**Номинация I. «Перевод специального текста». (Научные открытия 21 века)**

Задание. Перевести с английского языка на русский язык текст научно-технической тематики

*Scientific Reports*

**Role of non-linear data processing on speech recognition task in the framework of reservoir computing**

Artificial neural network algorithms outperform humans on recognition tasks like image or speech recognition, by leveraging deep networks of interconnected non-linear units called formal neurons. The goal of neural networks is to extract the features and classify input data through learned non-linear transformation. Running such algorithms on a classical computer is costly energetically: to overcome this issue, neuromorphic approaches propose to implement them physically. In particular, reservoir computing is a kind of recurrent neural network that has been widely used to test the efficiency of hardware for neuromorphic computing because it has a simplified architecture and learning procedure. The input is sent to a neural network with fixed recurrent connections called a reservoir. The goal of the reservoir is to separate the different kinds of inputs, such that after this transformation, the classification can be done by a linear transformation. The response of the neurons of the reservoir are combined linearly with trained connections to construct the output. Since the connections in the reservoir are random and fixed, it is easier to fabricate it in hardware and then train the output connections, often emulated in software, with linear regression.

Speech recognition is a widely used class of benchmark tasks performed to test the efficiency of a neural network. It is especially employed in the case of reservoir computing because the recurrent connections of the reservoir create an intrinsic memory that is useful to classify time-varying inputs. Generally, this task requires frequency decomposition prior to the neural network because the acoustic features are contained in the frequency rather than in the amplitude of the time-varying signal. These decompositions return the amplitude of the signal in different frequency channels as a function of time. The neural network then extracts the acoustic features contained in the frequency information. Several frequency decomposition methods have been reported in the literature: Mel-frequency cepstral coefficients (MFCC) and Lyon’s cochlear model (cochleagram) are the most common methods since they mimic the filtering that occurs biologically.

Abreu Araujo, F., Riou, M., Torrejon, J. *et al.* Role of non-linear data processing on speech recognition task in the framework of reservoir computing. *Sci Rep* **10**, 328 (2020). <https://doi.org/10.1038/s41598-019-56991-x>

**Номинация II. Художественный перевод (проза)**

Задание: Перевести с английского языка на русский язык отрывок из романа Рэя Найлера "Гора в море".

“Angle the camera down,” Evrim said. “Slowly—try not to make any sharp movements.”

Altantsetseg’s fingers flexed and the submersible’s beams played across a bulkhead. There was movement at the edge of the screen—a piece of the floor that came alive and crawled away.

“Pan right.”

The beam played across the encrusted surface of the bulkhead. More movement: something flashed past the camera, above it and close.

It came into view.

The octopus was standing, the tips of its arms the only things in contact with the floor of the chamber. As in the video before, it was in the full “Nosferatu” pose—tall, its mantle vertical above its head, its arms and web spread. The threat pose. And like before, the octopus, easily as tall as a human being, was almost white.

Speak to me.

The octopus began to make passing cloud patterns on its skin. The patterns started on its mantle and moved downward between its eyes and onto its web, where each symbol paused a moment before fading and being replaced with a new one, even slower than they were in the earlier film Ha had watched.

It is trying to be understood. Like a native speaker, speaking slowly to a foreigner.

“It wants to communicate,” Ha said aloud. “It’s trying to make the submersible understand. Look how intentional the sequence is.”

“Yes,” said Evrim. “I see it. Slower, even, and clearer than before.”

“It’s enunciating.” Without looking down at her terminal, Ha was sketching the symbols she could catch in the sequence. Later she would be able to go over all of it in detail.

The same symbol was repeated, at intervals:

But there were many more. Ha sketched as many as she could.

But what was that?

“Pan down. Focus behind the octopus. Move slowly. There. My god.”

Smaller octopuses. At least a dozen of them, moving across the walls and floor. Juveniles—their arms foreshortened, their heads too large for their bodies. Another shape, beyond them: two other adults, drifting near the edge of the water’s murky visibility. One of them was a sickly white—not the pearl of the communicating octopus, but an unhealthy bleached look, patched in places with rusty spots. It was missing two of its tentacles. “There,” said Ha. “An old one. The others must be taking care of it…”

“An entire family group,” said Evrim. “I count at least sixteen of them…”

Everything went white.

“Damn,” Altantsetseg mumbled, her hands flinching as if burned. “We move. Backward and downside up. With quickness.”

The camera tried to find focus again. When it did it was macroed in on a line of suckers across its lens.

“Submersible has small defensive weapon. Electrical charge. I will—”

“Don’t,” Ha and Evrim said simultaneously.

The suckers were gone. Dark water.

“We’re outside dead boat,” Altantsetseg said.

The camera snapped into focus, catching the elongated shape of an octopus jetting away. As they watched, the creature swung a wide arc and plunged back into the open hatch of the ship.

“Not damaged. Still plenty of power. We go back. Find other door into dead boat.”

“No,” Ha said. Was that…? Yes. There. “No. Bring the submersible back. We have enough video to analyze for now. I want to study the data. Bring the submersible back to shore. Bring it back slowly, and in a straight line.”

This is the mystery we thrust ourselves into: A single neuron is not conscious of its existence. A network of billions of unconscious single neurons is. These monads living in a world without perception become a being that perceives, thinks, and acts. Consciousness lies not in neurons, but in a sophisticated pattern of connectivity.

—Dr. Arnkatla Mínervudóttir-Chan, Building Minds

Ray Nayler

**The Mountain in the Sea**

New York: MCD, 2022

**Номинация II. Художественный перевод (поэтический текст)**

Задание: Перевести с английского языка на русский.

You Can Fly

You can fly and follow the stars

you don't have to cry

you don't have to crawl

you don't have to feel unbalanced and fall or be small

you can drink the river dry

you don't have to spiral into chaos

you can be grounded as the clouds without any walls

you don't have to plummet into the shadows

and live alone, a cyclone in the darkness spinning.

You can fly and follow the stars

you can smile and light an eternal, internal, external spark

you can laugh in ecstasy and not know why-

others too, they're not laughing in your wide-open arms

you can let the oceans shriek, reach out for distant shores

for what is already rightfully yours, ours, this whole universe.

You can fly and follow the stars.

Don't forget the silence in the mouth of a flower

letting nectar speak also sings

and has an ancient sparkling apiary

remember, there's an amber locket in your eyes

that never dies; it just joins the stars

when those river banks swell grow high

you-too, can leap like a salmon into the sky and join those firefly stars.

You can fly and follow the stars

you don't have to cry

you don't have to crawl

you don't have to feel unbalanced and be small

you can drink the river dry everlasting perpetual.

**Номинация III Перевод краеведческого текста.**

Задание. Перевести с русского языка на английский язык краеведческий текст.

# Бирюзовое кольцо России - новый туристический бренд в сердце России

Коллекция маршрутов России постоянно растет и позволяет выбрать направление на любой вкус и кошелек. В ряду самых молодых и интереснейших маршрутов России – Бирюзовое кольцо России.

Бирюзовое кольцо в составе 7 городов Орловской области расположилось всего в 370 километрах от Москвы. Путешествуя по Бирюзовому кольцу, в постоянном и бесконечном сопровождении высокого неба и вьющихся лент рек, ручьев и ручейков всех возможных и невозможных оттенков бирюзы, не раз можно будет услышать – единственный, древнейший. По степени концентрации таких объектов этот маршрут даст фору практически любому европейскому туру.

Отражая народное поверье в волшебные силы камня бирюза, маршрут объединяет все, что может сделать путешественника счастливым. А это – древние летописные города и места великих сражений, монастыри и церкви, памятники культуры разных эпох и усадьбы, мастерские народных промыслов и природные объекты Среднерусской возвышенности.

**Новосиль** – древнейший город Бирюзового кольца, один из старейших городов России, но и крупный центр активого глэмпинга и парапланеризма. Если вы вдруг заблудились по дороге, но везде встречаете – то пышущих драйвом и силой велотуристов, то сверкающих веслами байдарочников, то сосредоточенных сап-серферов, а на линии горизонта где-то парит яркий параплан – можете не сомневаться, вы – в Новосиле.

Активный глэмпинг «Сплав стихий» расположен на живописном берегу Зуши. На территории 5 гекторов есть все, что нужно путешественнику для комфортного отдыха на природе. Водные путешествия на байдарках и катамаранах, веломаршруты заботливо продуманы в конфигурациях лайт и актив. Для проживания можно выбрать сафари-тенты, кемпнинг или забронировать место под палатку.

Обязательно надо записаться на экскурсии. Посмотреть усадьбу Шатиловых – одну из первых в России научных сельхозстанций и первый в стране питомник древесных саженцев. Деревья-великаны знаменитого Шатиловского леса достойны отдельного внимания. Не менее интересно будет в селе Голунь – бывшем имении М.М. Голицына, где по преданию в хрустальном гробе граф спрятал красавицу и свои сокровища.

Источник: <https://moya-planeta.ru/reports/view/biryuzovoe_koltso_rossii_novyj_turisticheskij_brend_v_serdtse_rossii?ysclid=ln90ugzeyj881492124>