

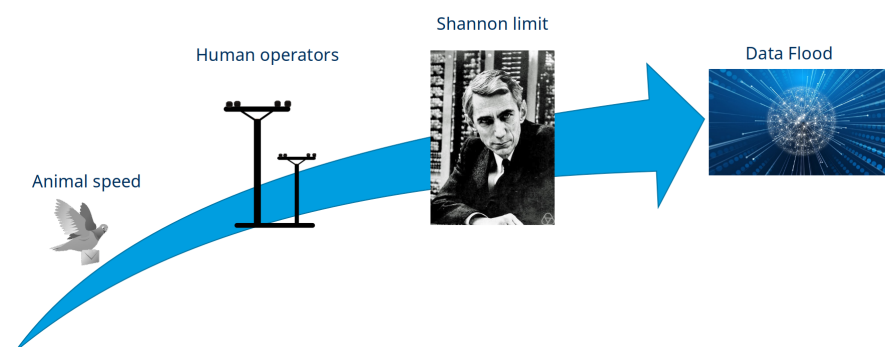
Post-Shannon to stop the Data Flood

Opening for a Position as Student Research Assistant (SHK)

Description

Since current communication methods are getting closer and closer to the theoretical limit postulated by Claude Shannon 70 years ago, new avenues of research are necessary to still the demand for even more connectivity in the future. While any communication goal can be achieved using Shannon's understanding of communication, certain goals can be achieved by transmitting significantly less data than Shannon's theory demands, thus going beyond Shannon's limit in a manner of speaking. Post-Shannon theory thus considers goal-oriented communication, which allows for drastic improvements over traditional communication methods by exploiting knowledge of the goal of the communication. A prominent communication goal is identification, in which the goal is for the receiver to verify in a binary hypothesis test whether the transmitter sent a specific identity or not. This is, for example, of interest in massive machine-type communications and digital twin applications.

A history of communication limits



Tasks

- extend our Python framework for Identification Coding
- investigate new scenarios and channels
- chance to bring your own ideas into this emerging research field

Ideal Requirements

- very good understanding of information and coding theory
- good knowledge of Python
- you work independently, precisely and proactively
- you like to present your work in a coherent and comprehensible way

Contact: [Caspar v. Lengerke](#)