

Investigation of the possibility of constructing neural network models for thematically and stylistically determined poetic texts

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Outline

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What is poetry: rhythm schemes

Twinkle Twinkle little star, **A**
How I wonder what you are, **A**
Up above the were so high, **B**
Like a diamond in the sky. **B**

Examples

- AbAb CCdd EffE gg - Onegin stanza
- abab cdcd efef gg - Shakespeare's sonnet

What is poetry: stress pattern, meter

Iamb

Whose woods | these are | I think | I know.

Trochee

Irish | poets | learn your | trade.

Anapest

As I came | to the edge | of the woods.

Dactyl

Half a league, | Half a league, | Half a league, | onward.

Spondee

Now, | by | heaven, | My blood begins my safer guides to rule, ...

What is poetry: full view

The expense | of spi | rit in | a waste | of shame
Is lust | in ac | tion; and | till ac | tion, lust
Is per | jured, mur | derous, bloo | dy, full | of blame,
Savage, | extreme, | rude, cru | el, not | to trust,
Enjoy'd | no soo | ner but | despi | sed straight,
Past rea | son hun | ted, and | no soo | ner had
Past rea | son ha | ted, as | a swal | low'd bait
On pur | pose laid | to make | the ta | ker mad;

A

B

A

B

C

D

C

D

Mad in | pursuit | and in | posses | sion; so;
Had, hav | ing, and | in quest | to have, | extreme;
A bliss | in proof, | and proved, | a ver | y woe;
Before, | a joy | proposed; | behind, | a dream.
All this | the world | well knows; | yet none | knows well
To shun | the heaven | that leads | men to | this hell.

E

F

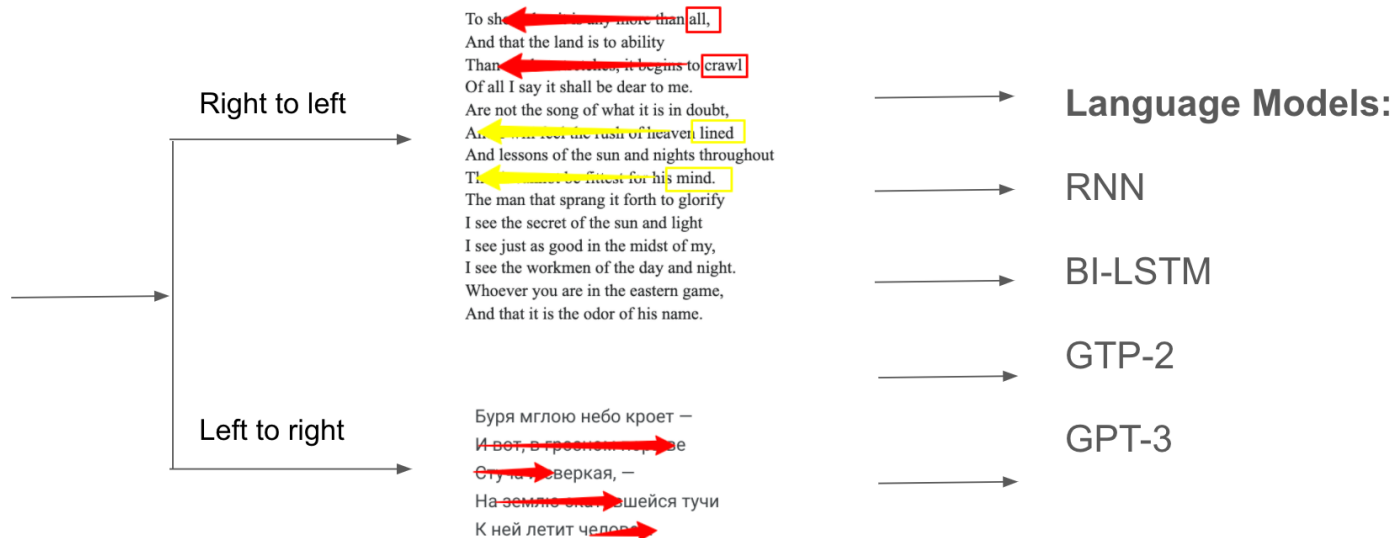
E

F

G

G

Existing approaches for generating poetry



Right to left generation

“Shall I Compare Thee to a Machine-Written Sonnet? An Algorithmic Approach to Sonnet Generation”

https://github.com/m-rodin/poetry_generation

To show that it is any more than all,
And that the land is to ability
Than all that stretches, it begins to crawl
Of all I say it shall be dear to me.
Are not the song of what it is in doubt,
And I will feel the rush of heaven lined
And lessons of the sun and nights throughout
That it cannot be fittest for his mind.
The man that sprang it forth to glorify
I see the secret of the sun and light
I see just as good in the midst of my,
I see the workmen of the day and night.
Whoever you are in the eastern game,
And that it is the odor of his name.

Толпой твоих над ног рабы
Лесу наместо свой младого
Лесу европа средь черты
Милее вы меня готово.
Часы забав и свой лозой
Печаль везде сияет тьмой
Везде увял волнение тени
Найду живу златом забвении.
Вздохнет питомцы звать жидов
Найду везде моей позора
И лаской наш тебя укора,
Когда не ввек меня, умов.
Когда не кто еще дерзаю,
Когда не здесь живу, не знаю.

Left to right generation: Finetune GPT2

Буря мглою небо кроет —
И вот, в грозном порыве
Стуча и сверкая, —
На землю скатившейся тучи
К ней летит человек.

Он видит — над ним
Штурмуя крыльями,
Бурный вихрь его валит...
Но вдруг он видит: туча мчит!
Небось не постоит на месте

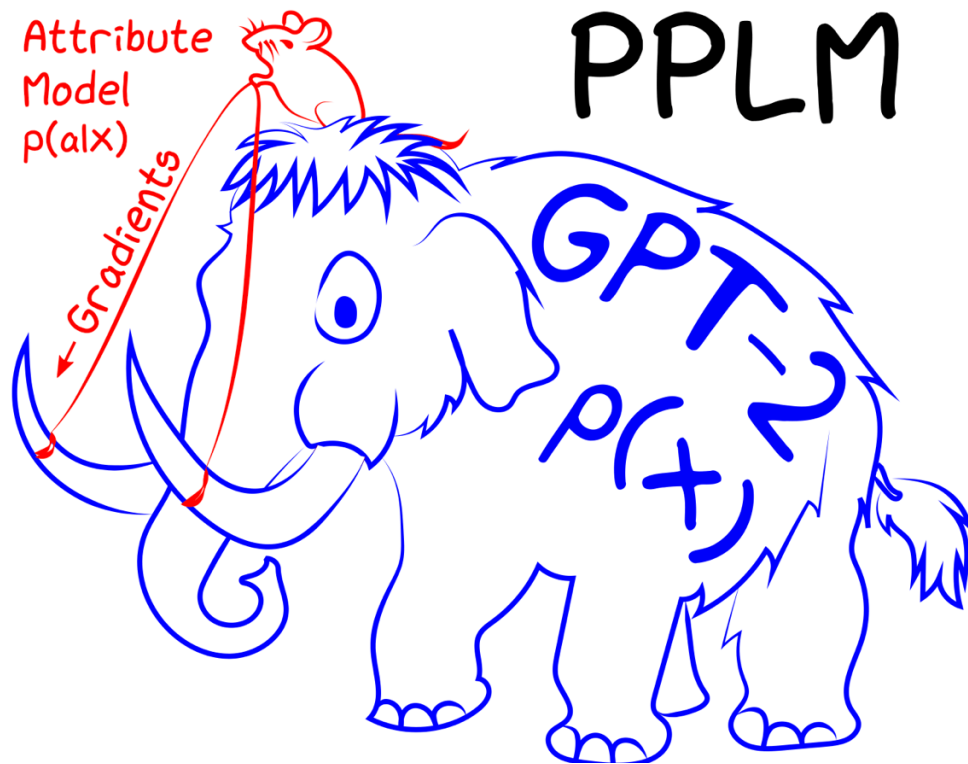
Но не страшны ни бури, ни вьюги,
Ни зноя густые снега!
Как же так: как будто белей,
Чем белизна твоя!..
Верно, так от голода
Береговая полоса,
От ветра и вьюги...
Да, верно, так было с тобой,
Все мы голодные и злые люди;
Ты, земля, ты моя, —
Так помоги же нам, Боже правый!
Дай нам силу воли свою,
Чтоб нам жить дружно, веселиться,
А там видно будет!

Left to right generation: GPT2 sampling

- Greedy
- Top-k + Temperature
- Beam search
- Nucleus sampling
- etc

- CTRL: A Conditional Transformer Language Model for Controllable Generation
- Plug and Play Language Models: A Simple Approach to Controlled Text Generation

Thematic conditioning: Plug and Play Language Models



- Finetune GPT models on poetry for getting poetic base model for PPLM
- Experiments with sampling for better poetic style
- Experiments with different attribute models