

Mentoring Statement

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My mentoring philosophy centers on developing students into independent researchers and practitioners capable of making meaningful contributions to their fields. This development encompasses rigorous scientific training alongside essential soft skills including communication, ethical reasoning, and professional networking. I continuously refine my mentoring approach by learning from exemplary mentors within our department and college, integrating proven practices into my own methodology. To ensure post-graduation success, I invest time in understanding each student's unique strengths and areas for growth, tailoring my guidance to address specific challenges while building upon their natural abilities. I also recognize that the research journey often intersects with personal challenges, and I am committed to supporting students through any difficulties they may encounter during their academic pursuits.

1 Mentoring Activities at UT Austin

My research group¹ at UT Austin comprises 5 PhD students and 1 postdoctoral researcher. I also actively mentor additional students within the broader UT Networked Systems group. I prioritize accessibility and transparency in my mentoring relationships. I maintain an open-door policy when not in meetings, encouraging students to engage in spontaneous discussions. When concerns arise regarding a student's progress, I provide honest, constructive feedback while actively seeking their input on how I can improve as their advisor. My mentoring approach is implemented through the following structured activities:

Weekly One-on-One Meetings. I conduct weekly individual meetings with students to brainstorm ideas, discuss research progress, review paper drafts, explore career goals, and address any topics of concern to the student. A primary objective of my mentoring is fostering independent critical thinking. For junior students, I guide their problem-solving process through strategic questioning that helps them explore diverse solution approaches effectively. As students advance, our discussions become increasingly collaborative, with students proposing their own research directions and methodologies. At this stage, I contribute insights drawn from my experience, helping them refine research problems and navigate complex solution spaces.

Daily Stand-Ups. For projects requiring intensive hands-on guidance, I implement daily stand-up meetings. These sessions prove particularly valuable for projects involving substantial engineering components, where frequent feedback accelerates progress and prevents costly missteps. Students engaged in system implementation consistently report these sessions as invaluable to their success. For example, Xiao Zhang, a second-year PhD student, has been collaborating with me on predictable real-time 5G edge computing. He took the lead on building a 5G testbed, designing and implementing our solution, developing use-case applications, and conducting comprehensive evaluations. As this was his first major project, the daily synchronization meetings provided essential guidance and built his confidence in tackling complex technical challenges. This structured support enabled him to successfully submit his first lead-author paper to USENIX NSDI. I also maintain regular presence in the student workspace, offering informal assistance as needs arise.

End-of-Semester Feedback Sessions. As a junior faculty member, I am committed to continuously improving my mentoring effectiveness. Near the conclusion of each semester, I request written feedback from students to ensure my approach aligns with their evolving needs and learning styles. I carefully analyze their responses and discuss findings during individual meetings, where I also provide comprehensive feedback on their research progress and professional skill development. This bidirectional feedback process establishes clear mutual expectations and facilitates strategic planning for the upcoming semester.

Asynchronous Discussion via Group Wiki. I established a group research wiki where students document their findings, including system build instructions, related work summaries, and implementation progress updates. I provide detailed asynchronous feedback through this platform, enabling students to track their

¹<https://daehyeok.kim/group>.

development while facilitating knowledge sharing among peers. This wiki has evolved into an invaluable repository that serves not only current project participants but also future students working on related research areas.

Mentor-Mentee Compact. During my first year at UT Austin, I observed that some students, particularly those transitioning directly from undergraduate programs, often held different expectations regarding research commitment and graduate student responsibilities. To address this challenge, I developed a mentor-mentee compact.² I learned this concept while participating in the CIMER Mentoring Workshop offered by the College of Natural Sciences. This document articulates mutual expectations and facilitates goal alignment between mentor and student. While not legally binding, it has proven effective in clarifying expectations, enhancing productivity, and fostering strong professional work ethics. I plan to refine this compact and extend its application to undergraduate researchers, who benefit from more structured guidance.

2 External Mentoring Activities

Beyond my mentoring responsibilities at UT Austin, I actively engage in mentoring students from other institutions. Previously, I collaborated with Jiarong Xing (Rice University) and Sophia Yoo (Princeton University) on resilience and security of 5G cellular infrastructure. This project originated during their internships at Microsoft and culminated in a research paper presented at the ACM SIGCOMM, MobiCom, and USENIX Security Conference. Jiarong has since become an assistant professor at Rice University, for which I provided a recommendation letter, while Sophia is completing her PhD studies.

I have also been mentoring two students from Seoul National University, South Korea, Juheon Yi (advised by Prof. Youngki Lee) and Junghan Yoon (advised by Prof. KyoungSoo Park), on research projects addressing high-speed networking and 5G edge video analytics. Juheon's research was published at ACM MobiSys in June 2025, and Junghan's work was accepted at ACM HotNets for presentation in November 2025. Juheon has since joined Microsoft Research Asia as a senior researcher, a position for which I provided a recommendation letter. Additionally, I was recently appointed as a mentor in SNU's Star Mentoring Program, where I meet regularly with computer science graduate students to provide career guidance and professional development support.

²<https://daehyeok.kim/assets/docs/kim-group-compact.pdf>.