THE UNIVERSITY OF CHICAGO DEPARTMENT OF COMPUTER SCIENCE PRESENTS:

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JCL 390

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Hosted by Professor Nick Feamster

"INTERNET ARCHITECTURAL EVOLUTION"

ABSTRACT

The core architectural features of today's Internet were codified three decades ago. They have served us well over these years, both in practice and as something to inveigh against in research. To remedy numerous weaknesses, some have developed clean-slate designs that reimagine the Internet anew, while others have sought and achieved incremental change. What all agree upon is that architectural evolution is hard.

I will describe a line of research, a decade in the making, to enable architectural change in the Internet. This research has three key aims: pluralism, deployability, and meta-deployability. Since we cannot know what the future holds, we designed an architectural "framework" that enables pluralism -- the seamless co-existence of many different Internet architectures. Since the high cost of deployment has inhibited experimentation and innovation, we ensured the deployability of new architectures through this framework. And since deployment of the framework itself is a barrier to enabling such architectural evolution, we designed for meta-deployability -- for the framework itself to be incrementally deployable in today's Internet.