

STATEMENT OF PURPOSE

I always aspired to achieve greatness, but clarity about my future eluded me until I began my bachelor's. Initially drawn to fields like sports, acting, medicine, and engineering. I ultimately chose information science due to my fascination with operating software on computers and smartphones. During my undergrad, I developed a keen interest in coding, influenced by depictions of programmers in movies. While such scenes might not reflect actual coding practices, they motivated me, leading me to concentrate on tasks as I imagine myself as the character shown. In my final year, I joined a product-based company as a software developer, where I quickly adapted to new technologies and met deadlines. Beyond my academic commitments, I took on the responsibility of managing the entire front end for a Utah-based startup, this professional journey uncovered my potential and inspired me to pursue a master's in the field of computer science.

I consistently ranked within the top 10 in my high school board exams. With a strong academic record, I secured a government-aided seat and a yearly merit-based scholarship for my bachelor's degree. Though my overall CGPA is good, I regret not prioritizing studies in the initial semesters due to my unfamiliarity with the credit system and extracurricular involvement. During the COVID-19 lockdown, I reassessed my approach, recognizing the importance of grades. Since then, I've consistently maintained an average GPA of 8.5 post-pandemic from the 4th semester onward.

For the thesis project, my teammates and I, in consultation with our Head of Department, chose the topic of masked face recognition in response to the challenges posed by mandatory mask usage during COVID-19. This decision resulted in the development and publication of "Access Control System with Masked Face Recognition," a system capable of identifying individuals even with partially covered faces, detecting masks, and allowing authorized access. Subsequently, we delved into research, acquiring in-depth knowledge on face recognition. Realizing the availability of a face recognition Python library, we utilized it for identifying individuals in our dataset. However, collecting masked face images of the same individual was tedious and posed a challenge. To address this, I took the initiative to implement MaskTheFace, a script designed to detect key facial features and automatically apply masks to the raw images. This allowed us to concentrate on mask detection and access-granting functionality. We employed three deep-learning models—MobileNetV2, VGG19, and ResNet50—for object detection, with VGG19 achieving 90% accuracy and ResNet50 and MobileNetV2 reaching around 80%. Additionally, we enhanced the project by incorporating automatic attendance logging when a student appeared in front of the camera, demonstrating the versatility of the project.

In my final year, I chose an IT firm's offer over an attractive sales engineer at Keyence, a position I managed to secure as the only candidate from my college. Despite the importance of immediate income, I declined the offer considering the risk involved and prioritizing my long-term passion for the field which relates to my bachelor's background. Eventually, I secured a position at Tecnotree, a product-based company, as a software developer. Initially, I served as an intern, participating in knowledge transfer sessions regarding the company's products and operations. I excelled in weekly tests during the internship, earning a top-five ranking and an opportunity to join the Product Research and Development team as a web application developer. Concurrently, I successfully managed my final semester academics and thesis project. Upon joining the team, I faced immediate tasks involving features and defects. While lacking experience in technologies like ReactJS, NodeJS, GraphQL, Apollo Playground, and MongoDB, I began burning the midnight oil, learning intensively while applying the knowledge gained to complete assignments. At this point, I faced tremendous pressure, yet it led me to discover my potential and develop a genuine interest in this field. In this phase, I began considering a master's degree. During this learning phase, a contact offered a role at a Utah-based startup, Credental, involving direct collaboration with founders from Lehi, Utah, where I managed my time to moonlight as a front-end developer, working with teammates having 20+ years of IT experience. In about 7-8 months, I almost single-handedly built the front end from scratch, a defining moment that solidified my decision to pursue a master's degree. However, my primary job performance was also excelling, leading to my involvement in mobile application development. In this role, I gained proficiency in React Native and various associated frameworks and tools, including Android Studio, React Native debugger, and Reactotron. I closely collaborated with my manager, contributing to the development of several significant features. I spearheaded the implementation of the Detox library, automating the end-to-end testing functionality in the mobile app, and eliminating the requirement of a dedicated tester. Based on these aspects, I received a top rating of 5 out

of 5 in my performance review, recognized as consistently exceeding expectations. I take pride in being one of only three individuals out of 50 peers to achieve this rating. I will have accrued over 2.5 years of valuable experience by entering college.

Currently, my primary goal is to excel in the Computer Science MS program offered by the Colorado School of Mines, emphasizing grades, internships, projects, and networking. The MS non-thesis with the project track aligns perfectly with my goals as it is designed to prepare candidates for careers in industry also providing me with a chance to choose from eight research areas. Additionally, I could acquire in-depth knowledge with several advanced courses for 24 credit hours and an opportunity to develop a project for 6 credits that provides me with the hands-on experience, most required post-graduation. I will be committed to building strong prerequisites through two of the mandatory four courses which are Algorithms (CSCI406) and Operating Systems (CSCI442). Furthermore, for the electives, I would prefer to explore one of the core fields HCI and HRI, as it provides knowledge regarding the intersection between the technology and human aspects which I am fascinated about. I strongly believe that I am good at understanding psychology. For instance, I exceed the expectations of the clients while developing a UI of software as I can understand the client's requirements well and develop a user-friendly product. Thus, I intend to use this expertise of mine. On top of that, I usually connect with the UX developer in my organization, so I get a chance to put in my creativity as well in what I am developing. Finally, for the master's project (CSCI700) I would implement the knowledge gained through the courses, get hands-on experience, and build the prerequisites for my professional career post-graduation. Here, I would want an opportunity to work under the supervision of Professor C. Estelle Smith renowned for her honors in Human-Computer Interaction (HCI) and related areas. Her expertise in this field aligns perfectly with my aspiration and under her supervision, I could get a chance to develop something that might help in resolving health-related problems. Consequently, post-graduation, I aspire to choose my career in the field of Human-Centered Computing by learning and contributing to tech giants like Amazon, Google, Microsoft, Meta, and others where the Mines alumni work. On top of that, there are so many local offices of these tech giants in Denver, which increases my chances of getting my dream job. With a clear vision, I'm ready to work hard and demonstrate dedication. I have full faith in my capabilities to meet the expected standards, what further sets me apart is my prior experience with a Utah startup.

I am drawn to pursuing my master's at Colorado School of Mines as it is one of the top engineering and applied science universities in the nation and ranks #3 best engineering college in the US by Money Magazine. With a favorable student-faculty ratio, 1 on 1 interaction have been given more priority. Through Mines, I would not only pursue my passion but excel in it. Most importantly, I get to re-live my student life as Mines combines a world-class education with a golden student experience. Furthermore, I could connect with a diverse community, and I also would contribute to International Day by representing my culture. Additionally, Colorado is such a beautiful place to start my new journey as it is ranked among the top places to live in the US and for tech startups as the Denver tech community is booming. Moreover, The Welcome Golden Arch feels like stepping into a vibrant, animated universe. Leaving my country for the first time and directly landing in such a place is truly a blessing. With so many clubs and organizations, there will be something for me to get involved. Moreover, having so many activities to do such as M climbing, E-days and skiing in the winter wonderland is what I find fascinating and conducive to being proactive and building healthy habits during off-hours. Bing watching videos over videos on Mines, I'm eagerly anticipating the chance to experience it directly.

My journey as a software developer has made me understand my strengths and capabilities and has created a direction toward my passion. Thus, I thrive on self-competition and look forward to exploring my potential in a community that shares my passion for the field. Stepping out of my comfort zone, and independent living for the first time offers a valuable chance for growth. With substantial work experience, I'm crystal clear about my goals and see this master's program as an opportunity to learn from past mistakes. Committed to discipline and consistency, I promise to excel in all endeavors, drawing from both corporate insights and academic acumen to contribute meaningfully to this new chapter. With confidence in my ability to shine in a community that celebrates differences, I believe my presence will radiate positivity, making me an ideal match for both the program and the university. I look forward to a fruitful association with the Colorado School of Mines. I am eager to be an Oredigger.