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To whom it may concern,

I am writing to apply for the position of Lecturer with Potential Security of Employment (LPSOE) in the Computer Science and Engineering (CSE) department at the University of California, San Diego (UCSD). I am currently a Ph.D. candidate in the Bioinformatics and Systems Biology program at UCSD, where I am co-advised by Siavash Mirarab and Pavel Pevzner. I am in the process of writing my thesis, and I expect to complete my dissertation by June 2019. UCSD is one of the world leaders in the intersection of computation and biological sciences, and an LPSOE role would provide me an unparalleled opportunity to develop my skills as a teacher and mentor.

As can be seen from my curriculum vitae, I am deeply committed to teaching at the undergraduate and graduate levels. Throughout my academic career, I have served as an instructional assistant in 19 undergraduate and graduate courses at UCSD spanning Computer Science, Bioinformatics, Biology, and Economics, and I have taught two undergraduate courses in the Computer Science department. Notably, one of the two, *Biology Meets Computing*, is a new interdisciplinary course I designed to teach Computer Scientists and Biologists how to conduct collaborative Bioinformatics-focused projects. Outside of university courses, I have worked thoroughly in the development of Massively Open Online Courses (MOOCs) in the fields of Bioinformatics and Computer Science, including the *Bioinformatics Algorithms* and *Introduction to Genomic Data Science* MOOCs with Pavel Pevzner and Phillip Compeau, for which I built "smart" automated grading systems that could provide specific feedback tailored towards students' unique misconceptions. More recently, I developed two MOOCs of my own: *Analyze Your Genome!*, a course on how to perform and interpret Next Generation Sequencing (NGS) analysis workflows, and *Data Structures: An Active Learning Approach*, a course on the algorithms, efficiency, and use-cases for essential data structures. To accompany the latter, I published a textbook, *Design and Analysis of Data Structures*. In recognition of my participation and innovation in education, I was awarded the Distinguished Teaching Award by the UCSD Academic Senate, and I was invited to give a talk at TEDxUCSD, in which I discussed the future of online education. My key teaching philosophy is active learning, which I execute by embedding challenges throughout my MOOCs and by "flipping" the in-person classes that I teach. Based on feedback I have received from my past students, I discovered that I could successfully develop and execute courses in a wide range of fields, and more importantly, that I absolutely adore the process.

The notion of interdisciplinary and collaborative pursuits can be observed not only in my teaching, but also in my research. My broad interests are in the development of scalable computational methods in the

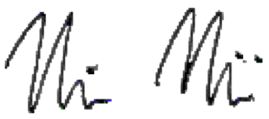
field of phylogenetics, and I am particularly interested in evolutionary and epidemiological modeling in viruses, namely in Human Immunodeficiency Virus (HIV). My dissertation work has involved the intersection of Computer Science, Statistics, Biology, and Viral Epidemiology, and as a result, collaboration with researchers with vastly differing areas of expertise has been essential to my success. Because of the modular nature of my work, I have had the opportunity to mentor undergraduates and high school students with various backgrounds and expertise in research projects related to my own, and I hope to have the opportunity to mentor students in my future research endeavors as well.

Finally, I am dedicated to outreach related to the dissemination and accessibility of knowledge. I strongly believe that learning should have no barriers to entry, and in this spirit, I have ensured that all online courses I have developed are publicly accessible for free and that my textbook is available for purchase at cost. I also taught a university-level high school course titled *Introduction to Bioinformatics* via the Academic Connections program hosted by UCSD Extension. At UCSD, I serve as a Mentor Teaching Assistant for the Computer Science department, a member of the CS foreach outreach organization, a Group Mentor for the Women in Computing undergraduate organization, and an Outreach Committee Member for the Graduate Women in Computing organization, and at the Salk Institute for Biological Sciences, I serve as a SalkEducation Volunteer to aid with education outreach hosted at the Salk for elementary, middle, and high school students throughout southern California. As the President of the Graduate Bioinformatics Council at UCSD, I have organized multiple outreach endeavors for the San Diego community, notably including a booth at the annual San Diego Science Festival EXPO Day. I grew up in Chula Vista, and because of my strong ties to my hometown, I very much desire to continue my career in San Diego to be able to continue my outreach in the community I love.

Since the time I found my passion for teaching, I have envisioned my future self as a professor at a research-focused institution. The topics I want to teach are closely tied to large-scale biomedical research, and because of UCSD's emphasis on research, the student body at the university would be my ideal audience of instruction. Further, UCSD has international recognition, which would provide an excellent platform for me to develop new MOOCs for scientists and engineers from around the world. I hope that, if given the opportunity to be a part of the excellent group of faculty at UCSD, I will be able to help guide these students along their academic journeys to develop into independent thinkers and to become the future world leaders.

I have enclosed my Curriculum Vitae and my Statements of Teaching, Contributions to Diversity, and Scholarly Activities for your consideration. Please feel free to let me know if you would like any other materials. I look forward to hearing from the committee.

Thank you for your consideration,



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