An Internet-scale Turing Machine and its Applications

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Grand Challenge and Goal：

Developing an evolvable Internet architecture and revolutionizing computing by integrating computing and networking into an Internet-scale computing platform

Summary：

- An Internet-scale Turing machine: Integrating networking and computing
  - A computing model that enables stateless communication and computation and universal computing
  - A switch architecture supporting the computing model
  - New Internet architectures based on the computing model
- Originality of the Internet-scale Turing machine
  - High failure resilience and scalability thanks to the universality and the statefulness
  - Accommodating multiple clean-slate Internet architectures

Social Impact：

- It serves as the foundational framework for an evolvable Internet.
- It breaks the monopoly by hypergiants, thereby fostering a more decentralized, distributed and open Internet ecosystem.
- It prevents large-scale and long-term failures.