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Aug 7 · 6 min read

Romance Novels, Generated by Artificial Intelligence

I've always been fascinated with romance novels—the kind they sell at the drugstore for a couple of dollars, usually with some attractive, soft-lit couples on the cover. So when I started futzing around with text-generating neural networks a few weeks ago, I developed an urgent curiosity to discover what artificial intelligence could contribute to the ever-popular genre. Maybe one day there will be entire books written by computers. For now, let's start with titles.

I gathered over 20,000 Harlequin Romance novel titles and gave them to a neural network, a type of artificial intelligence that learns the structure of text. It's powerful enough to string together words in a way that seems almost human. 90% human. The other 10% is all wackiness.
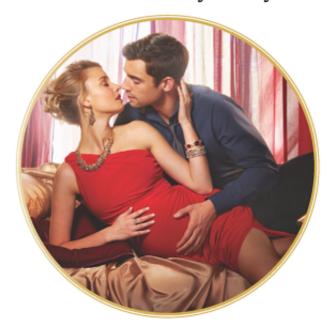
I was not disappointed with what came out. I even photoshopped some of my favorites into existence (the author names are synthesized from machine learning, too). Let's have a look by theme:

Babies, Babies, and More Babies

HARLEQUIN
Presents

USA TODAY BESTSELLING AUTHOR

Panny Logan

The Unlikely Baby

A common theme in romance novels is pregnancy, and the word "baby" had a strong showing in the titles I trained the neural network on. Naturally, the neural network came up with a lot of baby-themed titles:

- Mediterranean Baby

- The Baby Pregnancy

- The Baby Barbarian

- Blackmailed Baby

- The Greek Baby Boss

- Becoming the Baby Count

- The Baby Doctor Seduction

- Mistress Man's Baby

- Secret Secret Baby

- The Surgeon's Baby Surgeon

- Pregnant for the Rage

- Double Baby

- A Irresistible Good Baby

Tycoons, Royalty, Playboys, and Bosses

There's an unusually high concentration of sheikhs, vikings, and billionaires in the Harlequin world. Likewise, the neural network generated some colorful new bachelor-types:

- His Pregnant Prince

- The Sheikh's Marriage Sheriff

- Purter the Playboy

- The Prince's Virgin's Virgin

- Storm Jake

- The Consultant Count

- Virgin Viking

- The Prince's Round Brothers

- Prince Dad Sheikh?

- Butterfly Earl

- Sin Secret Ray

- Count Sergei's Proposal

- The English Millionaire Investigator

- The Sheikh's Convenient Desires

I have so many questions. How is the prince pregnant? What sort of consulting does the count do? Who is Butterfly Earl? And what makes the sheikh's desires so convenient?

Gettin' Married

Although there are exceptions, most romance novels end in happily-ever-afters. A lot of them even *start* with an unexpected wedding—a marriage of convenience, or a stipulation of a business contract, or a sham that turns into real love. The neural network seems to have internalized something about matrimony:

- Mistress Wife

- Husband Bride

- Marriage Valley

- Her Marriage Marriage

- The Husband Man

- Missingbroom Bride

- The Man's Marriage Touch

- The Billionaire's Marriage Valley

- The Savage Bride

- Consultant Bride

They Call Me Doctor Love

Doctors and surgeons are common paramours for mistresses headed towards the marriage valley:

- Surgery by the Sea

- The Strange Consultant Surgeon

- The Doctor's Children's Proposal

- The Man for Dr. Husband

- Dear Dr. High-Kungly Seductive Mistake

- My, Hot Doctor

- Surgery Seduction

Under the Mistletoe

HARLEQUIN

Presents

USA TODAY BESTSELLING AUTHOR

Carjery Wilson

His Final Santa

◆ CHRISTMAS WITH A TYCOON ◆

Christmas is a magical time for surgeons, sheikhs, playboys, dads, consultants, and the women who love them:

- Winning for Christmas

- Christmas of the Year

- Christmas Pregnant Paradise

- Christmas with her Blackmail

- Desert Santa

- The Santa Wife

- Impossible Santa Wife

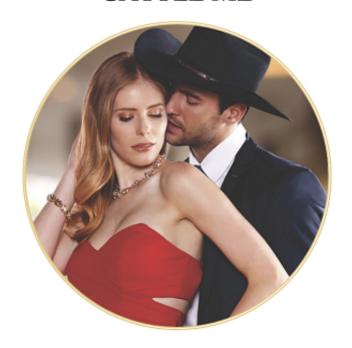- The Boss's Secret Conspiration to Christmas Wish

- Mission: Christmas to Knith

What or where is Knith? I just like Mission: Christmas…

Home on the Range

This neural network has never seen the big Montana sky, but it has some questionable ideas about cowboys:

- Forbidden Texas, Texan

- Midwife Cowpoke

- Pregnant Cow

- Cattle Lover

- Under the Cowboy

- In the Mountain for the Tender Seduction

The Raunchy Ones

The neural network generated some decidedly PG-13 titles:

- The Sexy Affair

- Dangerously! Seduction

- Private Part

- Inheritance Sex

- The Sex Lovers

- Naked Hot Ranger

- The Virgin Date of Sexy

- Sex Revenge

Rather Depressing Books

They can't all live happily ever after. Some of the generated titles
sounded like M. Night Shyamalan was a collaborator:

- The Blood!

- Sob Over the Boss

- Married in Fear

- Christmas By Fear

- Hot Fearhaper

How did the word "fear" get in there? It's possible the network
generated it without having "fear" in the training set, but a subset of
the Harlequin empire is geared towards paranormal and gothic
romance that might have included the word (*Note: I checked, and
there was "Veil of Fear" published in 2012).

Well, You Tried, Computer

To wrap it up, some of the adorable failures and near-misses generated
by the neural network:

- A Risk Worth Dad

- Glord in the Dark

- The Juggers

- Can't Good

- Seeping Baby Man

- Never Happened

- I Hate the Marine

- Romancy Heart

- Uncristible

- Undercover Movercum

- Captive Something Bachelor

- A Perfect Giantess

- Falling for Her Doorstep

- Nookan's Buttymance

- Crassion

- Crom Pregnancy Hospital

I hope you've enjoyed computer-generated romance novel titles half as much as I have. Maybe someone out there can write about the Virgin Viking, or the Consultant Count, or the Baby Surgeon Seduction. I'd buy it.

Methods

I built a webscraper in Python (thanks, Beautiful Soup!) that grabbed about 20,000 romance novel titles published under the Harlequin brand off of FictionDB.com. Harlequin is, to me, synonymous with the romance genre, although it comprises only a fraction (albeit a healthy one) of the entire market. I fed this list of book titles into a recurrent neural network, using software I got from GitHub, and waited a few hours for the magic to happen. The model I fit was a 3-layer, 256-node recurrent neural network. I also trained the network on the author list

in to create some new pen names. For more about the neural network I used, have a look at the fabulous work of Andrej Karpathy.

Erratum

I discovered that "Surgery by the Sea" is actually a real novel, written by Sheila Douglas and published in 1979! So, this one isn't an original neural network creation. Because the training set is rather small (only about 1 MB of text data), it's to be expected that sometimes, the machine will spit out one of the titles it was trained on. One of the more challenging aspects of this project was discerning when that happened, since the real published titles can be more surprising than anything born out of artificial intelligence. For example: "The $4.98 Daddy" and "6'1" Grinch" are both real. In fact, the very first *romance novel published by Harlequin was called "The Manatee".*