Clustering the stack traces of ML/DL applications using various models

Amin Ghadesi, Roozbeh Aghili

Winter 2022

Problem

- Bug triage
- A lot of bugs
- Without any label data

Importance

- Saves time and energy
- Correct assignment of errors
- Clustering not Classification

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eclipse

337k bugs
2001 - 2010

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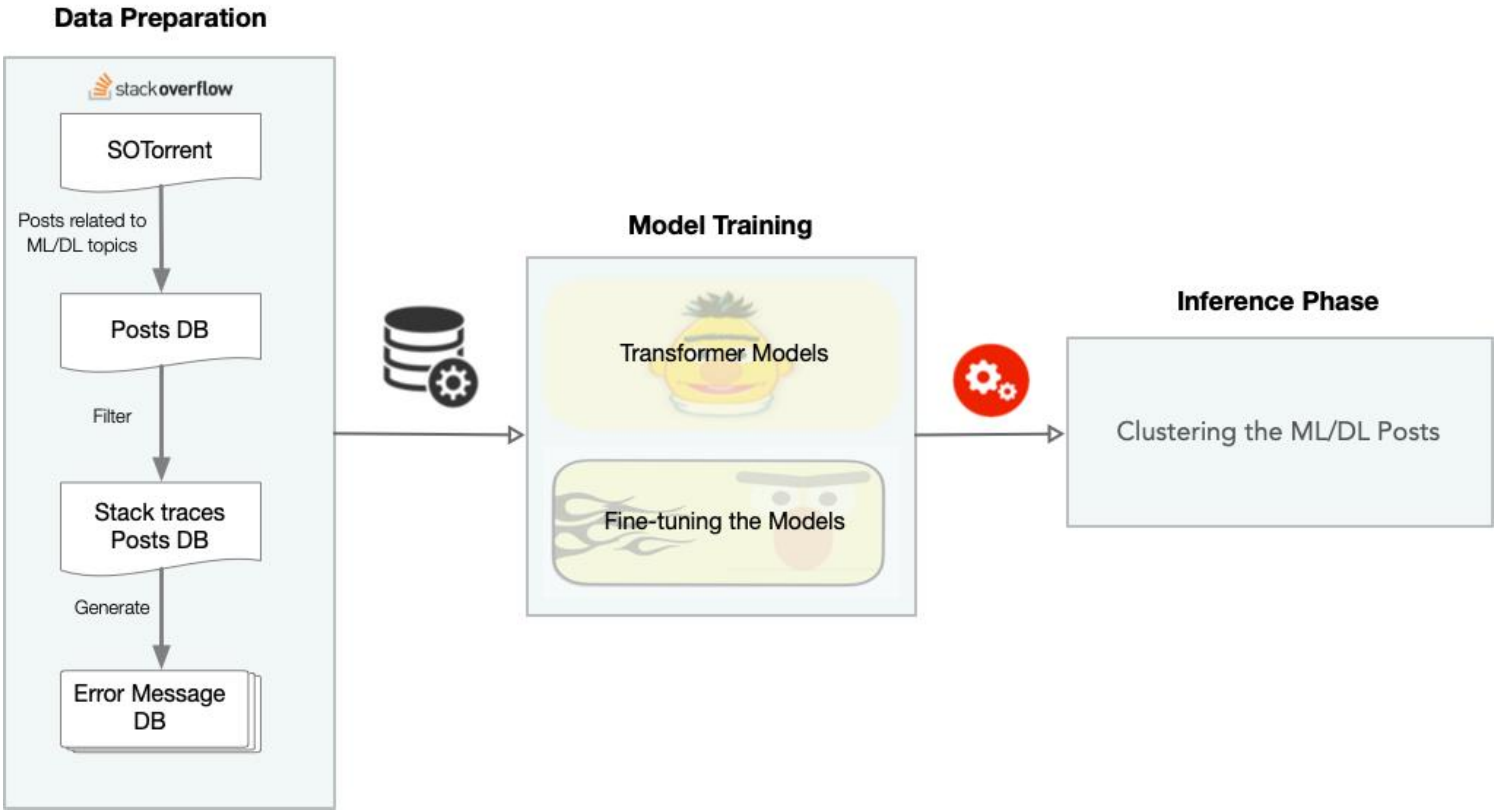
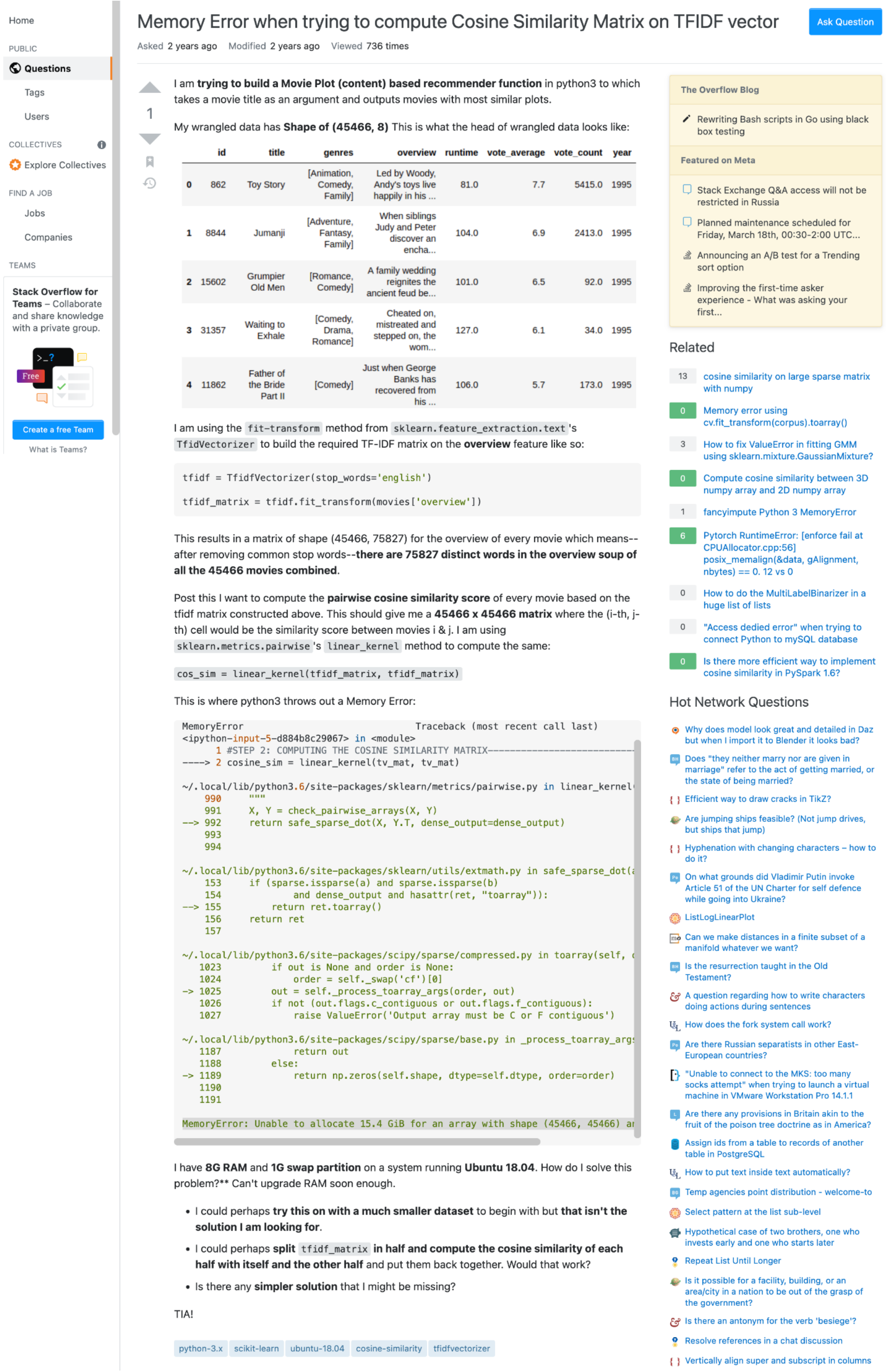

Data Preparation
stackoverflow
SOTorrent
Posts related to ML/DL topics
Posts DB
Filter
Stack traces Posts DB
Generate
Error Message DB
Model Training
Transformer Models
Fine-tuning the Models
Inference Phase
Clustering the ML/DL Posts



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Memory Error when trying to compute Cosine Similarity Matrix on TFIDF vector

Asked 2 years ago Modified 2 years ago Viewed 736 times

I am **trying to build a Movie Plot (content) based recommender function** in python3 to which takes a movie title as an argument and outputs movies with most similar plots.

My wrangled data has **Shape of (45466, 8)** This is what the head of wrangled data looks like:

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tfidf = TfidfVectorizer(stop_words='english')

tfidf_matrix = tfidf.fit_transform(movies['overview'])
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This results in a matrix of shape (45466, 75827) for the overview of every movie which means--after removing common stop words--**there are 75827 distinct words in the overview soup of all the 45466 movies combined**.

Post this I want to compute the **pairwise cosine similarity score** of every movie based on the tfidf matrix constructed above. This should give me a **45466 x 45466 matrix** where the (i-th, j-th) cell would be the similarity score between movies i & j. I am using `sklearn.metrics.pairwise`'s `linear_kernel` method to compute the same:

`cos_sim = linear_kernel(tfidf_matrix, tfidf_matrix)`

This is where python3 throws out a Memory Error:

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- I could perhaps **split** `tfidf_matrix` **in half and compute the cosine similarity of each half with itself and the other half** and put them back together. Would that work?
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python-3.x scikit-learn ubuntu-18.04 cosine-similarity tfidfvectorizer

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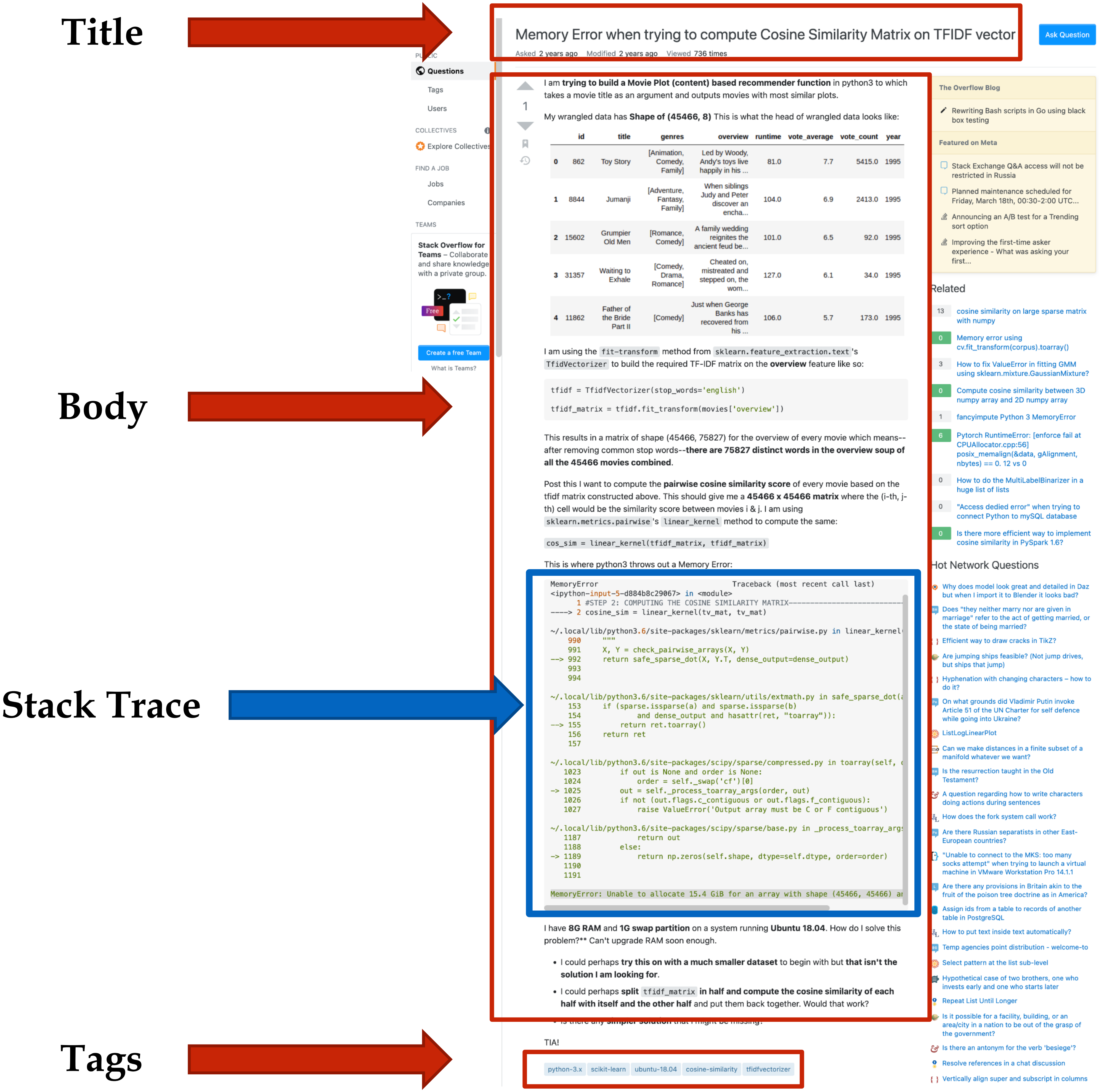

Title

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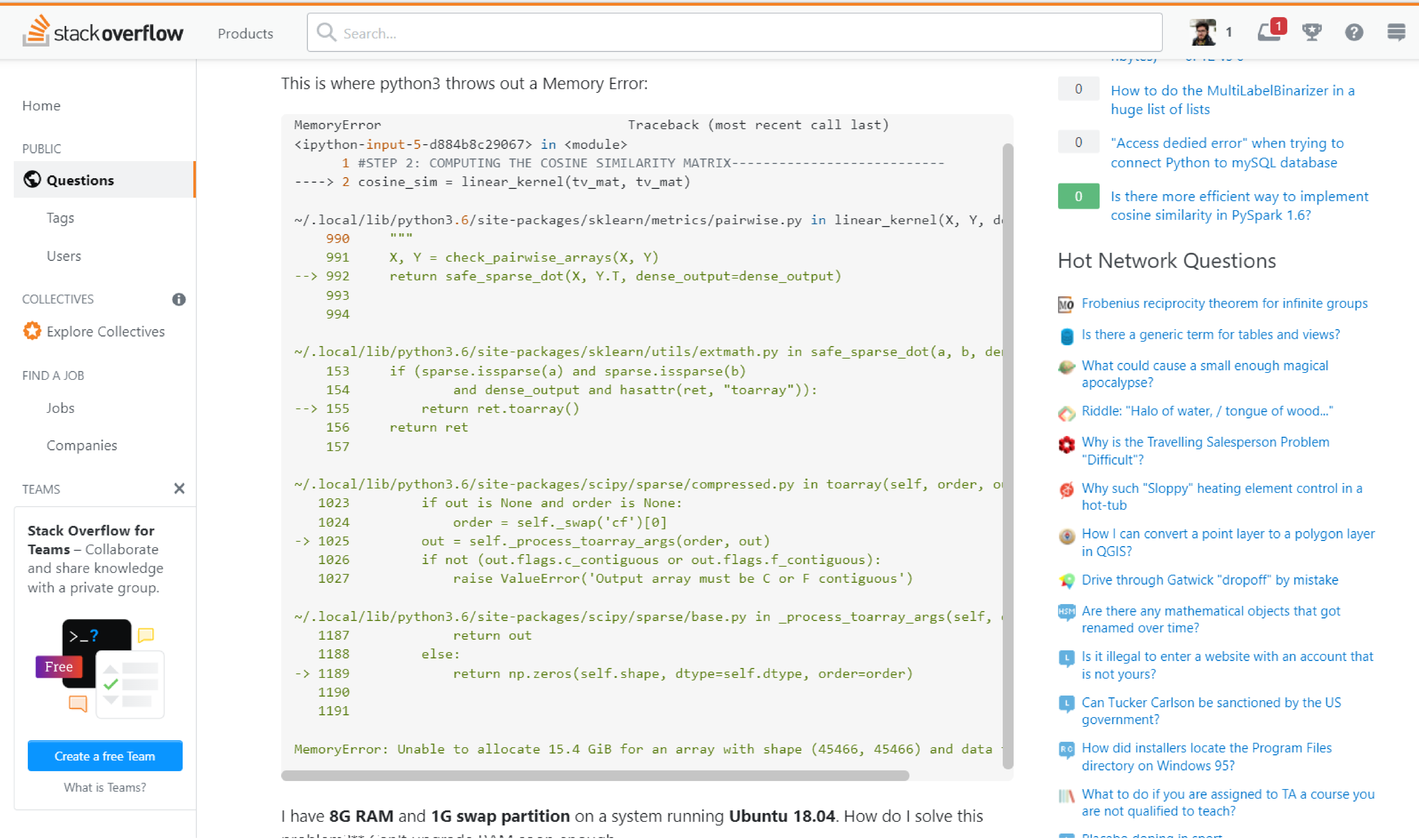

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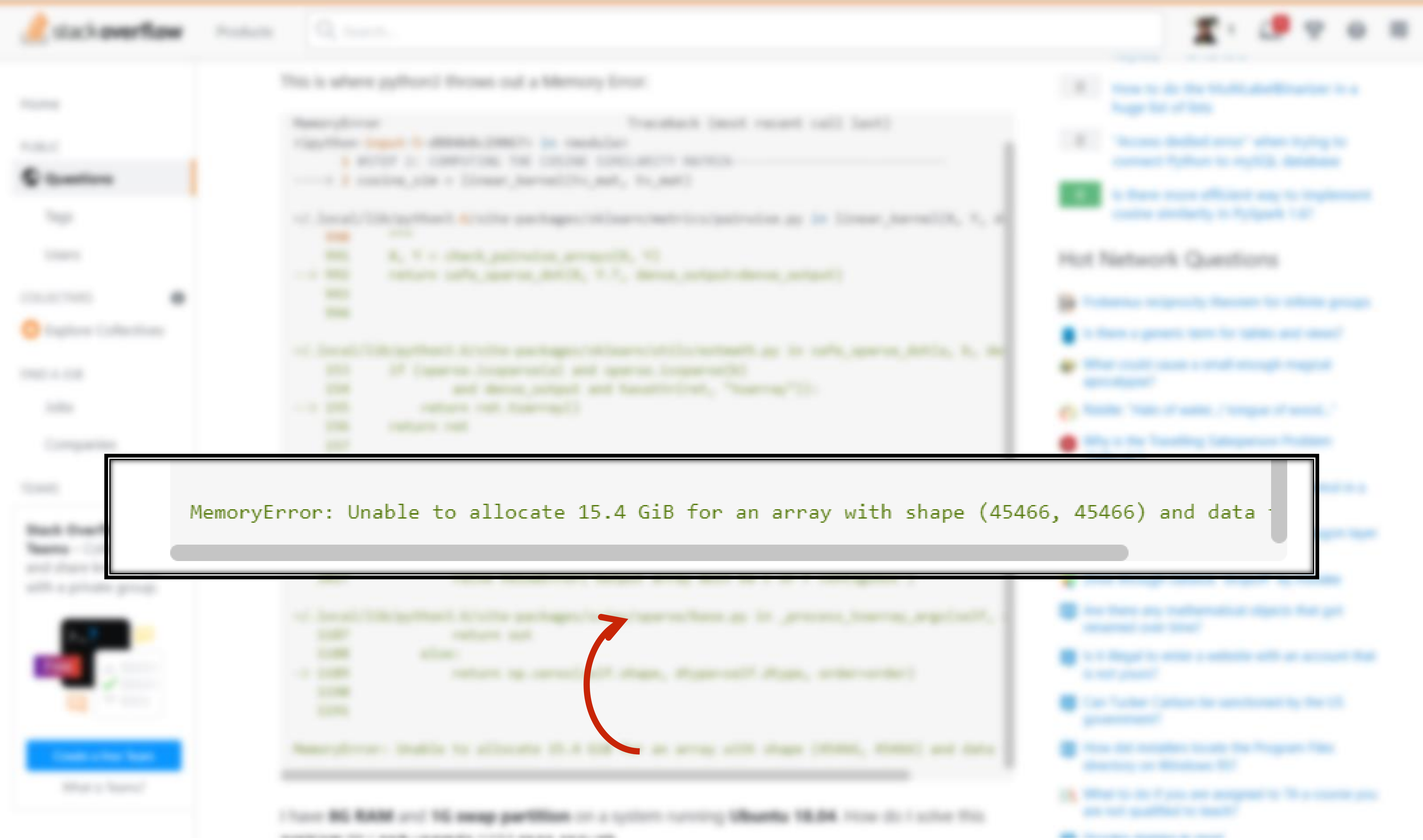
Hot Network Questions

- Frobenius reciprocity theorem for infinite groups
- Is there a generic term for tables and views?
- What could cause a small enough magical apocalypse?
- Riddle: "Halo of water, / tongue of wood..."
- Why is the Travelling Salesperson Problem "Difficult"?
- Why such "Sloppy" heating element control in a hot-tub
- How I can convert a point layer to a polygon layer in QGIS?
- Drive through Gatwick "dropoff" by mistake
- Are there any mathematical objects that got renamed over time?
- Is it illegal to enter a website with an account that is not yours?
- Can Tucker Carlson be sanctioned by the US government?
- How did installers locate the Program Files directory on Windows 95?
- What to do if you are assigned to TA a course you are not qualified to teach?
- Placebo doping in sport



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BERT
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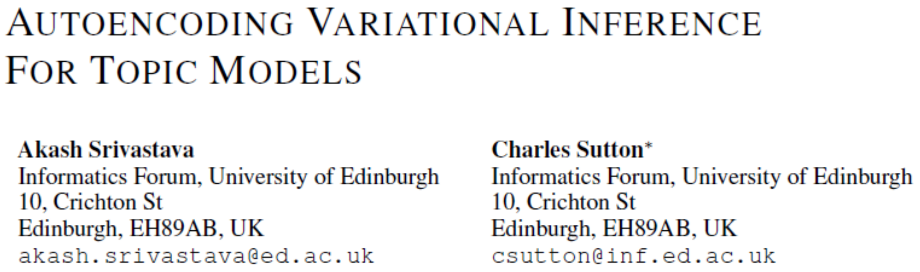

AUTOENCODING VARIATIONAL INFERENCE
FOR TOPIC MODELS

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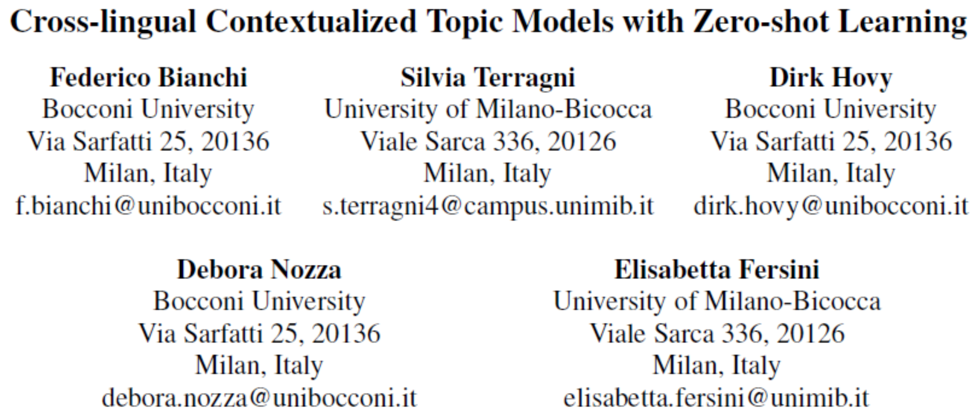

Cross-lingual Contextualized Topic Models with Zero-shot Learning

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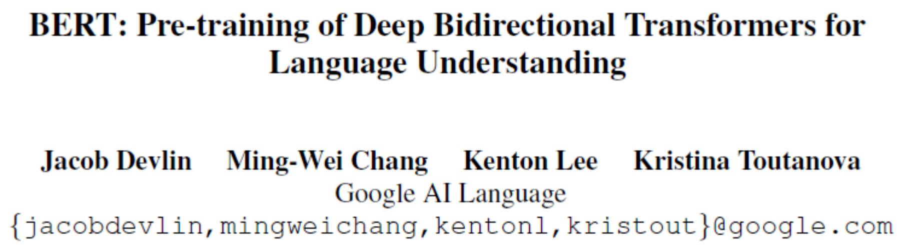

BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding

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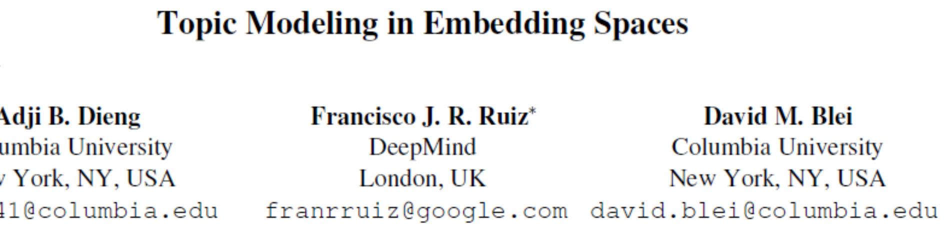
Google AI Language
{jacobdevlin,mingweichang,kentonl,kristout}@google.com



Topic Modeling in Embedding Spaces

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Francisco J. R. Ruiz*
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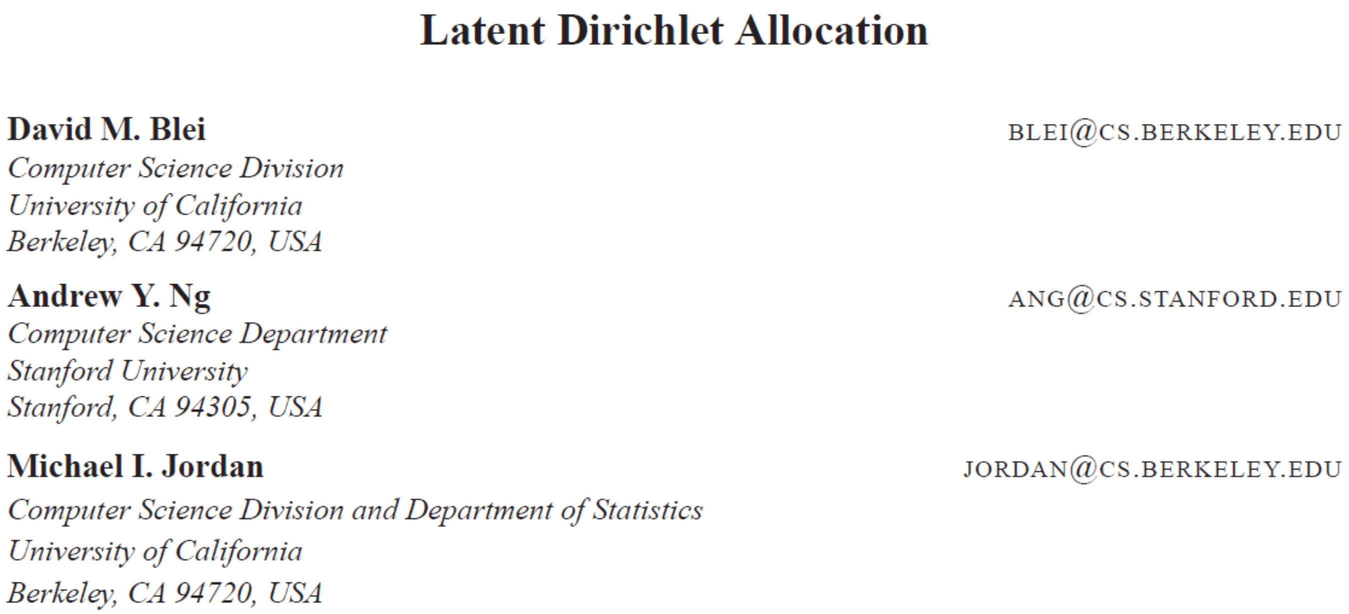

Latent Dirichlet Allocation

David M. Blei BLEI@CS.BERKELEY.EDU
Computer Science Division
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Andrew Y. Ng ANG@CS.STANFORD.EDU
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Michael I. Jordan JORDAN@CS.BERKELEY.EDU
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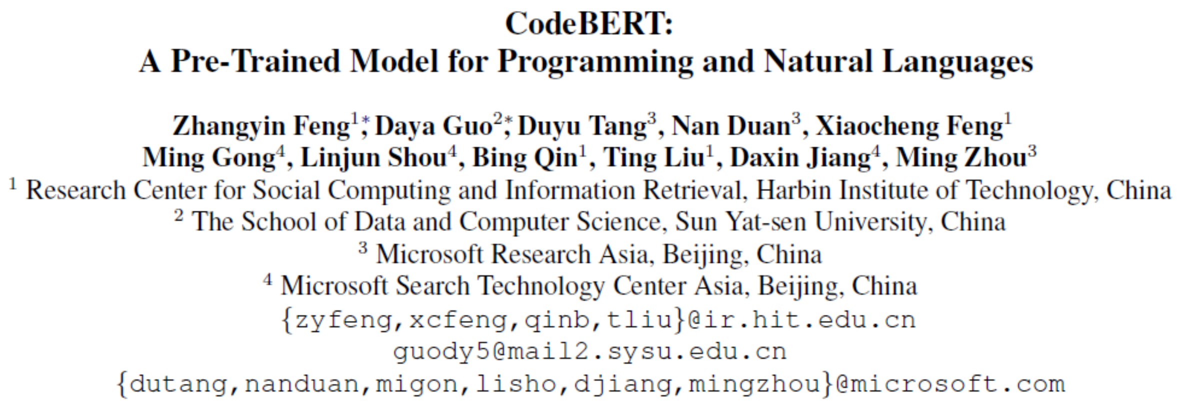

CodeBERT:
A Pre-Trained Model for Programming and Natural Languages

Zhangyin Feng[1]*, Daya Guo[2]*, Duyu Tang[3], Nan Duan[3], Xiaocheng Feng[1]
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[1] Research Center for Social Computing and Information Retrieval, Harbin Institute of Technology, China
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[3] Microsoft Research Asia, Beijing, China
[4] Microsoft Search Technology Center Asia, Beijing, China
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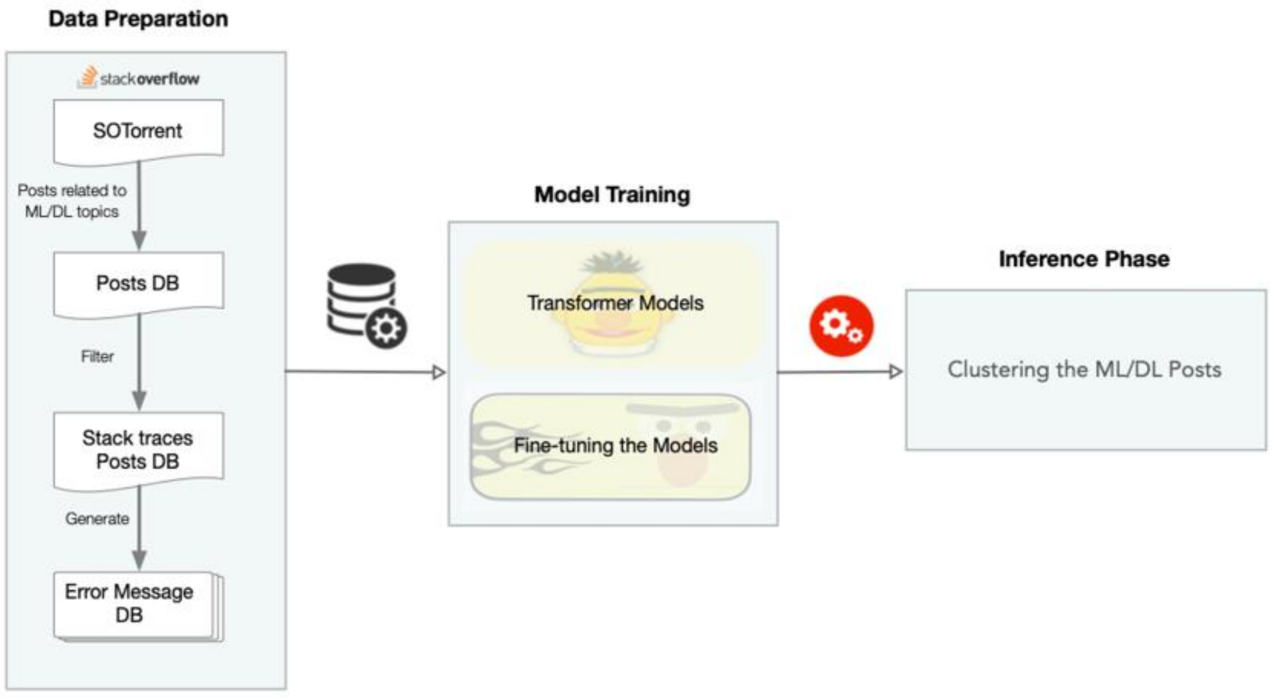

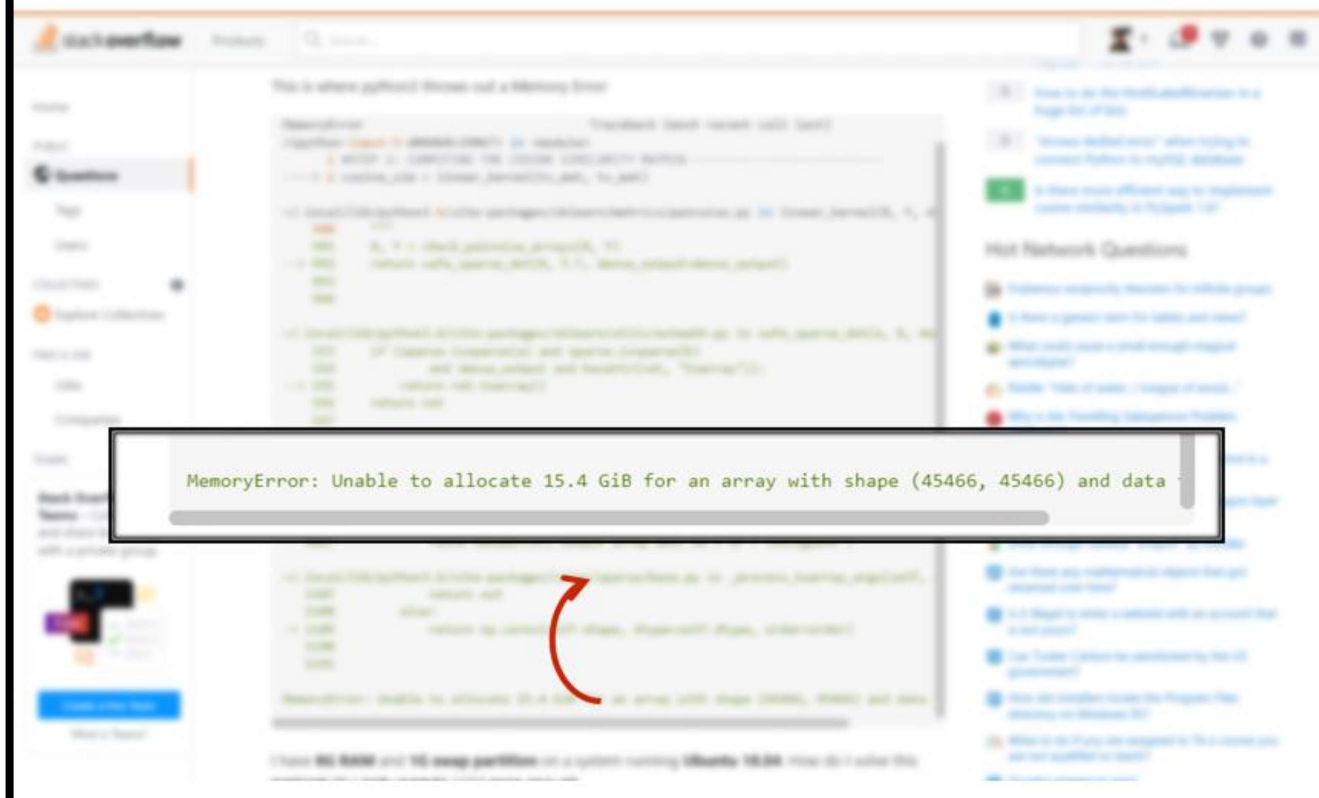

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**CodeBERT:
A Pre-Trained Model for Programming and Natural Languages**

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Latent Dirichlet Allocation

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