

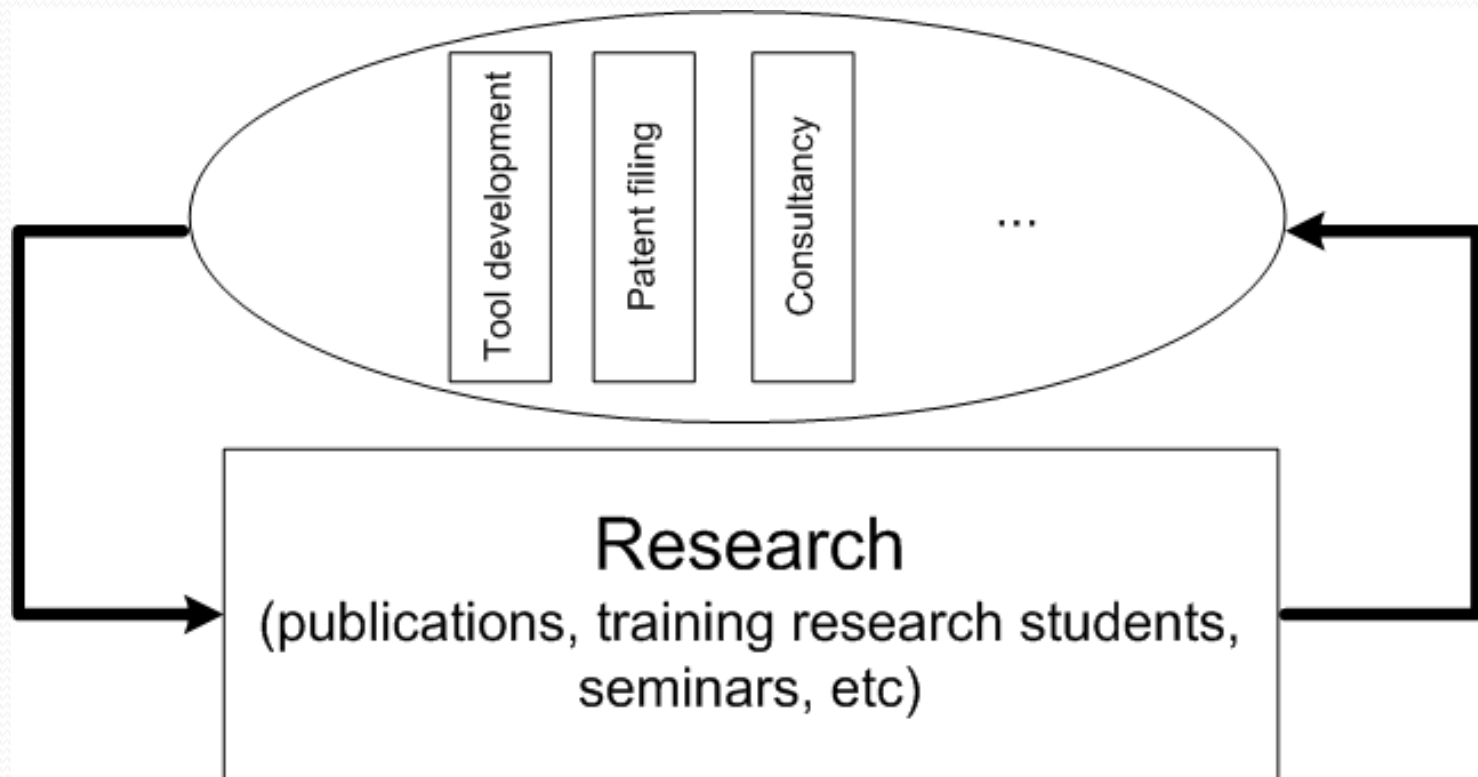
Recent Advances in Active Internet Path Measurement

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OneProbe (oneprobe.org)

- Supported by
 - ITSP funding on “Uncooperative measurement and monitoring of internet path quality with applications”
 - ITSP funding on “Reliable and Accurate Bandwidth Measurement of Asymmetric Network Paths”
 - JUCG on “Performance Monitoring and Measurement of HARNET”
- Publications
 - "A Minimum-Delay-Difference Method for Mitigating Cross-Traffic Impact on Capacity Measurement," *Proc. ACM CoNext*, December 2009.
 - "Design and Implementation of TCP Data Probes for Reliable Network Path Monitoring," *Proc. USENIX Annual Tech. Conf.*, June 2009.
 - "Sampling TCP Data-Path Quality with TCP Data Probes," *Proc. PFLDNet*, May 2009.
- Patents on core measurement methods

Our research model



Research plan

- Develop a suite of non-cooperative measurement methods
 - Metrics: delay, loss, reordering
 - Metrics: loss-delay, capacity, available bandwidth
 - Client-side and server-side measurement
 - Application cover: web, P2P
 - Measurement beyond proxy
 - Wireless network measurement
- Large-scale measurement studies and applications