

CHRISTOPHER CUMMINGS

PH.D. CANDIDATE | CIVIL & ENVIRONMENTAL ENGINEERING

transportation systems analysis & planning



1. Where are you from?

I am from West Chester, Pennsylvania, a little ways outside of Philadelphia. Fly Eagles Fly!

2. Where did you get your undergrad degree from and what was your major? Do you have a MS?

I earned a BS in Civil Engineering and a BS in Economics at Clemson University. I received my MS from Northwestern University on my way to a Ph.D.

3. What attracted you to engineering? I've always loved the complex, macroscopic systems and have been fascinated by land use and the urban environment. As a kid, I used to draw urban designs and buildings. In school, I realized I was pretty good at math and science. From there I decided to study transportation, which comprises a lot of those things.

4. What attracted you to pursue a Ph.D. in your specialty area?

I got involved in research at Clemson in my last two years of undergrad and sat in on some master's courses. I thought the kinds of things I was seeing, and learning were really neat, but I wanted to explore them more. I wasn't satisfied with just knowing the broad concepts and models, I wanted to understand how they developed and where they are developing further. Working on research for my Ph.D. has given me the chance to do that.

5. How do you explain your thesis research to a non-scientist?

Several companies and organizations (both government and non-government) are looking at "flying taxis" and drones as a replacement for car trips that would otherwise be stuck in traffic. However, these new types of aircraft will require a rethink of the airspace system and how we manage air traffic. My thesis creates tools and frameworks that could be used to help manage the new air traffic.

6. What attracted you to NU?

First and foremost, the strength of the program, starting with the professors such as my advisor, Professor Hani Mahmassani. Northwestern has a transportation program among the best in the world, and I'm still often impressed by the quality of work from my colleagues. Beyond that, I love the community at Northwestern and Evanston, it's been a pleasant place to live.

7. What has been the highlight of your time at NU and CEE?

Working with the professors and other students, all of whom are incredibly bright, has been fascinating and challenged me to improve my work. But I also want to mention my coursework in the first year. At the time it was a little overwhelming, but you realize later all the incredible tools you were exposed to and how valuable those are.



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8. What has been the most challenging aspect of your graduate school experience?

I'm going to stay away from the obvious answer: the pandemic. Beyond that, I would say the challenge of going from just a helper on research projects to the designer and driving force behind research projects. It's a unique challenge to have to create and refine research ideas on your own and continuously improve them. My advisor, Prof Mahmassani, the other professors, and all the other students have been great about providing help and feedback where I needed it. But I think a key challenge in any Ph.D. is that you have to define your research interests and questions and decide on the best way to explore them.

9. Can you tell us about your experience being mentored or mentoring others?

I think one neat thing about this program is all the discussions you have with your colleagues and professors about their research and experiences. While you have your area of expertise, find yourself teaching others something about it, and they also are experts in different areas and are great resources for you to learn about those areas. Even better than searching for and finding an answer you're wondering about in the literature is going to ask that expert directly in your program and get their holistic view on it.

10. What are your interests or hobbies outside of your research?

To some extent, the critical thinking, data analytics, and coding skills from my research have bled into my other interests and hobbies. I spend a lot of time looking at data from professional sports and using data analysis techniques to understand the team and individual performances. I'm also an avid distance runner and newbie to triathlons. So, if you ever want to talk sports I'm always down, but just know that I'm going to inject the discussion with some data analysis or research-style questions.