozen and his NSF research project in visual programming. That work paved the way for me to become the lead architect of a computer graphics system for the abstract algebra team at IBM Research as well as the completion of my master's degree in visualization at Brown University. The interactive nature of visualization work led to my interest in user interface design, which I pursued as a developer at amazon.com, an independent consultant, and as the founder of multiple technology startup companies. From these experiences, I have accumulated a highly operational set of skills from project management and team building to securing partnerships and raising private capital. As my work in user interface design naturally evolved into an interest for user interaction, I became fascinated with the underlying notion of user experiences and returned to academia, expanding my multidisciplinary base to include psychology. My doctoral dissertation--completed under Mark Billinghurst and William Helton at the University of Canterbury--focused on the relationship between technology usability and the retention of cognitive maps.

I am particularly excited about the potential opportunity to join a department that emphasizes the nurturing of a supportive, collaborative, and inclusive environment. I believe a workplace that fosters strong collegial relationships will not only benefit from the rich collaborations that may arise but also from the enriching environment that forms a substantial part of our waking hours. My natural disposition is to be respectful, friendly, supportive, and sincere to those

around me regardless of our roles. To be able to join a place that values such a positive attitude would be ideal in so many ways for me.

As mentioned earlier, the emphasis placed on the active promotion of a collaborative and inclusive workplace struck a chord with me. While this is something I strongly believe in and feel is often overlooked, I had not thought of it formally myself as much as I live my life following such precepts. When I was a postdoctoral researcher at Gothenburg University, I met a visiting design lecturer who expressed concern over the lack of opportunity to conduct research because her talent for creating illustrations was in such high demand (for conference manuscripts her team was generating). I offered her an opportunity join me in the research I was completing and we co-authored a paper presented at MUM. She recently reached out to me to ask if it was ok with me that she would like to use our work as a basis for a class she is teaching. I was very happy to hear that our experience yielded such fruitful results and it reinforced my belief that nurturing meaningful interactions in such environment can result in a win-win situation.

While my fundraising experience has been mostly in the private sector where, as a technology entrepreneur, I raised private capital to build companies, I have a great interest in applying me skills and experience towards securing research grants. In addition to the skills my entrepreneurial experiences have provided me as a leader and team builder, I have also learned a lot when, as a member of the academic Phi Beta Kappa Society of New York, I found myself sharing the frustrations of fellow members with respect to its shirking of its responsibilities to its 3,000 members that I decided to run for the presidency. My efforts to turn the society around was noticed nationally and I was honored to hear a presentation by the president of the Seattle based Phi Beta Kappa Pugent Sound Association that they modeled their revival after my successful turn-around of the New York Association. I believe my leadership skills and firm commitment to help create a collaborative environment will be both fulfilling and enriching for everyone so that the effort will be returned tenfolds.

While my experience in mentoring students is limited to bachelor and master students so far, I look forward extend my to apply my skills and experience to build a team of students to reach for ambitious research projects in information and computer sciences. I am always eager to learn from those around me so that I can reach my full potential to contribute to an environment I am a part of.

I thank you for your time and consideration and I look forward to hearing from you soon.

With sincere regards,

James