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Thesis B.Sc. Thesis M.Sc. IDP

# Target Generation for IPv6 Hitlists

## Motivation

The ability to scan through the Internet is crucial for our understanding of its structure and developments. For the IPv4 Internet, it is feasible to scan through its address space in a reasonable amount of time. For IPv6, however, the address space is way too large for exhaustive scanning, which is why this chair maintains a so called IPv6 hitlist [1], a collection of addresses discovered through active and passive sources. Although it is one of the largest maintained hitlists, it is always desirable for us and other researchers to extend it with new, high-value addresses. Research towards address generation algorithms is numerous, e.g. [2, 3], still we did not evaluate all of them yet. This could lead to a significant extension of our hitlist, which is in turn an improvement for network measurement related research.

## Your Task

- Familiarize yourself with our hitlist and the involved scanning processes
- Search for and set up or implement different target generation algorithms
- Evaluate the algorithms through different training scenarios and the scans we will conduct together with you

## References

[1] https://ipv6hitlist.github.io
[2] https://www.sciencedirect.com/science/article/abs/pii/S1389128618312003
[3] http://webhome.cs.uvic.ca/%7Ewkui/papers/IPv6Scanning.pdf

## Requirements

Basic knowledge about different machine learning approaches and Internet protocols.

## Contact

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