Inferring Communication Network Topology via Transfer Entropy

**Objective**
- Infer links in a network using packet exchange information
- Non-invasive
- Access to time instants when packets arrive
- Use causal inference theory

**Central Idea**

\[
\begin{align*}
Y_t &\rightarrow Y_{t+1} \\
X_t, Y_t &
\rightarrow Y_{t+1} \checkmark
\end{align*}
\]

\[\Rightarrow X \rightarrow Y\]

**Contribution**
- Transfer Entropy – model independent!
- 2-step Network Inference Algorithm
  - Better reconstruction performance
  - Low time complexity

**Future Work:**
- Generative models for efficient TE estimation

**Other Applications**

[Image of diverse applications and a Keep Calm and Support Cancer Research poster]