

# Preface

Since human beings stepped into the Internet era, our lives are deeply involved with the Internet. Many killer applications are carried out through Internet-based applications. At the same time, motivated by huge financial, political, or other rewards, hackers are exhausting their energy to execute cybercrimes. Due to the nature of the Internet and the lack of cyber laws, cyberspace has been a heaven for intelligent attackers. It is easy to launch attacks, but hard to identify the persons who commit the attacks. It is even harder to bring them to justice.

To date, one critical attack in cyberspace is the distributed denial-of-service (DDoS) attack. My study on cybersecurity started in 2007. I am attracted by this topic not only because of the problem itself but also the bigger research field of cyberspace. It is generally agreed that the current Internet research lacks theoretical foundation. Research indicates that our understanding of the cyberspace is limited and there are a huge unexplored territory in cyberspace for both academical and industrial participants.

This book brief is mainly based on our research of the DDoS problem. For readers' convenience, we try to make each chapter relatively independent. Moreover, we pay a special attention on methodology and mathematical modelling and expect to benefit readers for their potential research in related fields. Constrained by my knowledge and capability, the content of this book brief is very shallow in terms of mathematical modelling. However, I decide not to hide my disadvantage in order to save a bit time for some beginners who may work on the related fields.

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