

MASTERS FINAL ORAL EXAMINATION

**Friday, November 11th
1:00p.m. @ 223 Atanasoff**

Shanmukha Anjenaya Varma Pericharla
Major Professor: Lu Ruan

An Analysis of Missing Prefixes in Tier-1 Autonomous Systems Views

An Autonomous System is a collection of routers whose prefixes and routing policies are under common administrative control. Internet is interconnection between Autonomous Systems where neighboring Autonomous Systems exchange routing Information. Any Autonomous Systems that has a Tier 1 upstream provider should be able to reach any Internet host since a Tier-1 Autonomous Systems should be able to reach all Autonomous Systems in the Internet and the prefixes originated by them.

Analyzing the routing information of Tier-1 Autonomous System will help determine if it can actually reach all the prefixes in the world thus we will know if anyone in Internet can actually reach anyone else who has an Internet connection. In this work, the routing information of all Tier-1 Autonomous Systems is extracted and it is verified if any given prefix can be routed from them. The missing prefixes are then analyzed for their distributions across different regions of the world.