

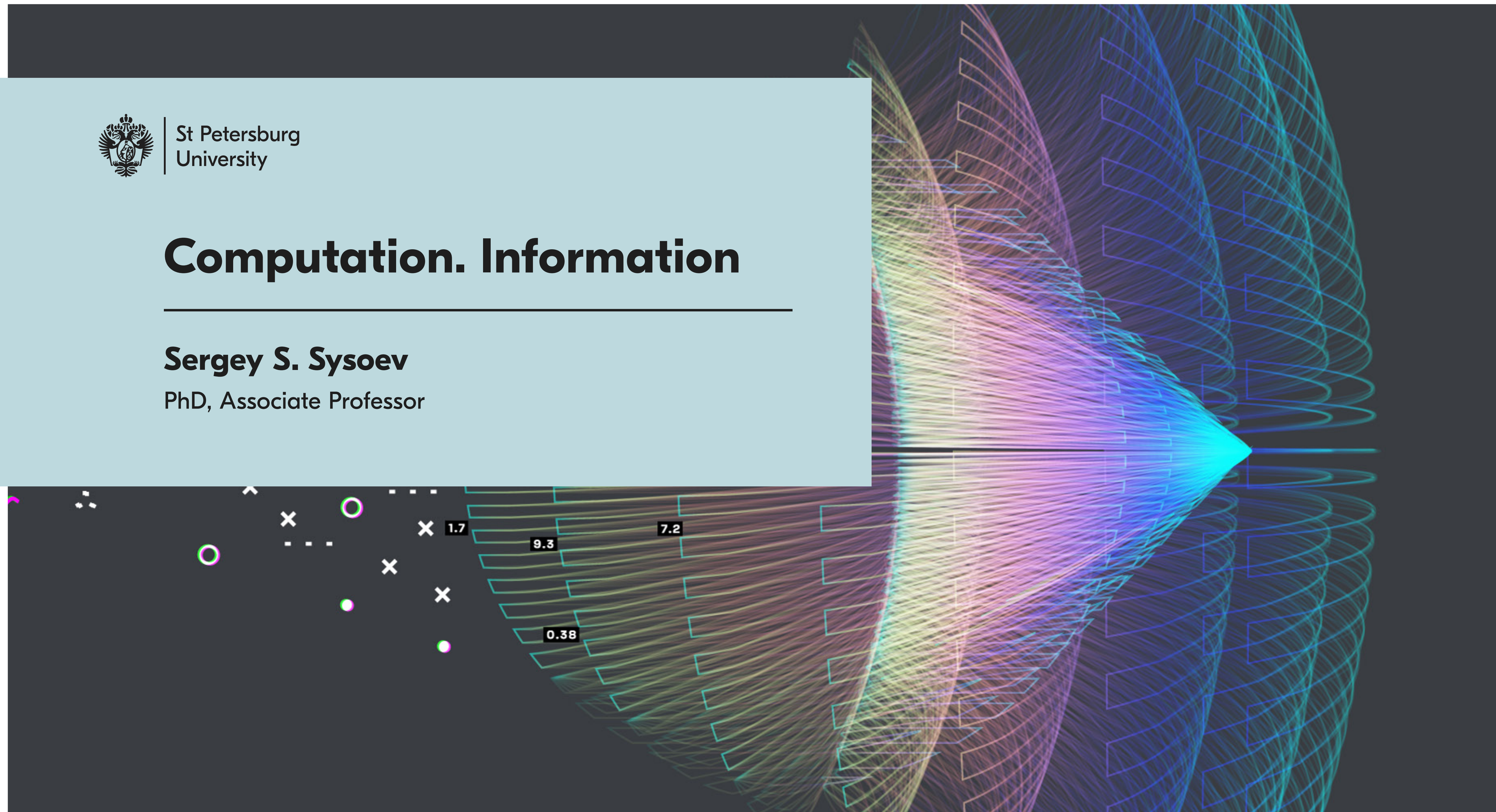


St Petersburg
University

Computation. Information

Sergey S. Sysoev

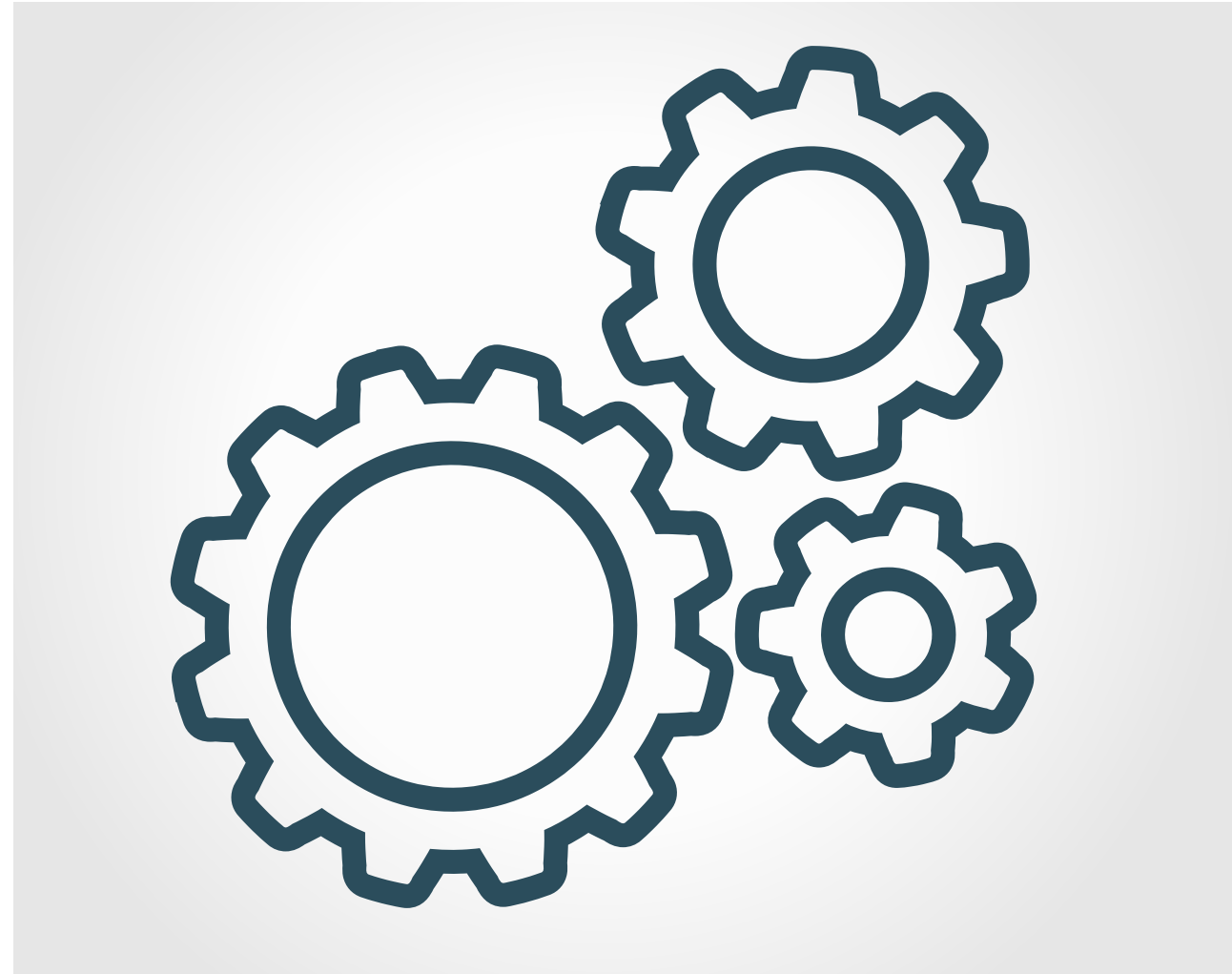
PhD, Associate Professor



The Introduction to Quantum Computing

Computation – ?

Computation



A physical process

- 1 **finite** in time
- 2 fixed set of **states**

Information – ?

Information – ?



An interpretation
of the particular system's state

**Fixed set
of distinguishable states.**

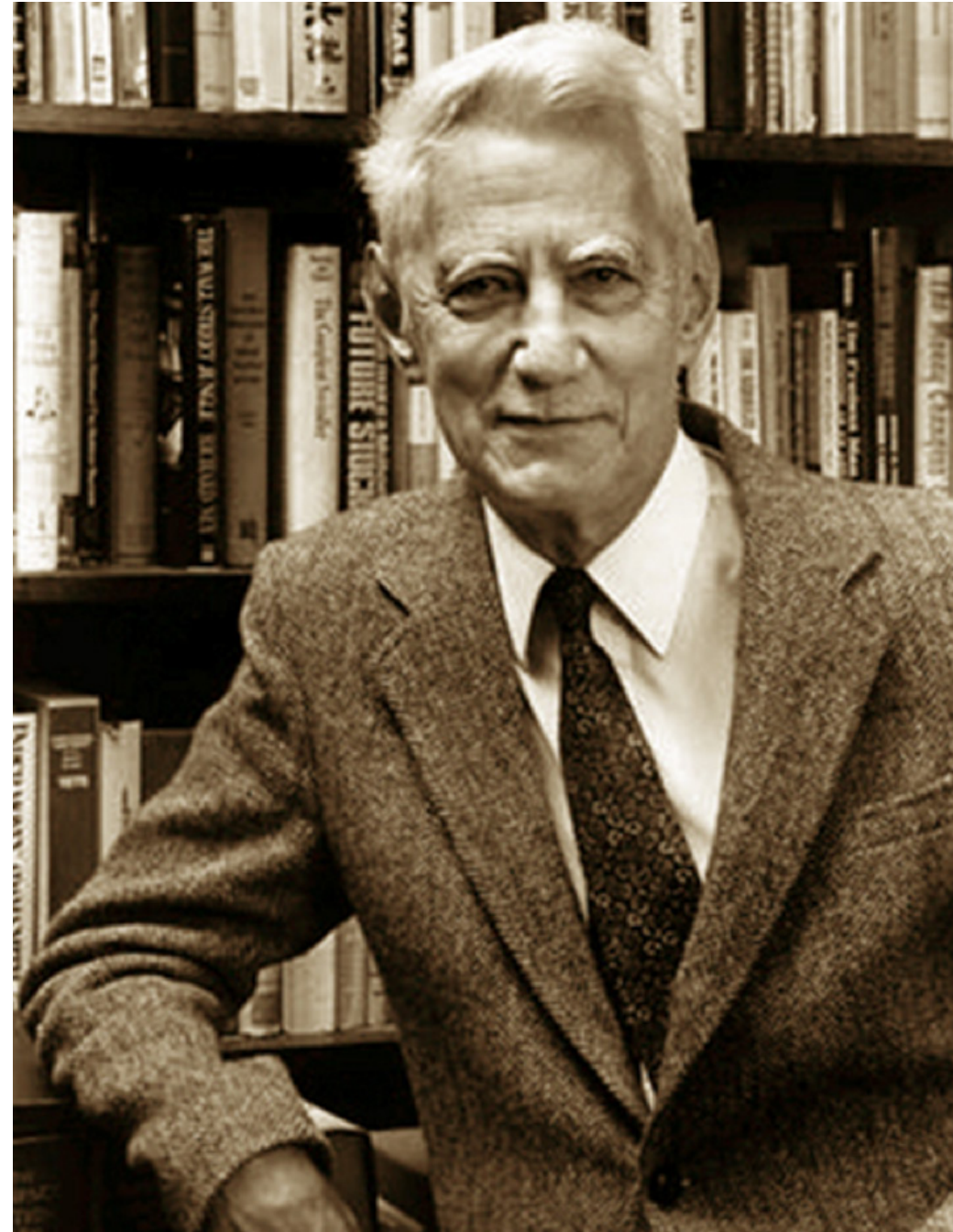


A quantity of...



- 1 Information
- 2 Computation

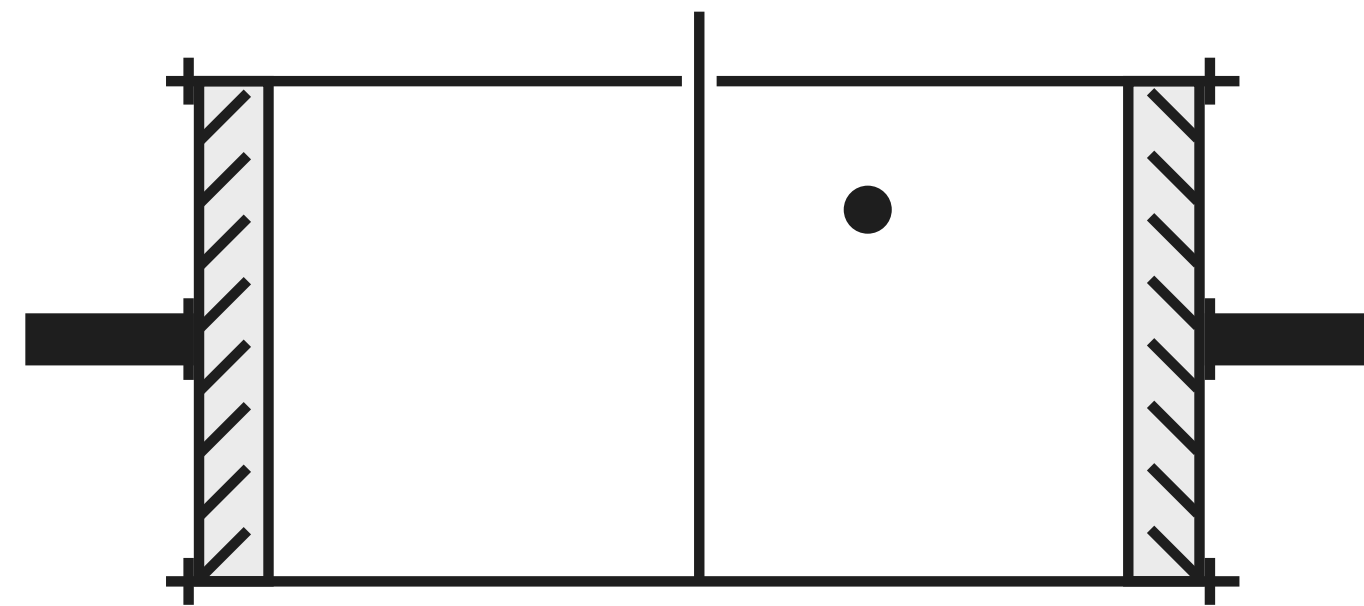
Quantity of Information



Claude Shannon
(1916–2001)

$$I = - \sum_{i=1}^n P_i \log_b(P_i)$$

Quantity of Information



Szilard's Engine

Week Plan

- ~~Learning objectives~~
- ~~Computation. Information~~
- Computational system characteristics
- The goal of computations. Universality. Algorithm
- Computational Complexity
- Quantum computing
- Quantum effects
- The Multiverse interpretation of quantum mechanics

Used materials

1. <http://landley.net/history/mirror/pre/shannon.html>
2. <https://ru.wikipedia.org/w/index.php?curid=2075088> (photo of Claude Shannon)



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