

Inter-Packet Network Delays as a Time-Series Random Generator:

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1 Introduction

- Random Numbers & Applications
- Random Generators

2 Network Random Generator

- A Posteriori Method
- Inter-Packet Timings & Data Production

3 Results

- ENT results
- NIST STS & Dieharder

4 Conclusions

- Applicability
- Potential Improvement & Future Work

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History of Random

Figure 1: Ancient bone die used by Roman Empire circa 100-300 AD



- In ancient times, random values used for **gambling, forecasting and fortune-telling**
- In modern times, they are used for **Security and Simulation**
- Process random iff all outcomes have equal probability of occurrence.

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Random \Ran"dom\, a.
1. Going at random or by chance; done or made at hazard, or
   without settled direction, aim, or purpose; hazarded
   without previous calculation; left to chance; haphazard;
   as, a random guess.ators
   [1913 Webster]Random Gener
   A Posteriori Method
   Some random truths he can impart. --Wordsworth.
   [1913 Webster]
   ENT results
   No sharper
   So sharp a spur to the lazy, and so strong a bridle
   to the random. --H. Spencer.
   [1913 Webster]
   Applicability
2. (Statistics) Of, pertaining to, or resulting from a
   process of selection from a starting set of items, in
   which the probability of selecting any one object in the
   starting set is equal to the probability of selecting any
   other.
   [PJC]
3. (Construction) of unequal size or shape; made from
   components of unequal size or shape.
   [PJC]
{at random} in a manner so that all possible results have an
   equal probability of occurrence; for processes, each
   possible result is counted separately although the same
   type of result may occur more than once .
{Random courses} (Masonry), courses of stone of unequal
   thickness.
{Random shot}, a shot not directed or aimed toward any
   particular object, or a shot with the muzzle of the gun
   much elevated.
{Random work} (Masonry), stonework consisting of stones of
   unequal sizes fitted together, but not in courses nor
   always with flat beds.
   [1913 Webster]

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