Minhyuk Ko | Diversity Statement

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In my personal experience, I have seen peers in Computer Science classrooms dropping out of Computer Science courses and switching to a different major as I progress through my degree, especially students from underrepresented groups. As a future faculty member, I plan on helping underrepresented students feel belonging in the community through my research, teaching, and service.

Broader Impacts

Before I started my freshman year at George Mason University, I was in the STEP (Student Transition Empowerment Program), a six-week summer residential program for incoming first-generation freshmen. Throughout the program, we learned about how we are diverse even though we share the common theme that we are first-generation students. Some identified themselves as LGBTQ, some came from low-socioeconomic backgrounds, and some were racial/ethnical minorities in higher education. I learned how our different backgrounds give us different privileges or obstacles, and I learned that being an ally is more than just treating everyone equally. It also means actively educating myself about their experiences, as well as actively advocating for their rights through using my voice and platform.

The year after participating in the STEP program, I returned, but this time as a mentor. I had an opportunity to supervise eight students to guide them regarding personal, academic, vocational, or behavioral issues. I played a pivotal role in helping mentees navigate the challenges of university life, offering advice on course selection, study techniques, and time management. Even though the retention rate for first-generation students is 67% in the US, our program managed to have a 96% retention rate.

Being the president of the F1rst Gen @ Mason gave me more opportunities to serve the first-generation student community at Mason. I worked with FLIP (First-Generation Low-Income Partnership) National to initiate a laptop lending program. This initiative has helped a lot of students struggling to afford a laptop, which was especially important during the COVID-19 pandemic when a lot of classes were held online. With FLIP National, I was also able to host events that promote our identity as first-generation students, such as GEN Week. We were able to order 100 t-shirts that we all wore during the National First-Generation Student Day and hosted events where we all gathered and shared the unique challenges that we face, as well as possible helpful resources. At the end of the school year, I was able to host the event I am F1rst Stories, where we invite first-generation alumni to our university to give us a motivational speech, as well as career advice.

Since I was a freshman, I was involved in SHPE (Society of Hispanic Professional Engineers). Within the organization, I was able to have informal conversations with Hispanic students, which helped me learn more about the challenges that they face as a minority in engineering and provide advice. I was also able to attend various national SHPE conferences such as LeaderSHPE Live! and SHPE National Convention. This has helped me understand how Hispanics in other universities face different challenges.

To continue learning about diversity and inclusion in computing, I attended the TAPIA conference twice (2023, 2024). Throughout the conference, I learned what inclusion should look like in various communities, such as using closed captions and maintaining eye contact when communicating with a deaf person. I was also able to talk with diverse professionals working in the industry and learn about the diverse experiences that they face.

In the Summer of 2023, I had the opportunity to mentor Omer Ahmed, an African-American undergraduate student from Virginia Tech's Multicultural Academic Opportunities Program (MAOP) internship program (equivalent to an NSF REU). He worked on my project AutoPrint and contributed a significant amount to implementing the Abstract Syntax Tree (AST). His work on the AST reduced the number of unnecessary print statements by 66%. This paper has been accepted to VL/HCC 2025 with Omer as the second author [1].

My commitment to helping students navigate unfamiliar academic environments extends to graduate school mentorship. As an undergraduate, I often struggled to find someone who could advise me on graduate education and the application process. To address this challenge for other students, I served as the Graduate Peer Mentor Lead at Virginia Tech's APIDA + (Asian Pacific Islander Desi American) Center, where I coordinated graduate student-to-undergraduate student and faculty-to-graduate student mentoring programs. Through this program, I helped more undergraduate students to realize that a Ph.D. is not so intimidating. I believe more exposure and

informal interactions with graduate students in their field allow more undergraduates to realize that graduate school is their post-undergraduate career path and set them on a trajectory to prepare them for a graduate degree.

Working at the APIDA + Center has also provided me with an opportunity to engage in Asian American Independent Study. I studied the experiences that APIDA + students face in the Computer Science Study Abroad program through interviewing APIDA + students who have participated in our institution's first Computer Science study abroad program. One finding I was able to reveal was that despite the fact that Asian Americans are often perceived as foreigners in the US, they were able to strengthen their American identity while participating in the study abroad program, where they were recognized as Americans through their accents, speech patterns, and behaviors. This paper has also been accepted to VL/HCC 2025 [2].

At Virginia Tech, I have supported students by connecting them with campus resources, facilitating informal networks where they can exchange information, and encouraging their participation in campus activities. I believe that fostering an inclusive environment requires more than welcoming students from diverse backgrounds; it also requires actively creating opportunities for them to connect, contribute, and thrive. My commitment to these values was recognized through **Virginia Tech's Aspire! Award for Practice Civility**[1], which reinforced my dedication to building respectful and welcoming communities.

Future Goals

After completing my Ph.D. at Virginia Tech, I will join academia as a tenure-track assistant professor. Academia will provide me with an opportunity to stay close to Computer Science learners to build various programming tools and redesign a CS curriculum that is tailored to their needs, as well as the opportunity to establish my own research lab, which would offer me the flexibility to conduct research. I envision my lab working on educational programming tools to help students adopt good programming practices. Regardless of the background that a student comes from, I believe that all students should have equal opportunity to learn good programming practices, which I plan to assist through building various programming tools.

As a faculty member, I plan to stay in SHPE as an associate member. This would allow me to access a plethora of talented and motivated Hispanic students that I could potentially recruit as lab members. At Virginia Tech, I was fortunate enough to be in a lab with diverse students from all around the world, including the United States, China, Bangladesh, India, Pakistan, and Ethiopia. Having such diverse lab members, we all had different strengths. This has allowed us to help and learn from each other, which benefited everyone in the lab. As a future lab director, I will be committed to fostering a diverse lab by recruiting students from diverse backgrounds.

References

[1] **Minhyuk Ko**, Omer Ahmed, Yoseph Berhanu Alebachew, and Chris Brown. Autoprint: Judging the effectiveness of an automatic print statement debugging tool. In *2025 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*, pages 379–384. IEEE, 2025.

[2] **Minhyuk Ko**, Mohammed Seyam, and Chris Brown. Programmers without borders: Bridging cultures in computer science study abroad program. In *2025 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*, pages 385–390. IEEE, 2025.

[1] `https://experience.vt.edu/2017/Minhyuk_Ko.html`