

SPM ASSIGNMENT 5

Goal:

The goal of this experiment was to use GitHub to track created and closed issues of given repositories for the past 2 years along with time series forecasting using Tensorflow/LSTM, FB Prophet, and StatModel, and then deploying it the code on Docker and then on the Google Cloud platform.

Time Series:

Time Series is a collection of data points indexed based on the time they were collected. Most often, the data is recorded at regular time intervals.

What makes Time Series data special? Forecasting future Time Series values is a quite common problem in practice.

Predicting the weather for the next week, the price of Bitcoins tomorrow, the number of your sales during Christmas, and future heart failure are common examples.

Tensorflow:

TensorFlow is a free and open-source software library for dataflow and differentiable programming across a range of tasks. It is a symbolic math library, and is also used for machine learning applications such as neural networks. It is used for both research and production at Google.

TensorFlow was developed by the Google Brain team for internal Google use. It was released under the Apache License 2.0 on November 9, 2015.

LSTM stands for Long short-term memory. LSTM cells are used in recurrent neural networks that learn to predict the future from sequences of variable lengths. Note that recurrent neural networks work with any kind of sequential data and, unlike ARIMA and Prophet, are not restricted to time series. The main idea behind LSTM cells is to learn the important parts of the sequence seen so far and forget the less important ones. This is achieved by the so-called gates, i.e., functions that have different learning objectives such as a compact representation of the time series seen so far how to combine new input with the past representation of the series what

to forget about the series what to output as a prediction for the next time step.

Statsmodel:

Stats Model is a Python module that provides classes and functions for the estimation of many different statistical models, as well as for conducting statistical tests and statistical data exploration. An extensive list of result statistics is available for each estimator. The results are tested against existing statistical packages to ensure that they are correct.

Stats Model contains model classes and functions that are useful for time series analysis.

Facebook Prophet (FBprophet):

Facebook developed Prophet FB as an algorithm for the in-house prediction of time series values for different business applications. Therefore, it is specially designed for the prediction of business time series.

Comparative Analysis:

According to my analysis the prophet is the best among the three approaches we have done in this project. It predicts the time series data very accurately which is quite useful in business applications as well.

Docker Images:

The screenshot shows the Docker Desktop interface with the 'Images' tab selected. The sidebar includes 'Containers', 'Images' (selected), 'Volumes', 'Builds', 'Docker Scout', and 'Extensions'. The main area displays 7 images under the 'Local' tab, with a total size of 1.61 GB / 14.27 GB in use. The images listed are:

Name	Tag	Created	Size	Actions	Image
heytgala/elasticsearch_vector	latest	7 hours ago	1.4 GB	⋮	c1405...
heytgala/elasticsearch_vector	multi	7 hours ago	1.4 GB	⋮	0f6ccc...
gcr.io/reactmicroservice-441800/reactmicroservice	final	11 hours ago	860.69 MB	⋮	4883f3...
gcr.io/flaskmicroservice-441723/flaskmicroservice	final	17 hours ago	1.29 GB	⋮	19c51c...
gcr.io/lstmmicroservice/lstmmicroservice	final	21 hours ago	4.4 GB	⋮	15145...
moby/buildkit	buildx-	10 days ago	202.66 MB	⋮	def2de...
elasticsearch	8.11.3	11 months ago	1.4 GB	⋮	ac1eef...

At the bottom, it says 'Showing 7 items' and provides system status: Engine running, RAM 7.11 GB, CPU 0.25%, Disk 0.0 GB avail. of 0.0 GB. It also shows a Beta update available and a Terminal icon.

Google Cloud Platform:

LSTMmicroservice(Forecasting):

The screenshot shows the Google Cloud Platform dashboard for the 'Istmicroservice' project. The top navigation bar includes tabs for 'Dashboard', 'Revisions', 'Metrics', 'React App', and 'All Bookmarks'. The search bar shows 'Istmicroservice'. The main dashboard sections are:

- Project info:** Project name: Istmicroservice, Project number: 33998491449, Project ID: Istmicroservice. Buttons include 'ADD PEOPLE TO THIS PROJECT' and 'Go to project settings'.
- API APIs:** A chart titled 'Requests (requests/sec)' showing data from 6 PM to 6:45 AM. The chart indicates 'No data is available for the selected time frame.' A button 'Go to APIs overview' is present.
- Google Cloud Platform status:** Vertex Gemini API issue (Began at 2024-11-13). Buttons include 'Go to Cloud status dashboard' and 'View detailed charges'.
- Billing:** Estimated charges for the billing period Nov 1 – 17, 2024. Buttons include 'Take a tour of billing' and 'View detailed charges'.
- Resources:** Includes sections for BigQuery (Data warehouse/analytics), SQL (Managed MySQL, PostgreSQL, SQL Server), and Compute Engine.

Screenshot of Google Cloud Artifact Registry showing the configuration of the Istmmicroservice repository.

The top navigation bar shows several tabs: "Repositories – Artifact Registry", "Revisions ...skservice – Cloud Run", "Metrics – ...ctservice – Cloud Run", "React App", and a new tab icon. The URL in the address bar is console.cloud.google.com/artifacts.

The main interface displays the "Artifact Registry" dashboard with the "Istmmicroservice" repository selected. A prominent callout box in the center says "Turn on vulnerability scanning" with a message: "Your registry is not being monitored for known vulnerabilities. GCP offers automatic vulnerability monitoring of all images pushed or pulled within the last 30 days at a cost of \$0.26 per image." It includes "TURN ON" and "LEARN MORE" buttons.

The "Repositories" section lists the repository details:

Name	Format	Type	Location	Scanning
gcr.io	Docker	Standard	us (multiple regions in United States)	Disabled

A sidebar on the right titled "Select a repository" has tabs for "PERMISSIONS" and "LABELS". A message says "Please select at least one resource.".

The bottom part of the screenshot shows the "Digests for Istmmicroservice" page. It also features a "Turn on vulnerability scanning" callout. The "FILES" section lists four OCI alternative artifacts:

Name	Description	Tags	Created	Updated
45ca495f1f30		final	21 hours ago	21 hours ago
a193ac308448		new	23 hours ago	23 hours ago
29242fa288b2		recent	1 day ago	1 day ago

A context menu is open on the right side of the artifact list, with "Deploy to Cloud Run" highlighted.

The screenshot displays two main sections of the Google Cloud Console.

Cloud Run Service Details:

- Istmservice** (Region: us-central1) is the selected service.
- URL: <https://istmservice-33998491449.us-central1.run.app/>
- Service min instances: 1
- REVISIONS** tab is active, showing one revision: Istmservice-00001-f88 (100% traffic, 21 hours ago).
- CONTAINERS** tab shows General settings: CPU allocation (CPU is only allocated during request processing), Startup CPU boost (Enabled), Concurrency (80), Request timeout (300 seconds), and Execution environment (Default).

Cloud Storage Bucket Details:

- Istmdatastorage** bucket is selected.
- Location: us-central1 (Iowa)
- Storage class: Standard
- Public access: Public to internet (warning icon)
- Protection: Soft Delete
- OBJECTS** tab is active, showing a folder browser with 'Istmdatastorage' and three objects:

Name	Size	Type	Created
all_issues_data_branch_Jangchain..	27.7 KB	image/png	Nov 17, 2024, 6:39:09 PM
all_issues_data_closed_at_Jangch..	31.4 KB	image/png	Nov 17, 2024, 6:38:22 PM
all_issues_data_commite_lanach..	72.0 KB	image/png	Nov 17, 2024, 6:38:13 PM

Flaskmicroservice:

<https://console.cloud.google.com/home/dashboard?inv=1&inv=Abhw6w&project=flaskmicroservice-441723>

Project info

- Project name: flaskmicroservice
- Project number: 769915942273
- Project ID: flaskmicroservice-441723

API APIs

Requests (requests/sec)

Requests: 0.028/s

Google Cloud Platform status

Vertex Gemini API
An issue with Vertex Gemini API in multiple regions of Asia and America
Began at 2024-11-13 (07:51:14)
All times are US/Pacific
Data provided by status.cloud.google.com

[Go to Cloud status dashboard](#)

Billing

Estimated charges: USD \$0.00
For the billing period Nov 1 – 17, 2024

[Take a tour of billing](#)

[View detailed charges](#)

<https://console.cloud.google.com/artifacts?inv=AbhxWA&project=flaskmicroservice-441723>

Artifact Registry

Repositories

+ CREATE REPOSITORY EDIT REPOSITORY DELETE SETUP INSTRUCTIONS REFRESH HIDE INFO PANEL

Turn on vulnerability scanning

Your registry is not being monitored for known vulnerabilities. GCP offers automatic vulnerability monitoring of all images pushed or pulled within the last 30 days at a cost of \$0.26 per image.

Repositories

Name	Format	Type	Location	Scanning
gcr.io	Docker	Standard	us (multiple regions in United States)	(Disabled)

Release Notes

Please select at least one resource.

Screenshot of Google Cloud Artifact Registry showing the 'Digests for flaskmicroservice' repository. A modal dialog titled 'Turn on vulnerability scanning' is displayed, encouraging users to enable monitoring for known vulnerabilities. The main table lists four artifact versions: `dbc8a72b34f9`, `b9bf9f7b2686`, `95d94b5bde1d`, and `final`. Action buttons for each row include 'Show pull command', 'Edit tags', 'Deploy to Cloud Run', 'Deploy to GKE', and 'Deploy to GCE'.

Name	Description	Tags	Created	Updated	Actions
<code>dbc8a72b34f9</code>	<code>final</code>		17 hours ago	17 hours ago	Show pull command Edit tags Deploy to Cloud Run Deploy to GKE Deploy to GCE
<code>b9bf9f7b2686</code>			18 hours ago	18 hours ago	
<code>95d94b5bde1d</code>			18 hours ago	18 hours ago	
<code>final</code>			18 hours ago	18 hours ago	

Screenshot of Google Cloud Cloud Run showing the 'flaskservice' service details. The service is healthy, running in the us-central1 region, and has one instance. The 'LOGS' tab is selected, displaying log entries from 2024-11-17 18:39:13.372 CST. The logs show various API requests and responses related to fbprophet_forecast_components.

```

2024-11-17 18:39:13.372 CST pull req fb res: {'fbprophet_forecast_components_url': 'https://storage.googleapis.com/lstmdatstoragelb/fbprophet_forecast_components_pull_request_langchain'}
2024-11-17 18:39:13.372 CST commits req res: {'fbprophet_forecast_components_url': 'https://storage.googleapis.com/lstmdatstoragelb/fbprophet_forecast_components_commits_langchain.png'}
2024-11-17 18:39:13.372 CST closed req fb res: {'fbprophet_forecast_components_url': 'https://storage.googleapis.com/lstmdatstoragelb/fbprophet_forecast_components_closed_at_langchain'}
2024-11-17 18:39:13.372 CST contributor response stat: {'all_issues_data_image': 'https://storage.googleapis.com/lstmdatstoragelb/all_issues_data_contributors_langchain.png', 'lstm_gen_'}
2024-11-17 18:39:13.372 CST contributor response stat: {'stats_forecast_url': 'https://storage.googleapis.com/lstmdatstoragelb/stats_forecast_contributors_langchain.png', 'stats_observ_'}
2024-11-17 18:39:13.372 CST contributor response fp: {'fbprophet_forecast_components_url': 'https://storage.googleapis.com/lstmdatstoragelb/fbprophet_forecast_components_contributors_l_'}
2024-11-17 18:39:13.372 CST branch response: {'all_issues_data_image': 'https://storage.googleapis.com/lstmdatstoragelb/all_issues_data_branch_langchain.png', 'lstm_generated_image_url_'}
2024-11-17 18:39:13.372 CST branch response stat: {'stats_forecast_url': 'https://storage.googleapis.com/lstmdatstoragelb/stats_forecast_branch_langchain.png', 'stats_observation_url':}
2024-11-17 18:39:13.384 CST 169.254.169.126 - - [18/Nov/2024 00:39:13] "POST /api/github HTTP/1.1" 200 -

```

Reactmicroservice:

<https://console.cloud.google.com/home/dashboard?inv=1&invf=Abhw6w&project=reactmicroservice-441800>

The dashboard displays the following sections:

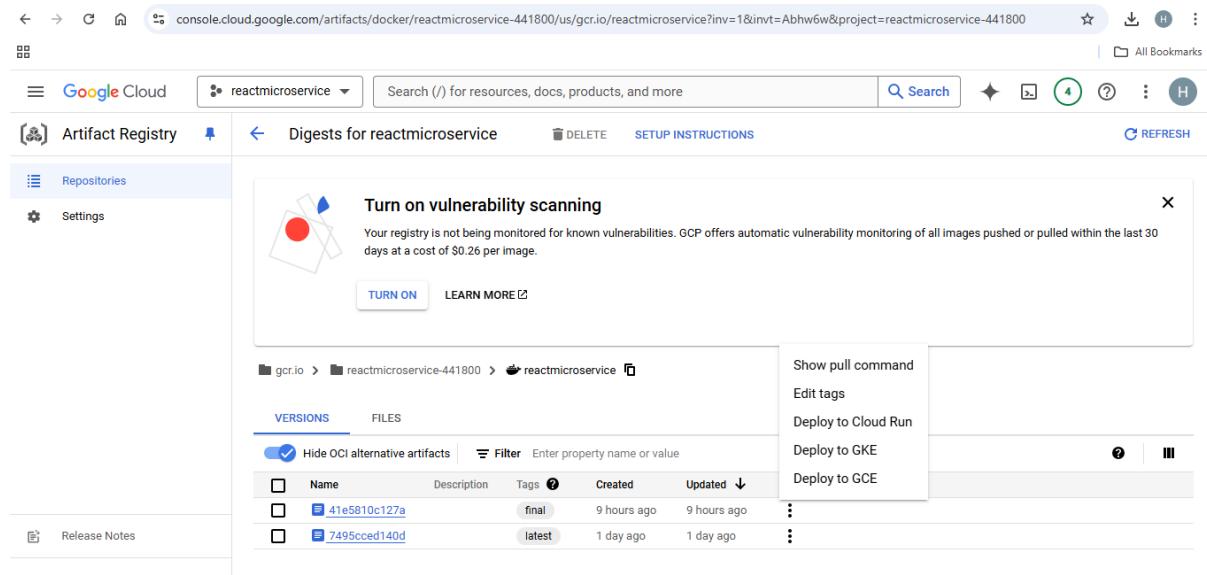
- Project info:** Project name: reactmicroservice, Project number: 514720192073, Project ID: reactmicroservice-441800.
- API APIs:** Requests (requests/sec) chart from 6 PM to 6:45 AM. No data available.
- Google Cloud Platform status:** Vertex Gemini API issue (Began at 2024-11-13 07:51:14).
- Billing:** Estimated charges USD \$0.00 for Nov 1 – 17, 2024.

<https://console.cloud.google.com/bigquery?inv=1&invf=Abhw6w&project=react...>

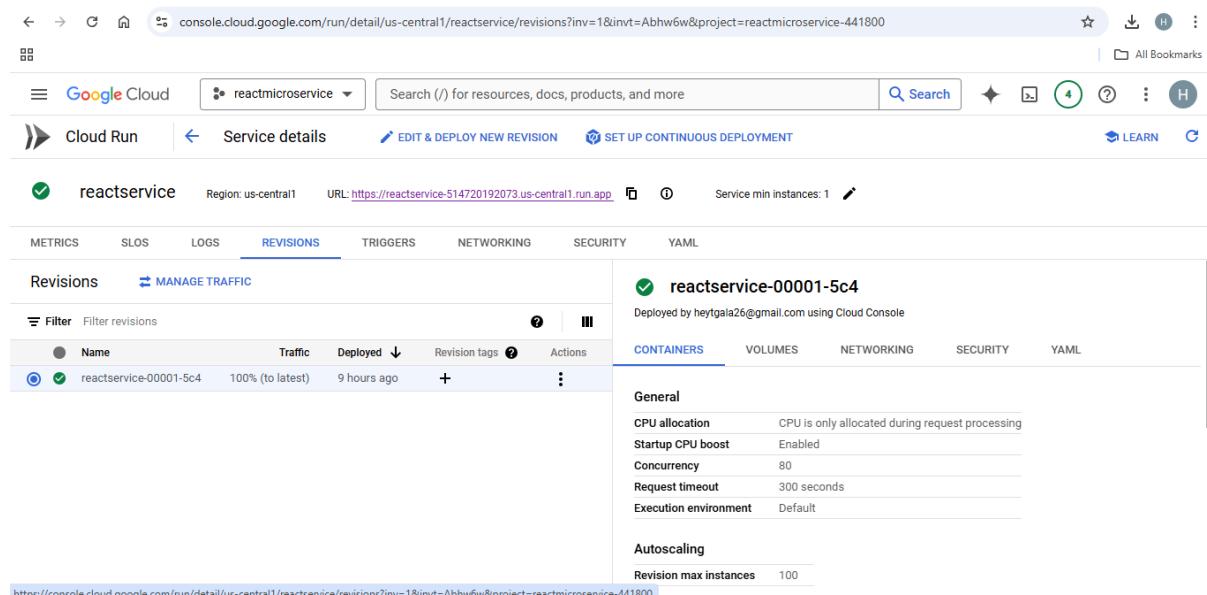
<https://console.cloud.google.com/artifacts?inv=1&invf=Abhw6w&project=reactmicroservice-441800>

The page shows the following sections:

- Artifact Registry:** Artifacts tab selected, showing Repositories, + CREATE REPOSITORY, EDIT REPOSITORY, DELETE, and SETUP INSTRUCTIONS.
- Vulnerability scanning:** Turn on vulnerability scanning button (disabled).
- Repositories:** Table showing one repository: gcr.io (Docker, Standard, us, Scanning: Disabled).
- Permissions:** Select a repository dropdown with a message: Please select at least one resource.



The screenshot shows the Google Cloud Artifact Registry interface. A prominent alert box at the top right says "Turn on vulnerability scanning" with a message: "Your registry is not being monitored for known vulnerabilities. GCP offers automatic vulnerability monitoring of all images pushed or pulled within the last 30 days at a cost of \$0.26 per image." It includes a "TURN ON" button and a "LEARN MORE" link. Below the alert, the "REPOSITORIES" section shows a single repository named "reactmicroservice". The "VERSIONS" tab is selected, displaying two versions: "41e5810c127a" (tagged as "final") and "7495cced140d" (tagged as "latest"). The "FILES" tab is also visible. To the right, a context menu is open with options like "Show pull command", "Edit tags", "Deploy to Cloud Run", "Deploy to GKE", and "Deploy to GCE".

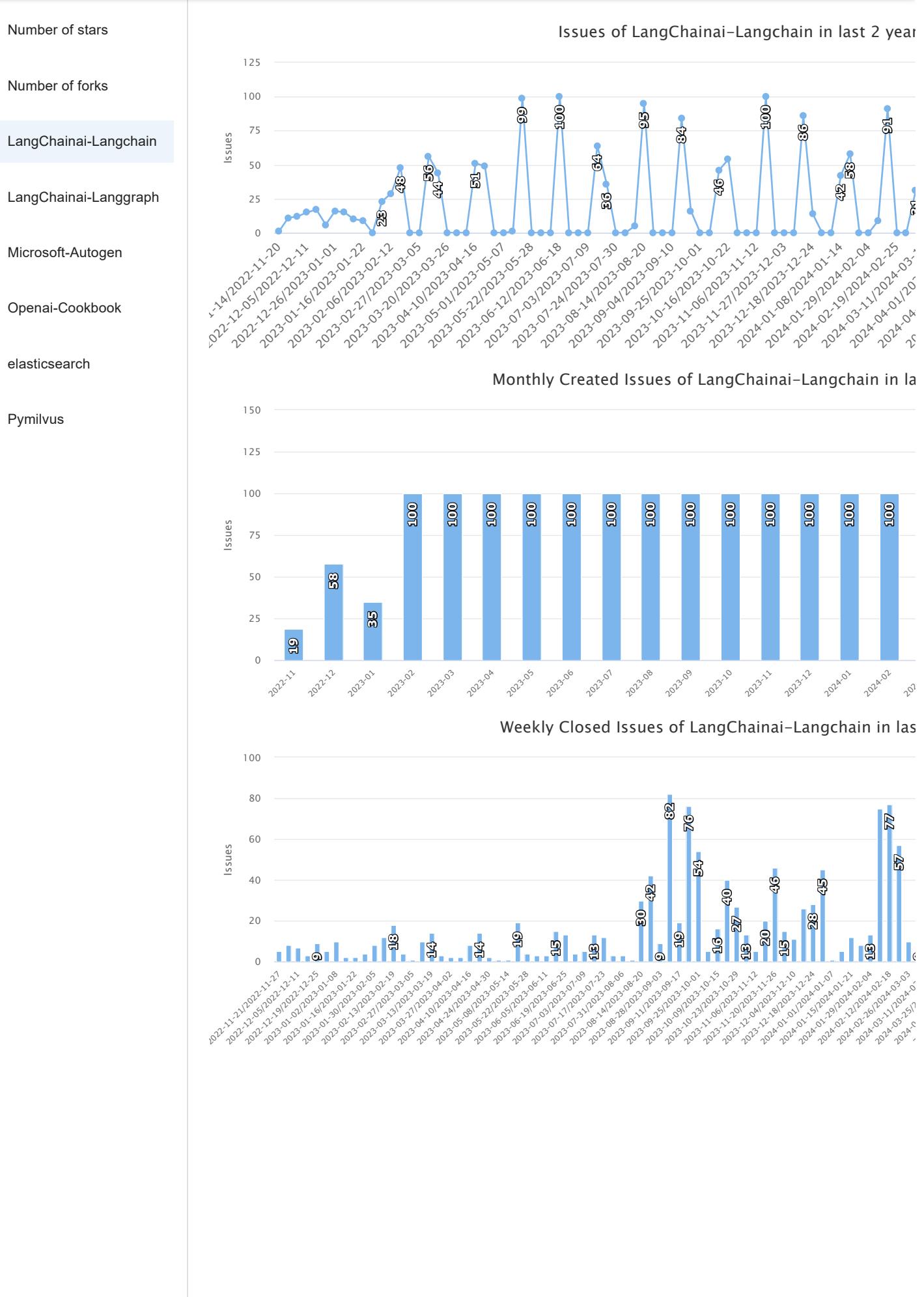


The screenshot shows the Google Cloud Run service details for "reactservice". The service is deployed in the "us-central1" region with a URL of <https://reactservice-514720192073.us-central1.run.app>. The "REVISIONS" tab is selected, showing one revision named "reactservice-00001-5c4" which was deployed 9 hours ago. The "CONTAINERS" tab is active, showing the "General" configuration. It includes settings for CPU allocation (CPU is only allocated during request processing), Startup CPU boost (Enabled), Concurrency (80), Request timeout (300 seconds), and Execution environment (Default). The "Autoscaling" section shows a "Revision max instances" of 100.

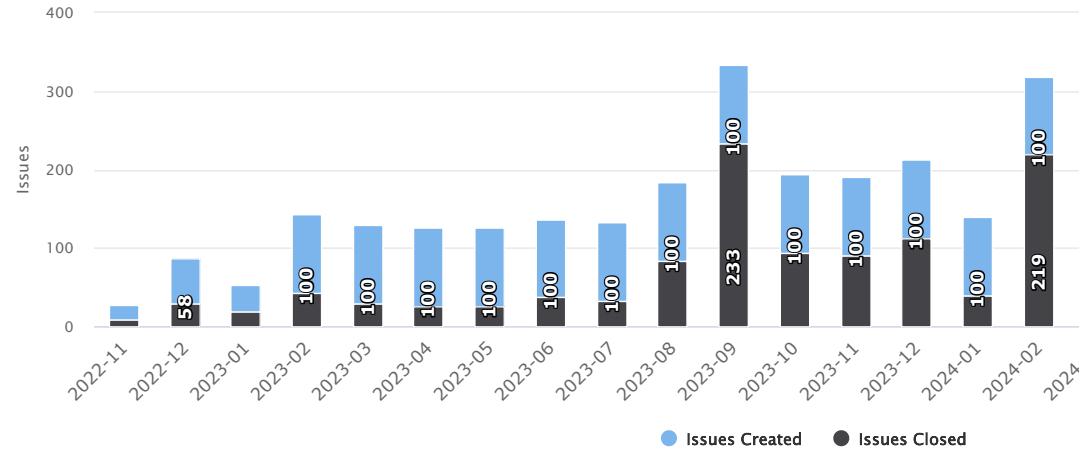
Results:

- a) Langchain**
- b) Langgraph**
- c) Autogen**
- d) Openai-cookbook**
- e) Elasticsearch**
- f) pymilvus**

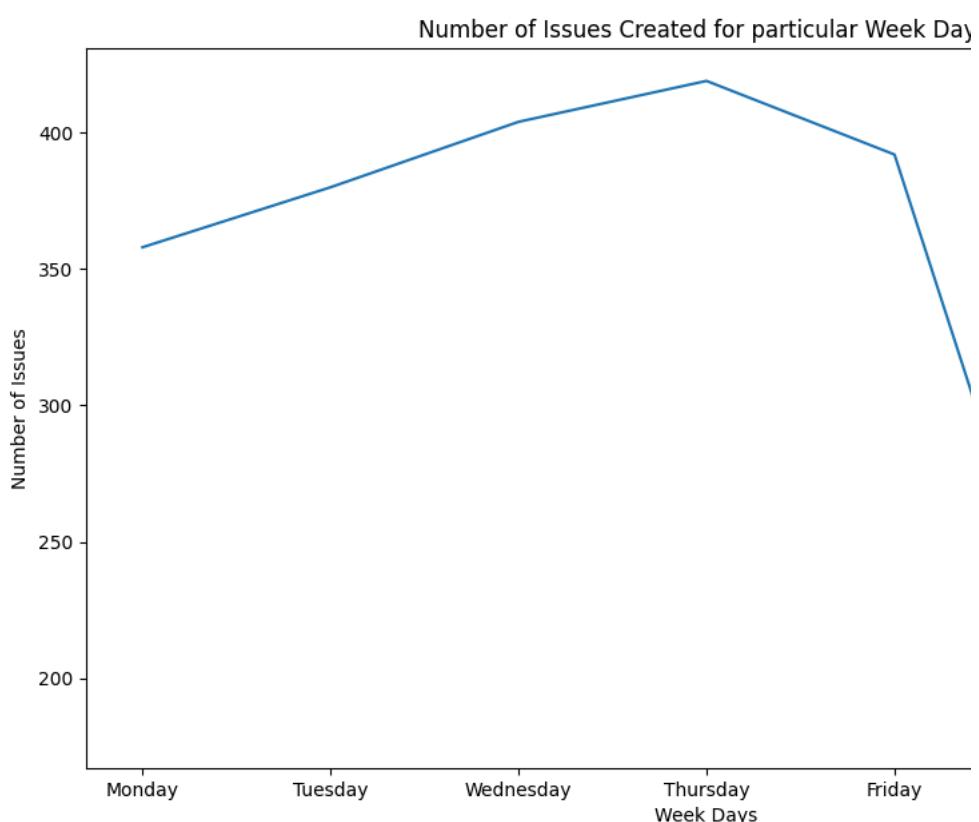
Timeseries Forecasting



Created and Closed Issues of LangChainai-Langchain in



The day of the week maximum number of issues created



The day of the week maximum number of issues Closed

Number of stars

Number of forks

LangChainai-Langchain

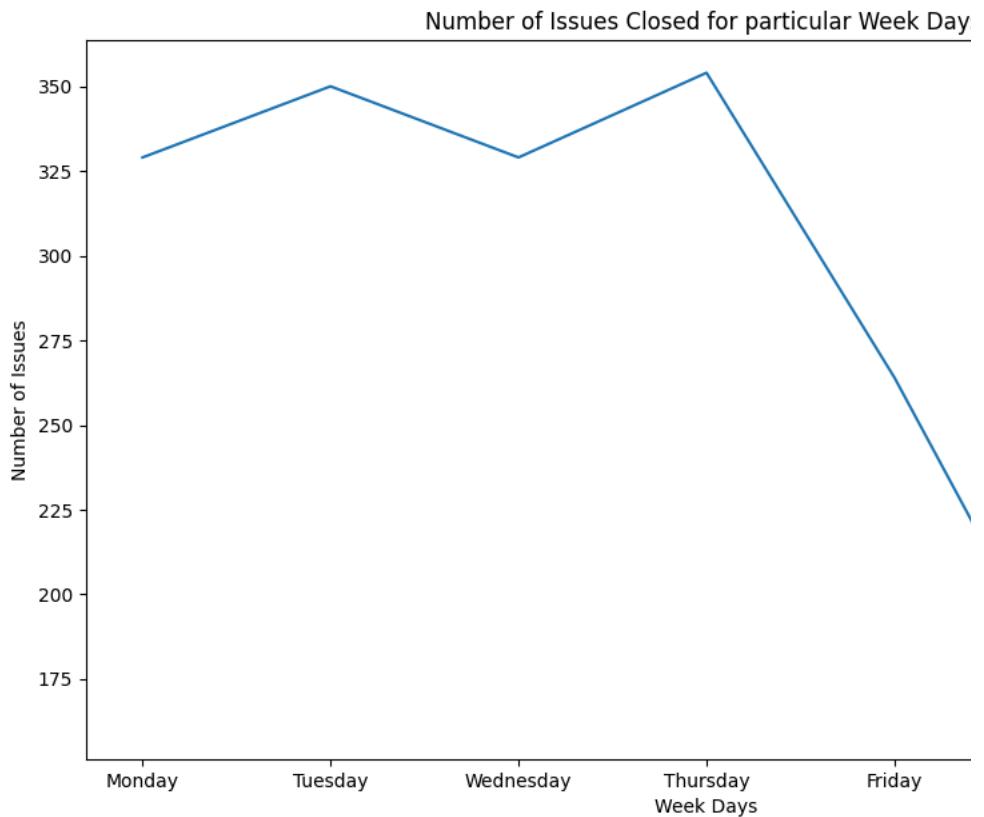
LangChainai-Langgraph

Microsoft-Autogen

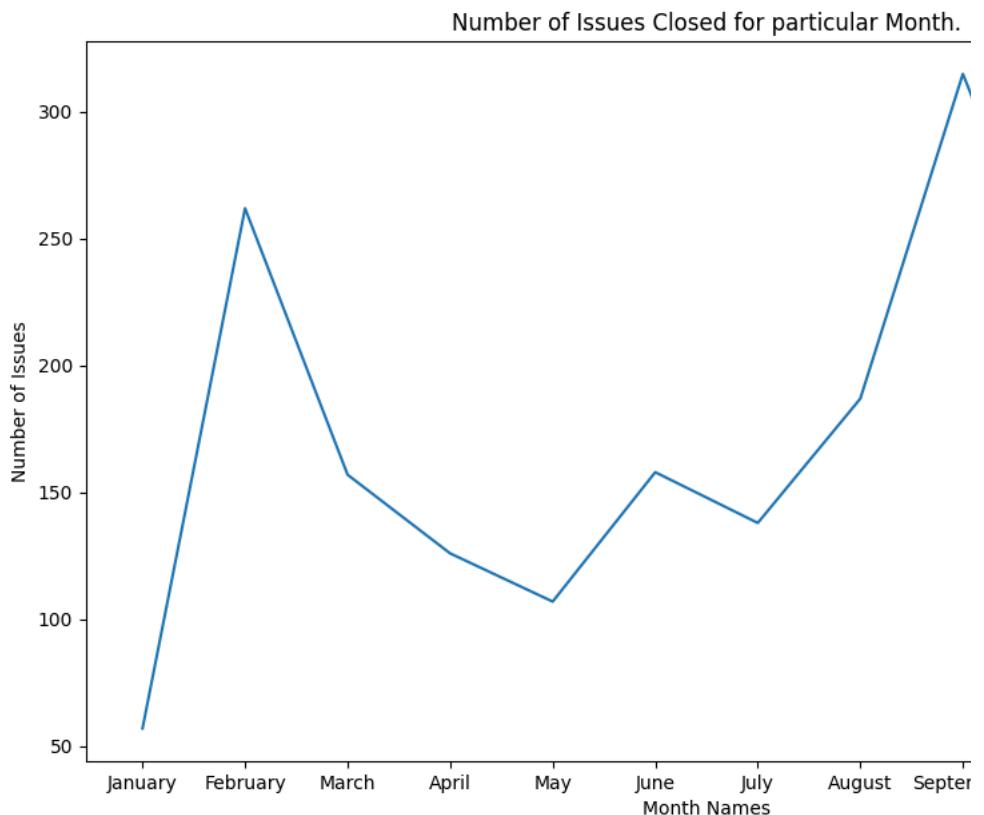
Openai-Cookbook

elasticsearch

Pymilvus



The month of the year that has maximum number of issues closed



Timeseries Forecasting of Created Issues using Tensorflow and Keras LSTM

Model Loss for Created Issues

Number of stars

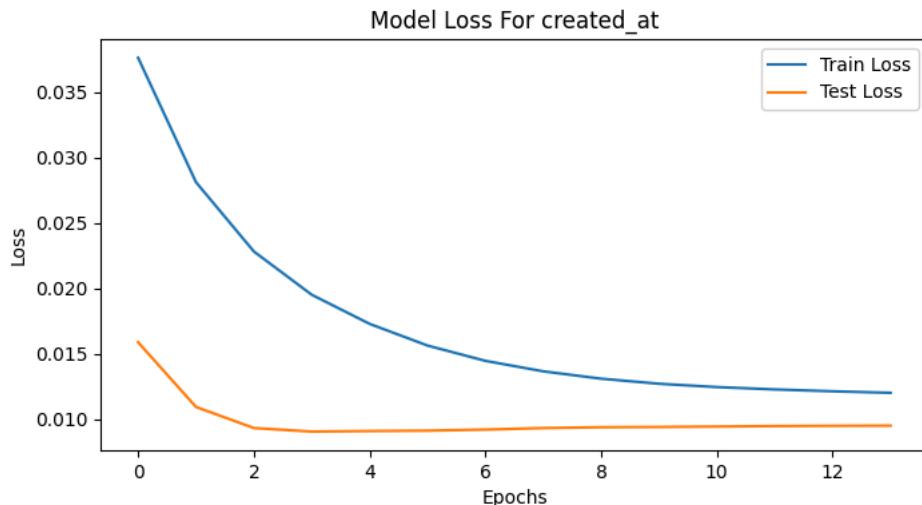
Number of forks

LangChainai-Langchain

LangChainai-Langgraph

Microsoft-Autogen

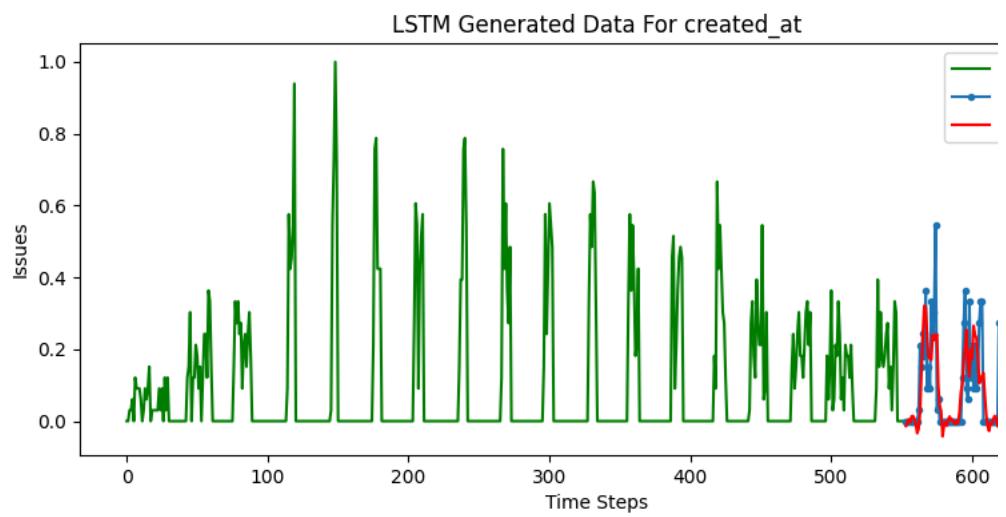
Openai-Cookbook



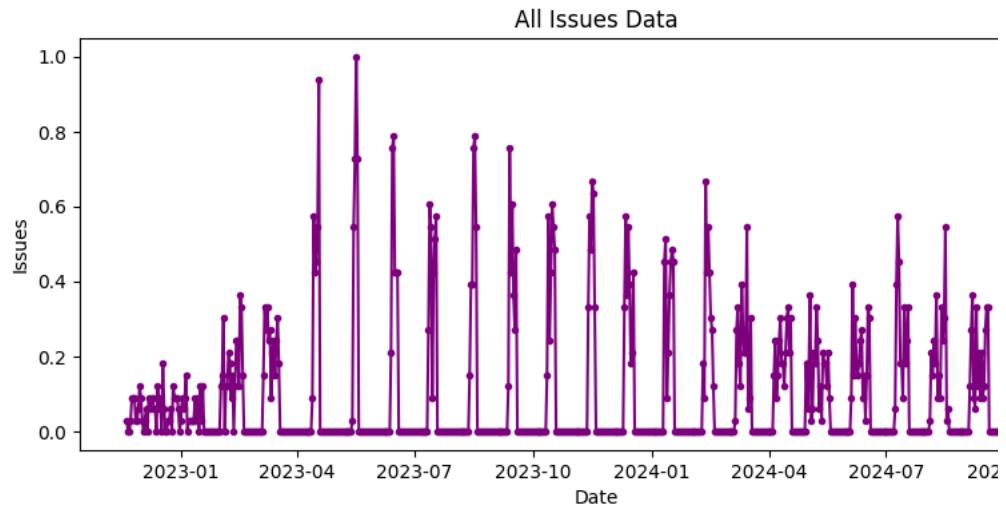
LSTM Generated Data for Created Issues

elasticsearch

Pymilvus



All Issues Data for Created Issues



Timeseries Forecasting of Closed Issues using Tensorflow and Keras LSTM |

Model Loss for Closed Issues

Number of stars

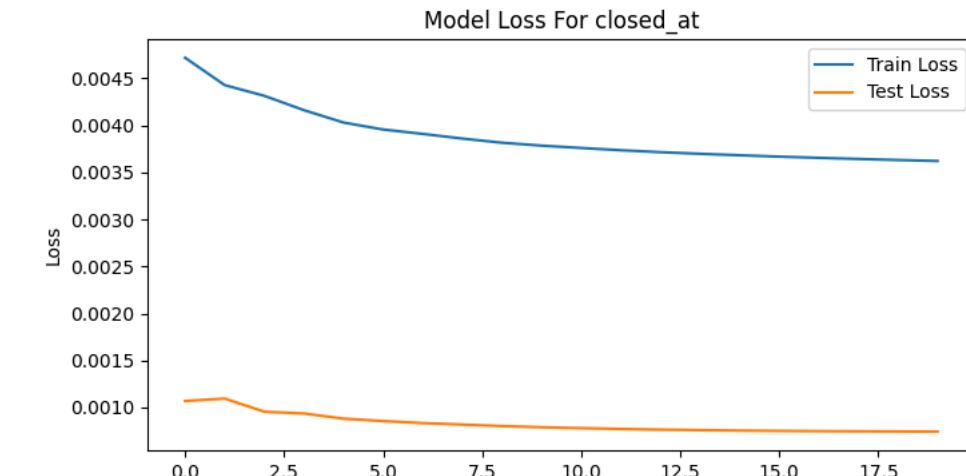
Number of forks

LangChainai-Langchain

LangChainai-Langgraph

Microsoft-Autogen

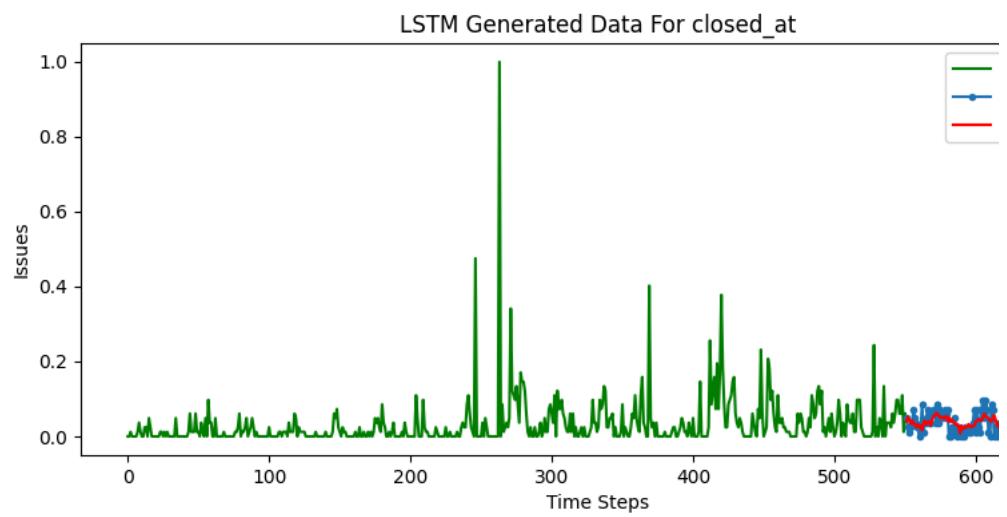
Openai-Cookbook



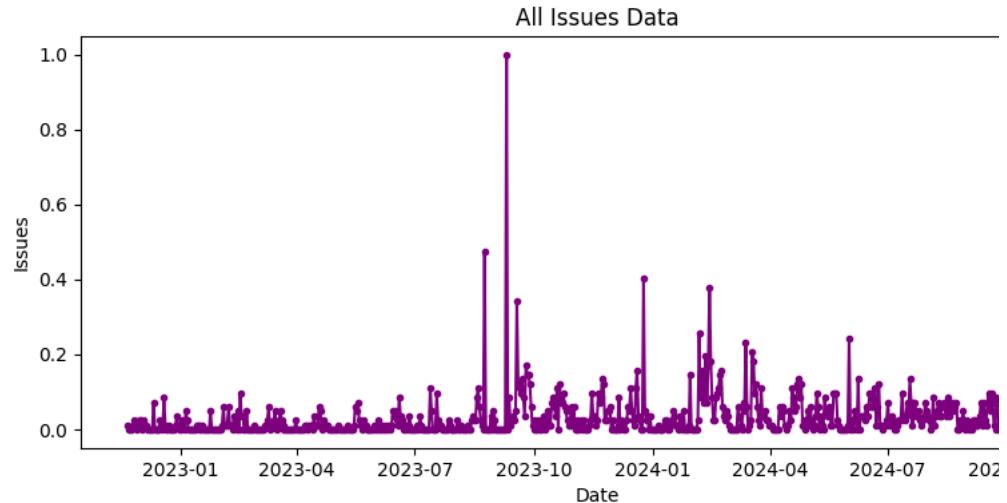
LSTM Generated Data for Closed Issues

elasticsearch

Pymilvus



All Issues Data for Closed Issues



Timeseries Forecasting of Pull Requests using Tensorflow and Keras LSTM

Model Loss for Pull Requests

Number of stars

Number of forks

LangChainai-Langchain

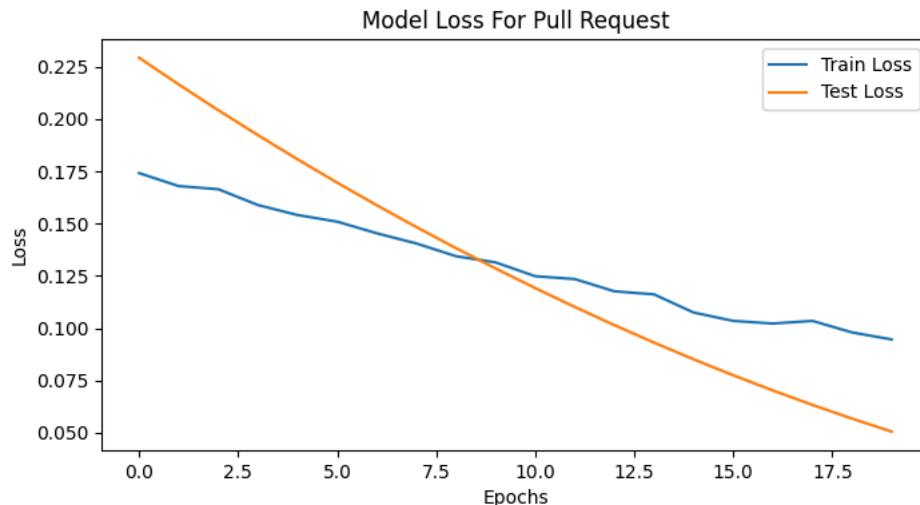
LangChainai-Langgraph

Microsoft-Autogen

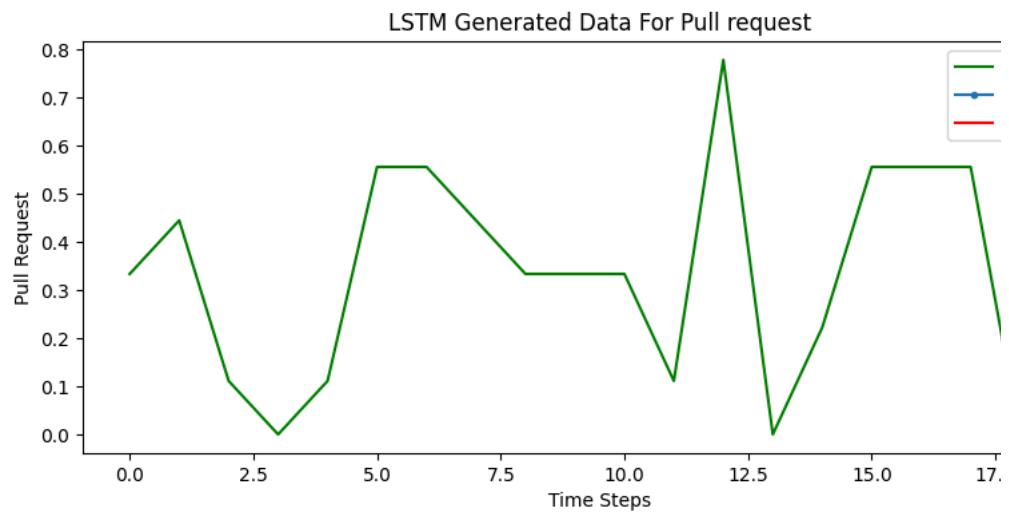
Openai-Cookbook

elasticsearch

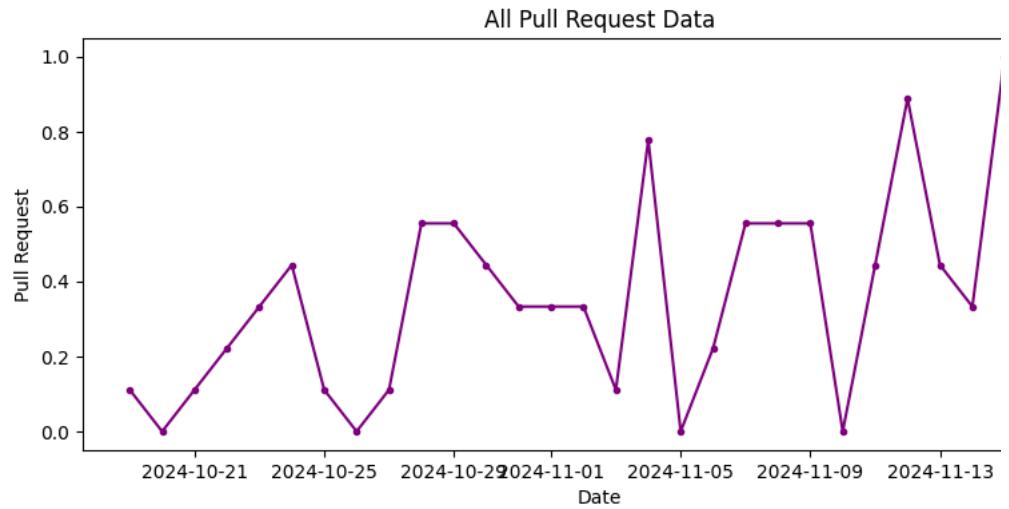
Pymilvus



LSTM Generated Data for Pull Requests



All Issues Data for Pull Requests



Timeseries Forecasting of Commits using Tensorflow and Keras LSTM based

Model Loss for Commits

Number of stars

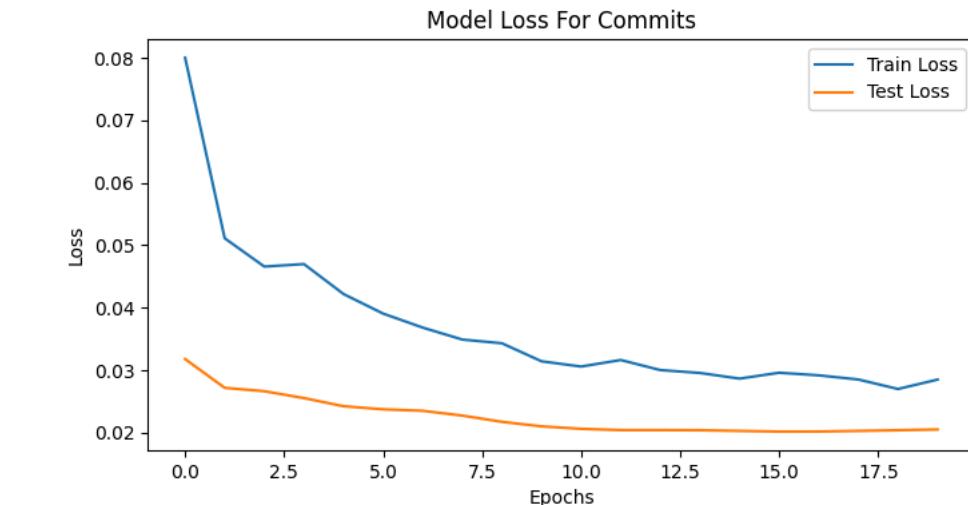
Number of forks

LangChainai-Langchain

LangChainai-Langgraph

Microsoft-Autogen

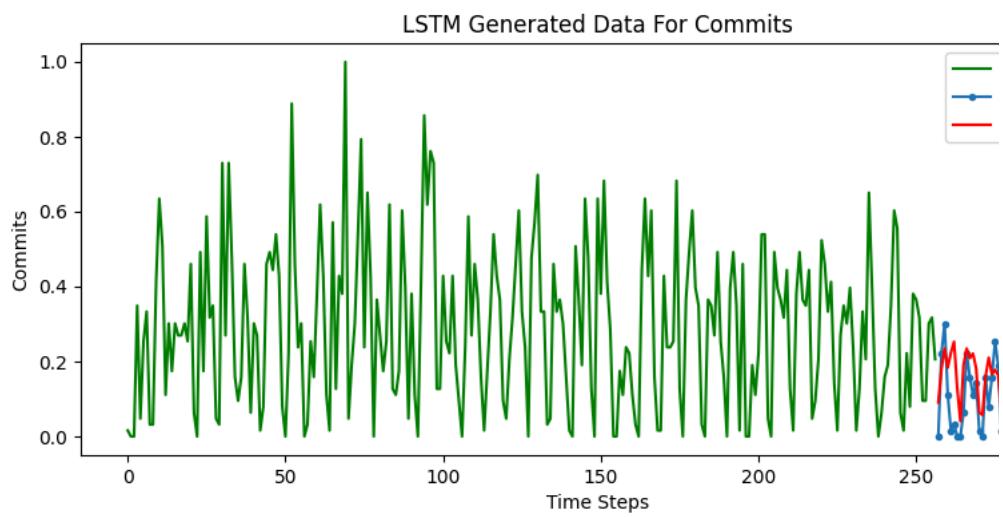
Openai-Cookbook



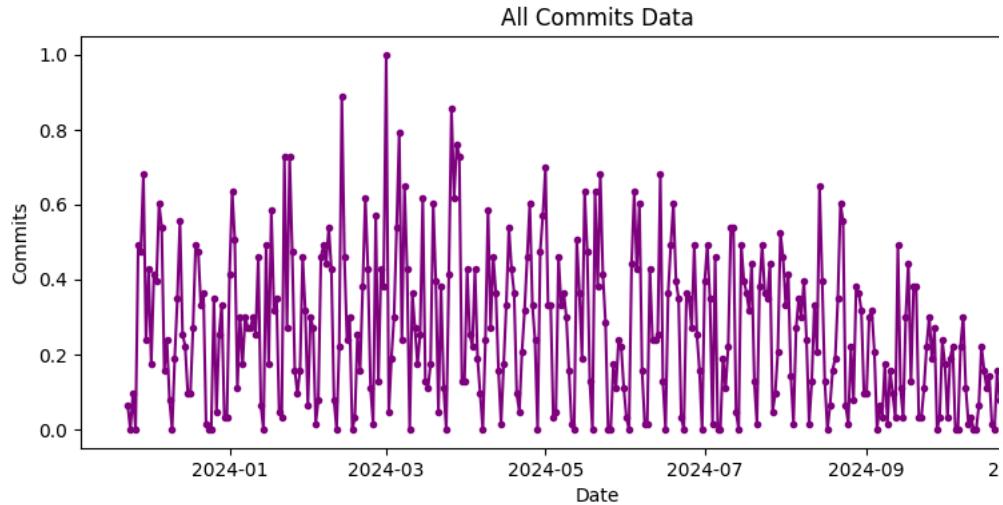
LSTM Generated Data for Commits

elasticsearch

Pymilvus



All Issues Data for Commits



Timeseries Forecasting of Created Issues using Facebook/Prophet based on Forecast of Created Issues

Number of stars

Number of forks

LangChainai-Langchain

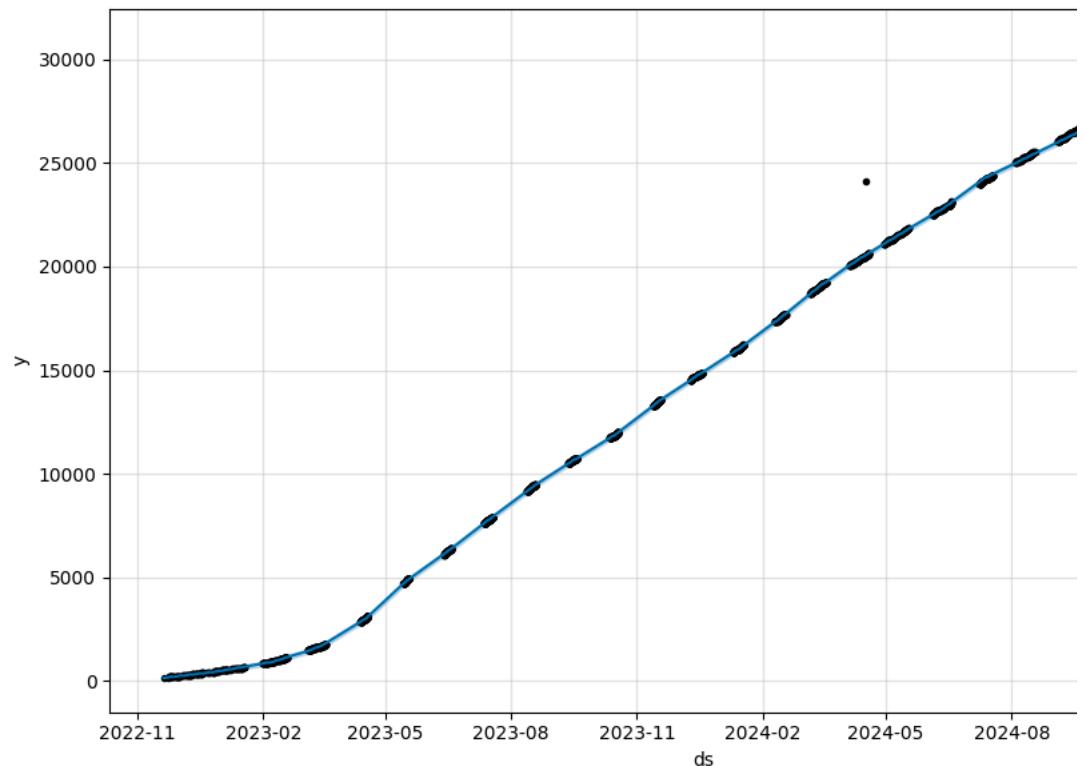
LangChainai-Langgraph

Microsoft-Autogen

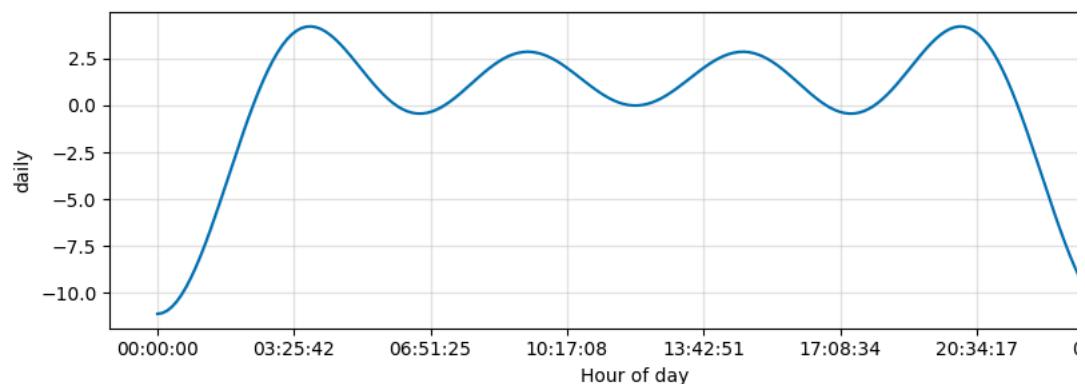
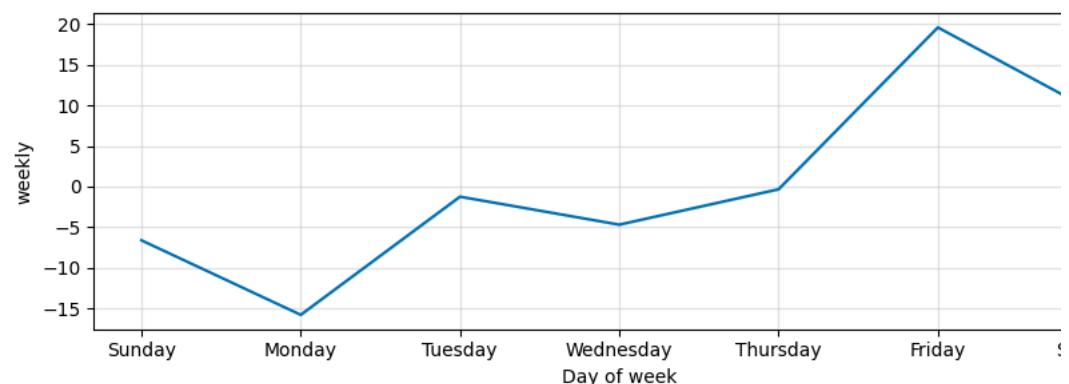
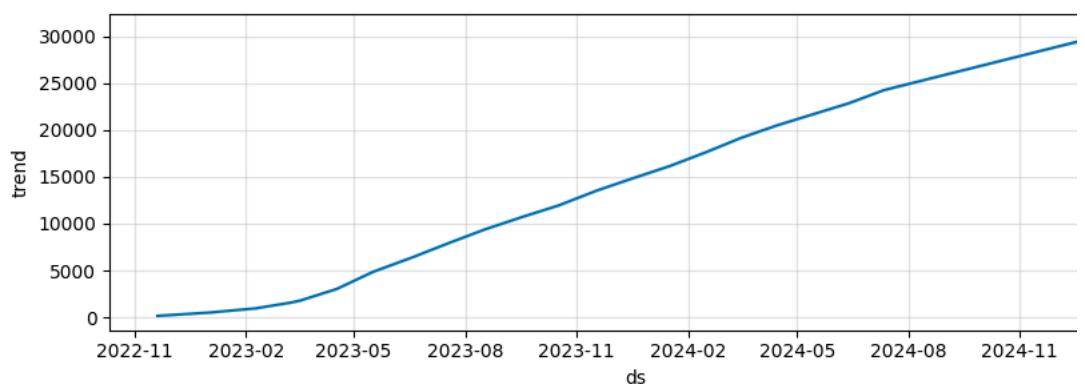
Openai-Cookbook

elasticsearch

Pymilvus



Forecast Components of Created Issues



Timeseries Forecasting of Closed Issues using Facebook/Prophet based on |

Forecast of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

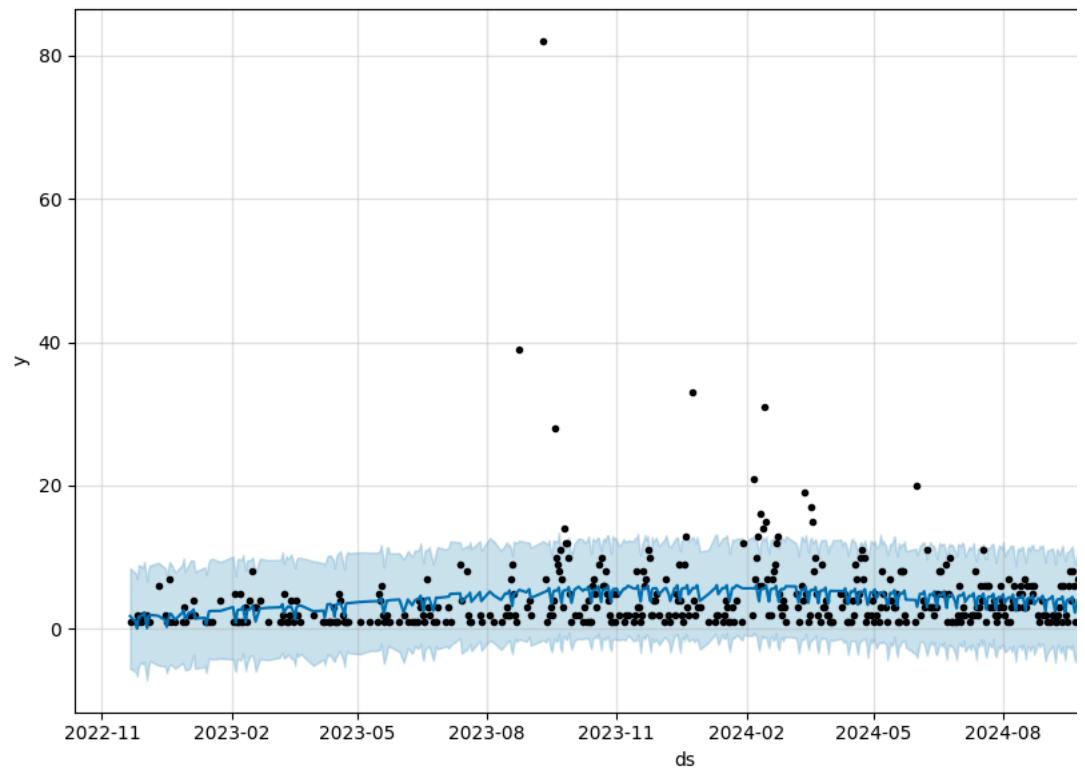
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

Pymilvus



Forecast Components of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

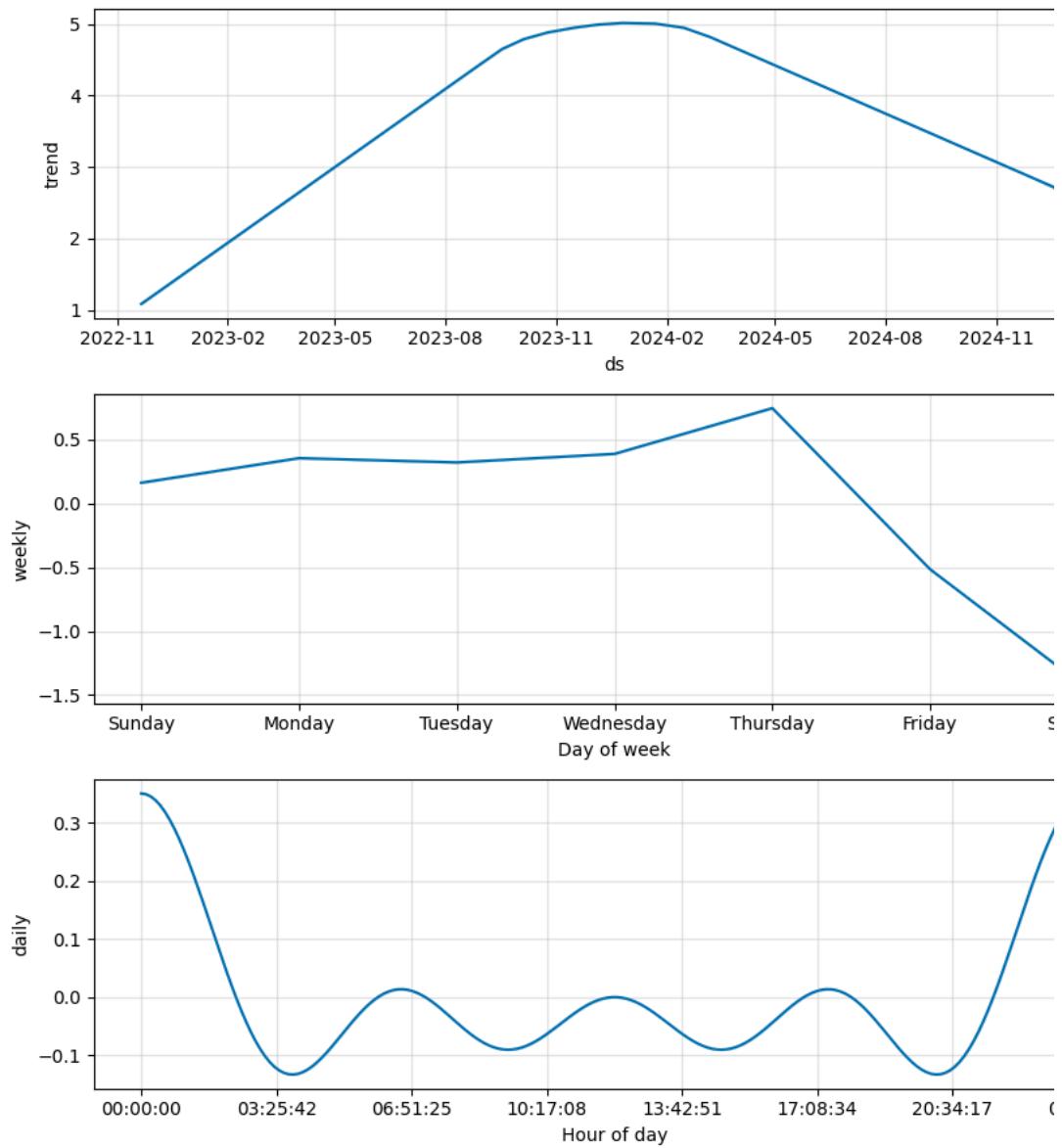
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

Pymilvus



Timeseries Forecasting of Pull Request using Facebook/Prophet based on past history
Forecast of Pull Request

Number of stars

Number of forks

LangChainai-Langchain

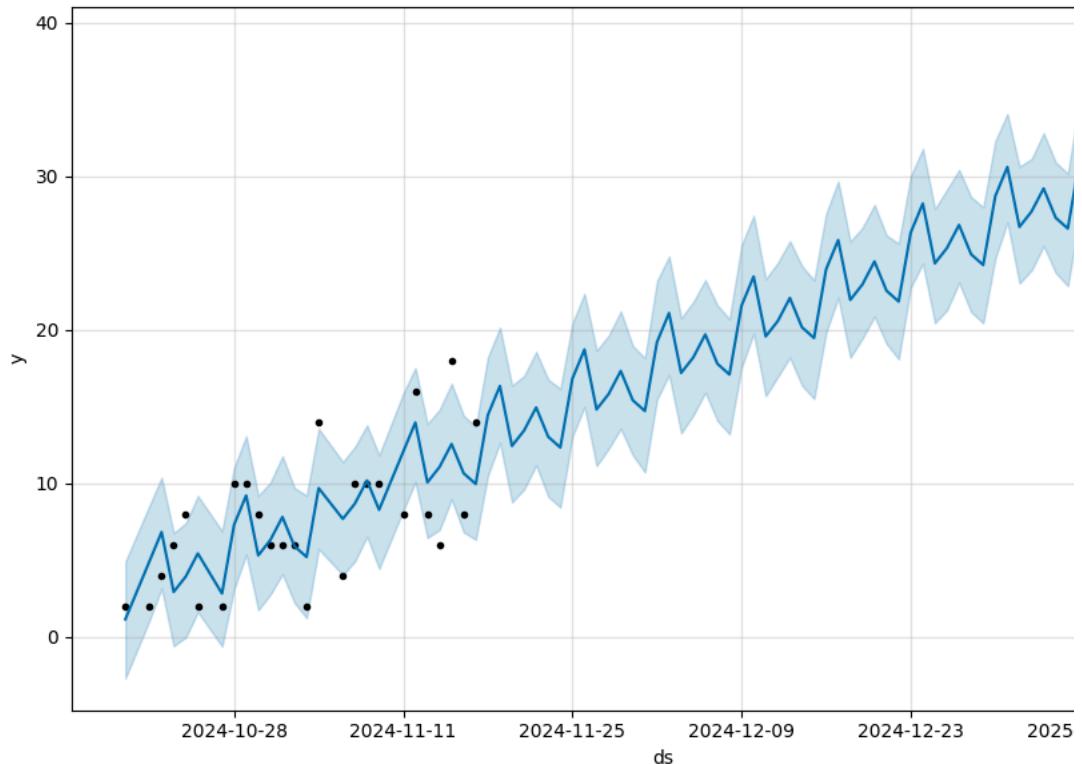
LangChainai-Langgraph

Microsoft-Autogen

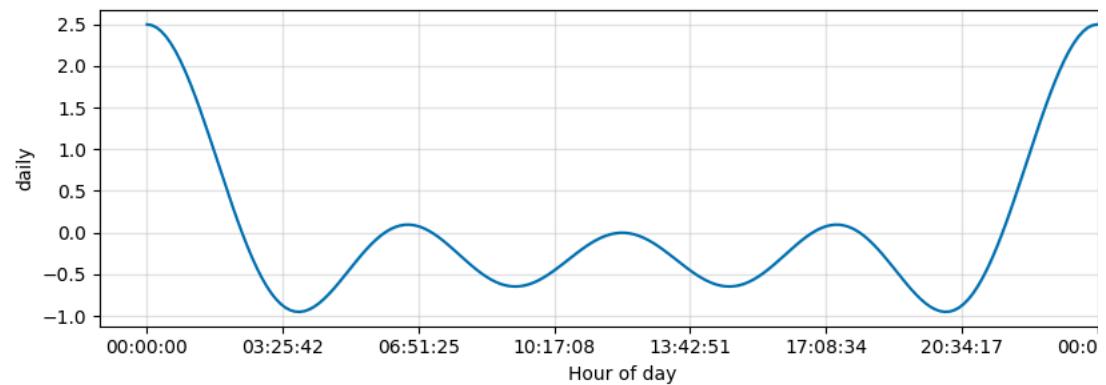
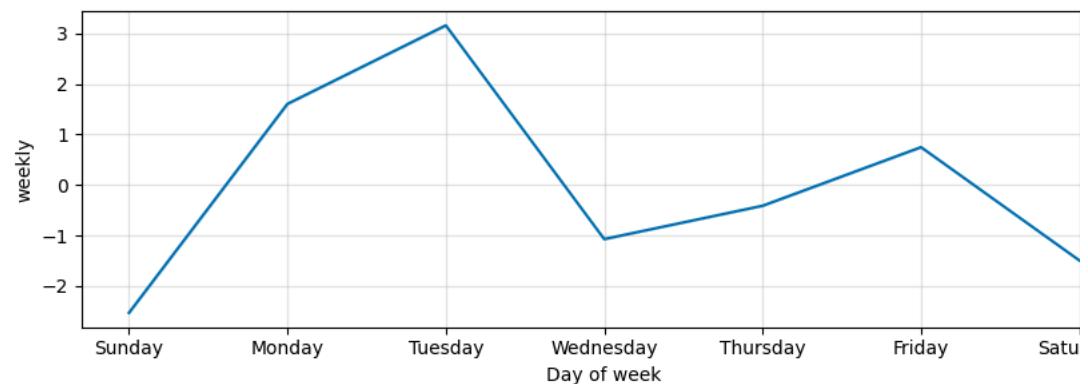
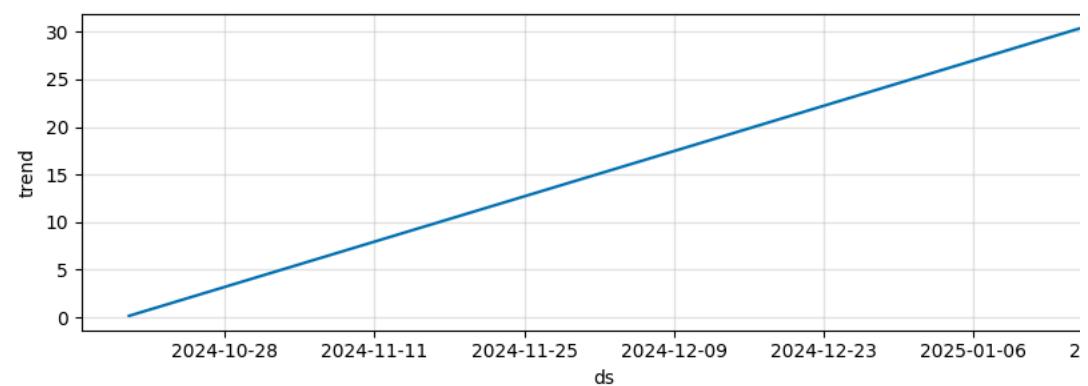
Openai-Cookbook

elasticsearch

Pymilvus



Forecast Components of Pull Request



Timeseries Forecasting of Commits using Facebook/Prophet based on past r

Forecast of Commits

Number of stars

Number of forks

LangChainai-Langchain

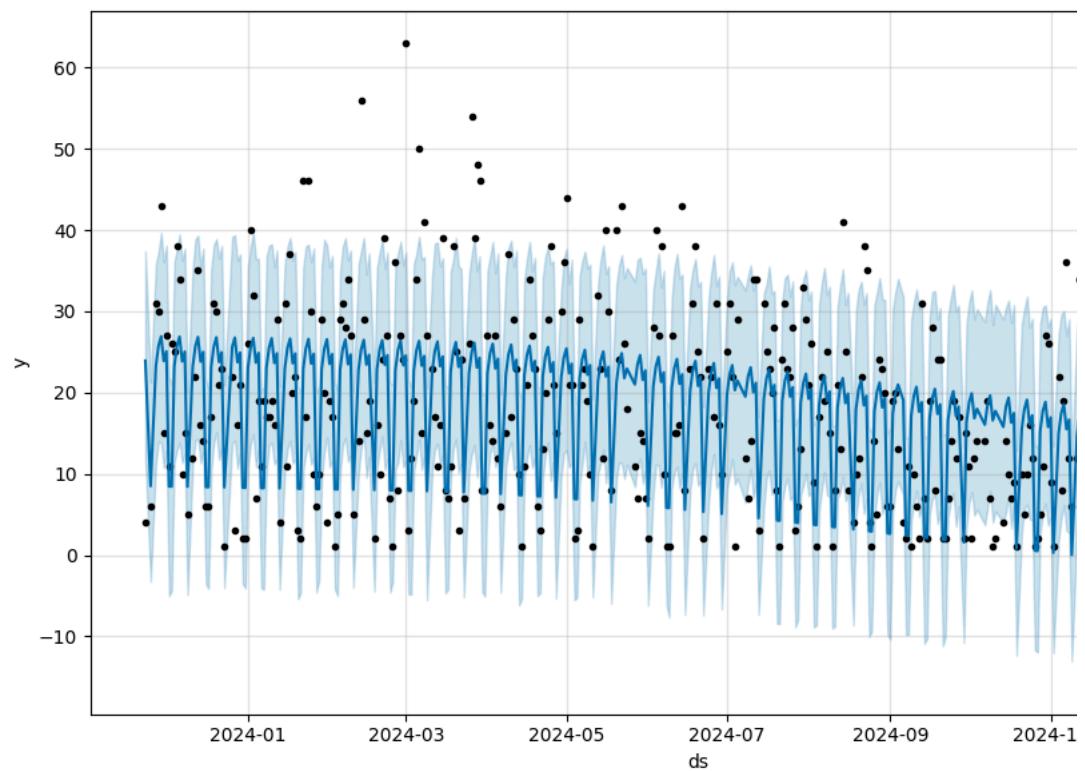
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

Pymilvus



Forecast Components of Commits

Number of stars

Number of forks

LangChainai-Langchain

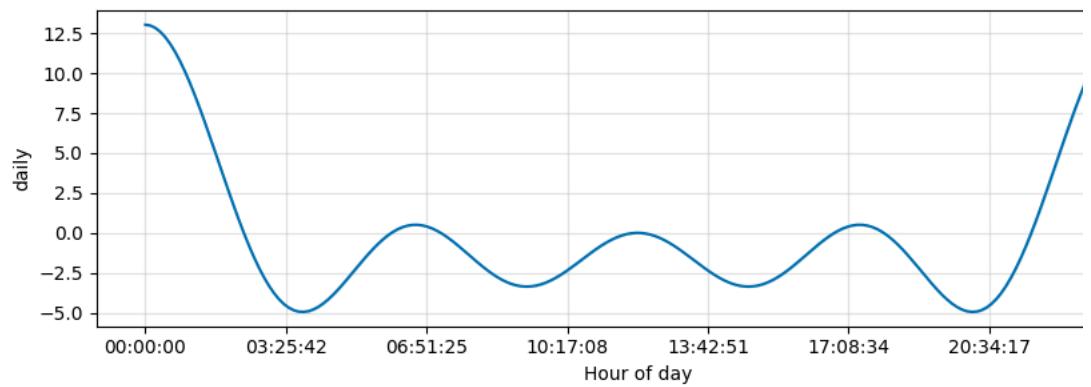
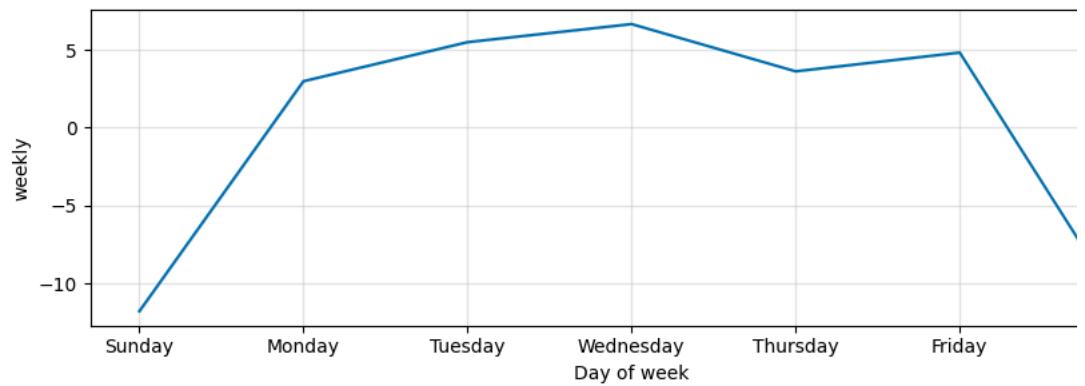
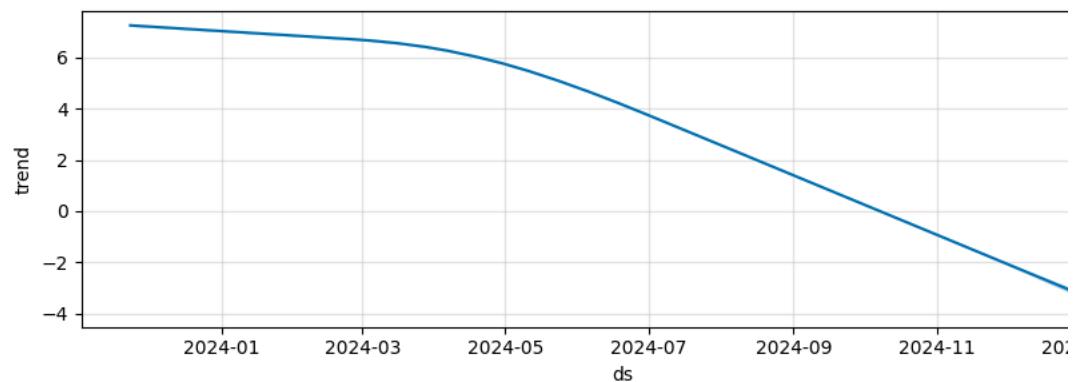
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

Pymilvus



Timeseries Forecasting of Created Issues using StatsModel based on past metrics

Observation Graph of Created Issues

Number of stars

Number of forks

LangChainai-Langchain

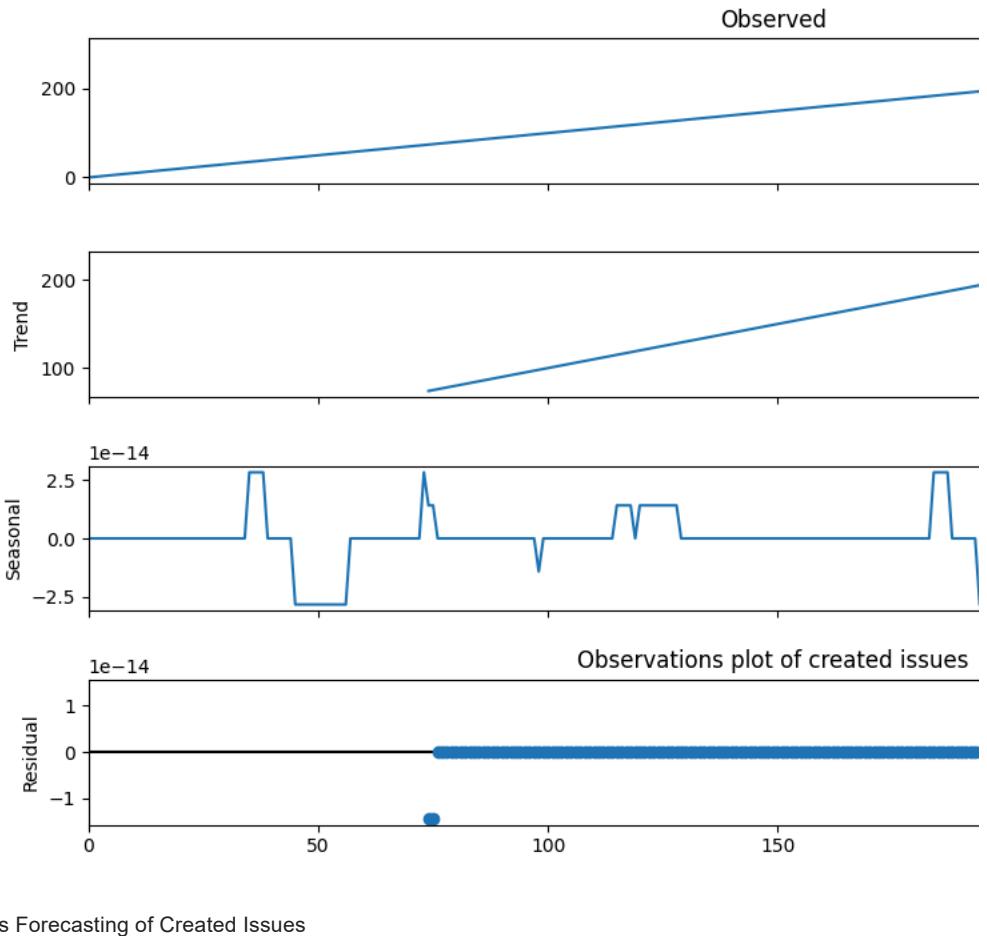
LangChainai-Langgraph

Microsoft-Autogen

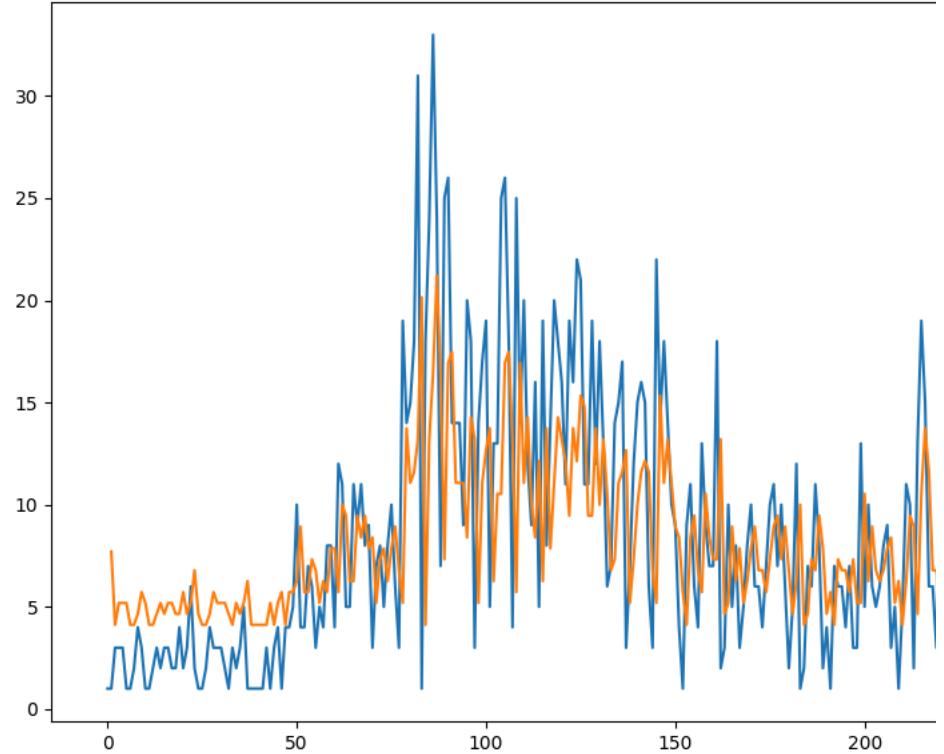
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Timeseries forecasting of created issues

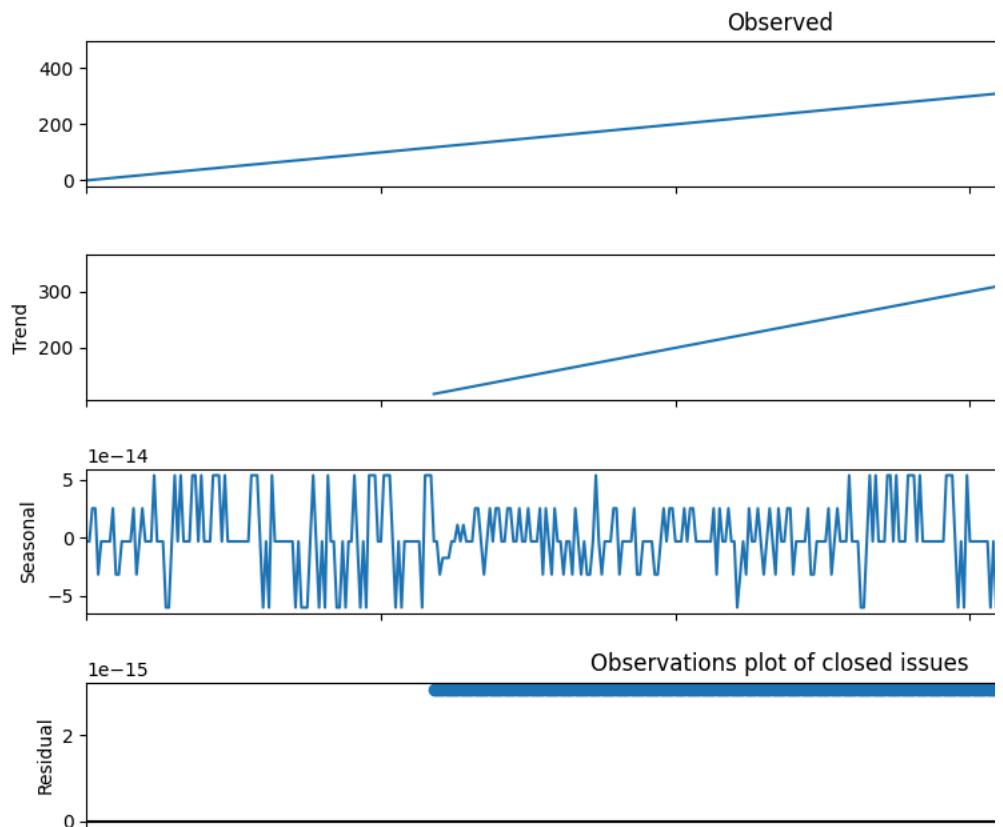


Timeseries Forecasting of Closed Issues using StatsModel based on past metrics

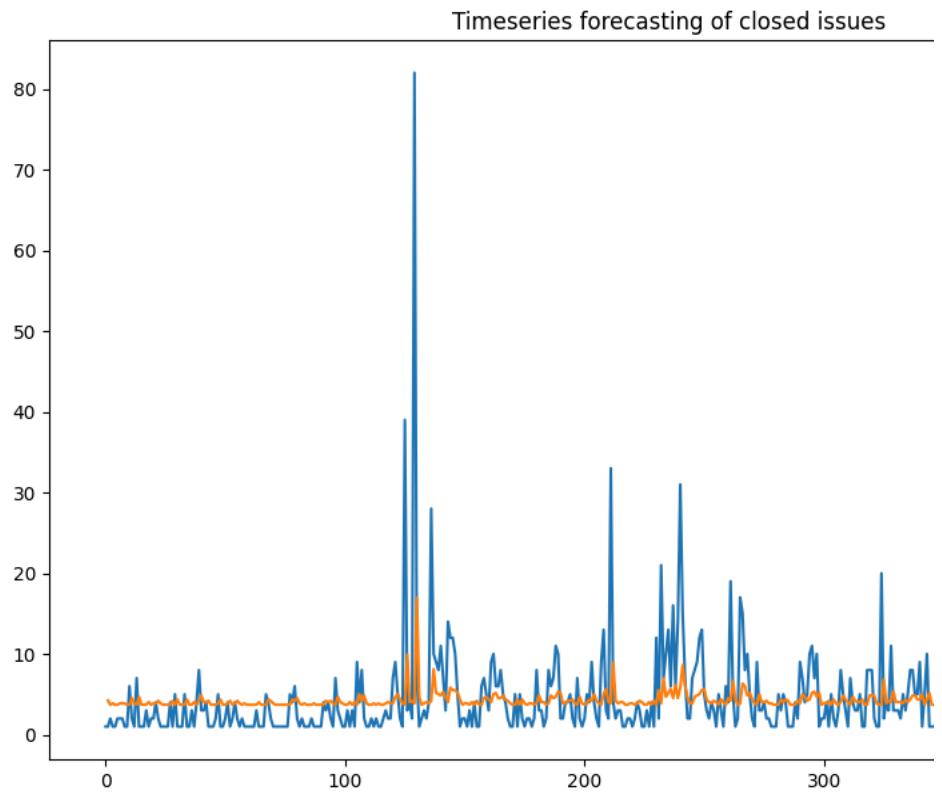
Observation Graph of Closed Issues

Number of stars
Number of forks

LangChainai-Langchain
LangChainai-Langgraph
Microsoft-Autogen
Openai-Cookbook
elasticsearch
Pymilvus



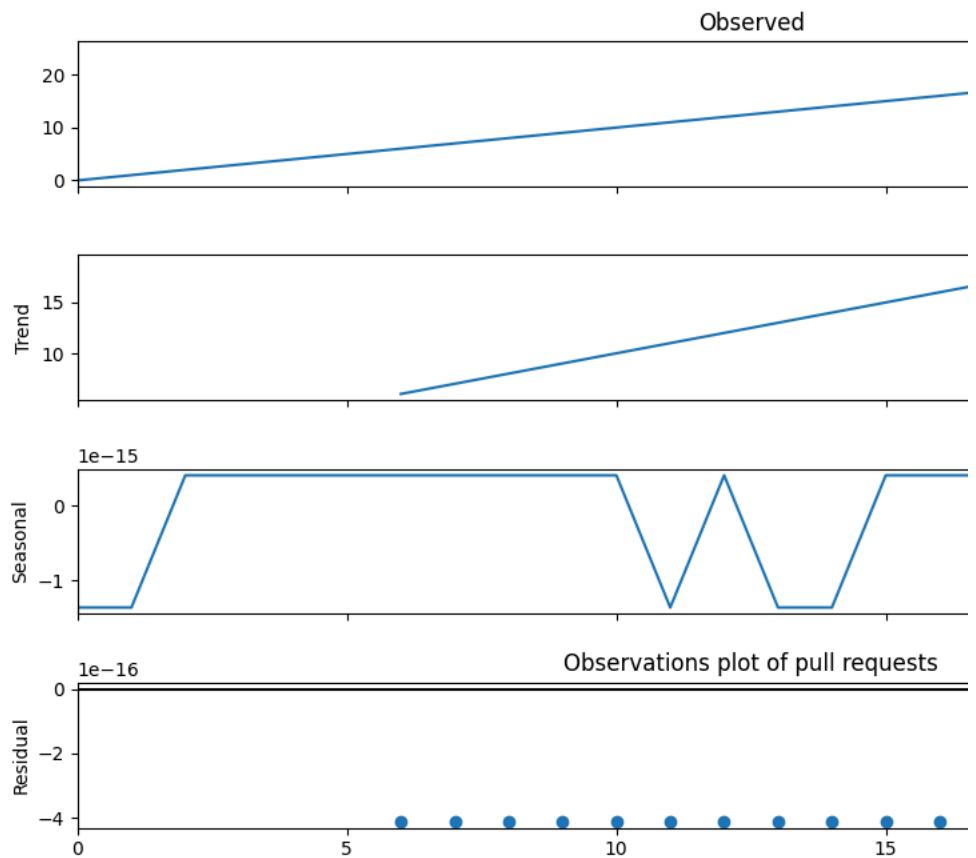
Time Series Forecasting of Closed Issues



Timeseries Forecasting of Pull Request Issues using StatsModel based on past data
Observation Graph of Pull Request Issues

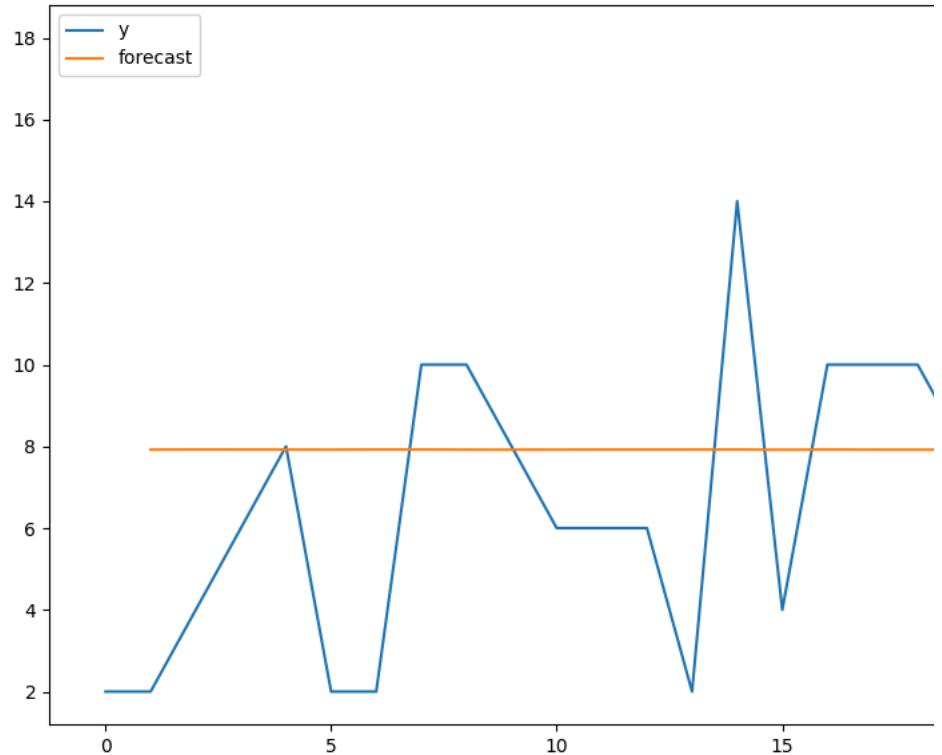
Number of stars
Number of forks

LangChainai-Langchain
LangChainai-Langgraph
Microsoft-Autogen
Openai-Cookbook
elasticsearch
Pymilvus



Time Series Forecasting of Pull Request Issues

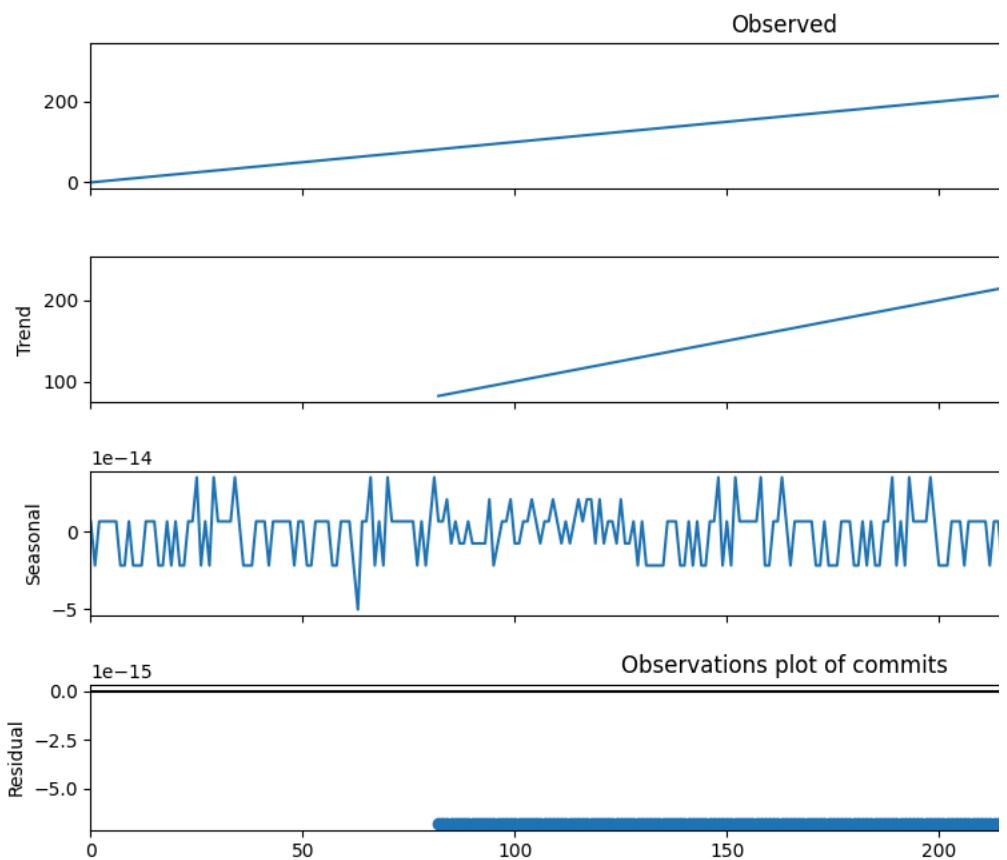
Timeseries forecasting of pull requests



Timeseries Forecasting of Commits Issues using StatsModel based on past r
Observation Graph of Commits Issues

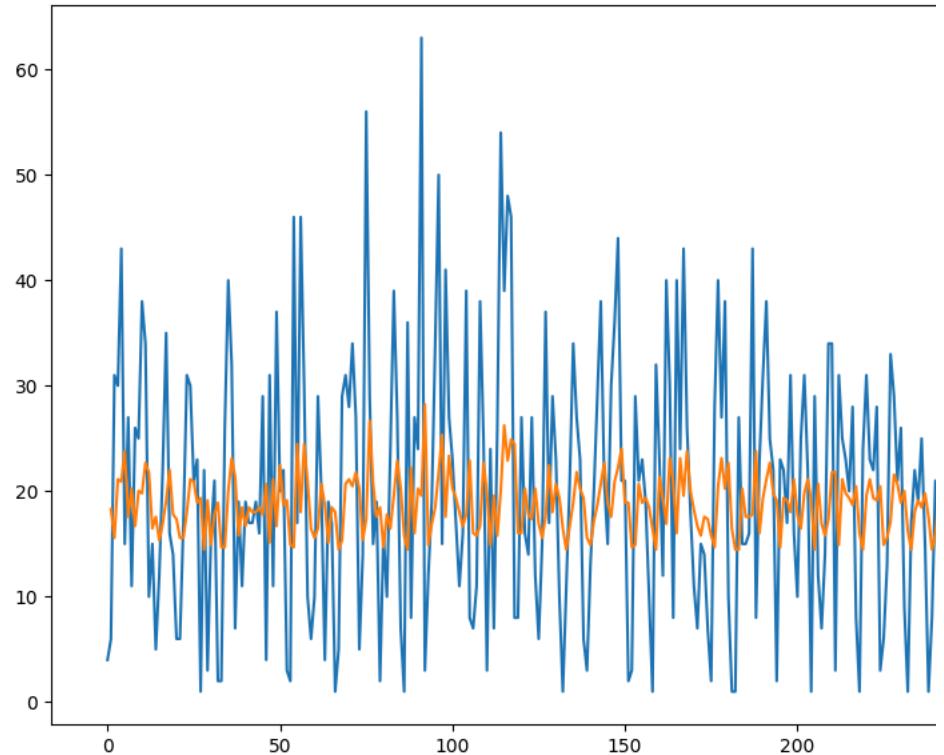
Number of stars
Number of forks

LangChainai-Langchain
LangChainai-Langgraph
Microsoft-Autogen
Openai-Cookbook
elasticsearch
Pymilvus



Time Series Forecasting of Commits Issues

Timeseries forecasting of commits



Timeseries Forecasting of Releases using Tensorflow and Keras LSTM

Model Loss for Releases

Number of stars

Number of forks

LangChainai-Langchain

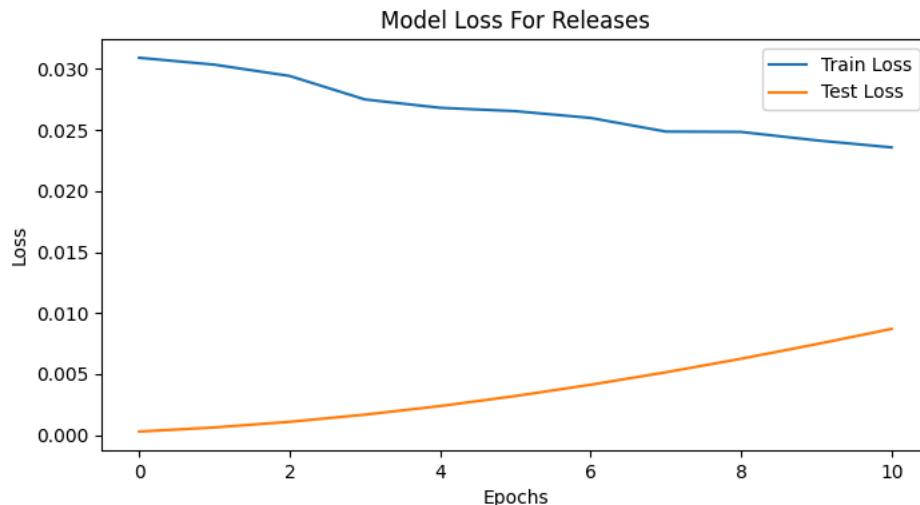
LangChainai-Langgraph

Microsoft-Autogen

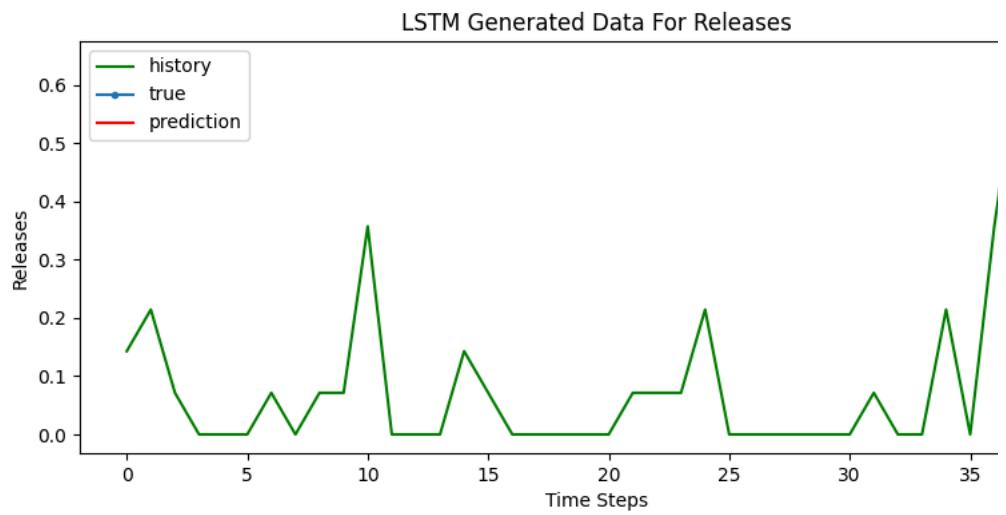
Openai-Cookbook

elasticsearch

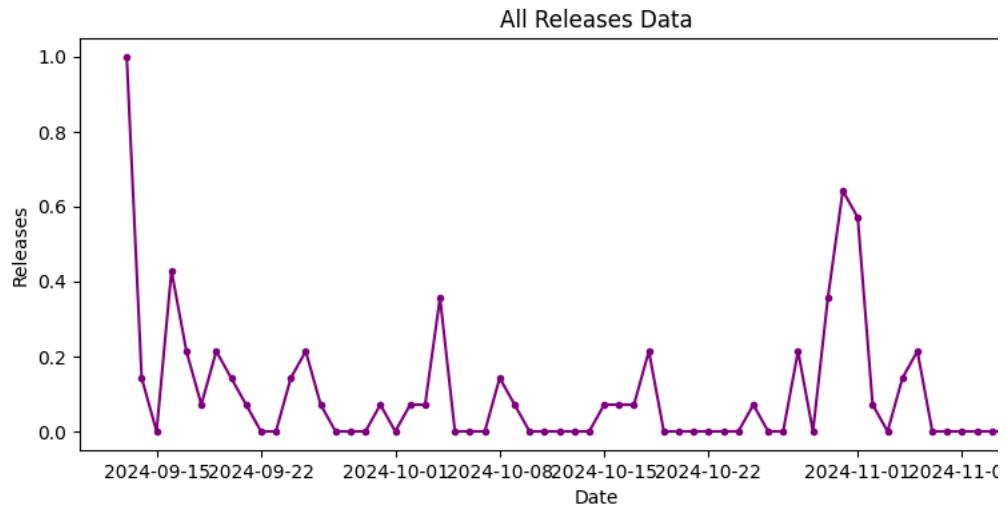
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LSTM Generated Data for Releases



All Issues Data for Releases

**Timeseries Forecasting of Release using StatsModel**

Observation Graph of Release Issues

Number of stars

Number of forks

LangChainai-Langchain

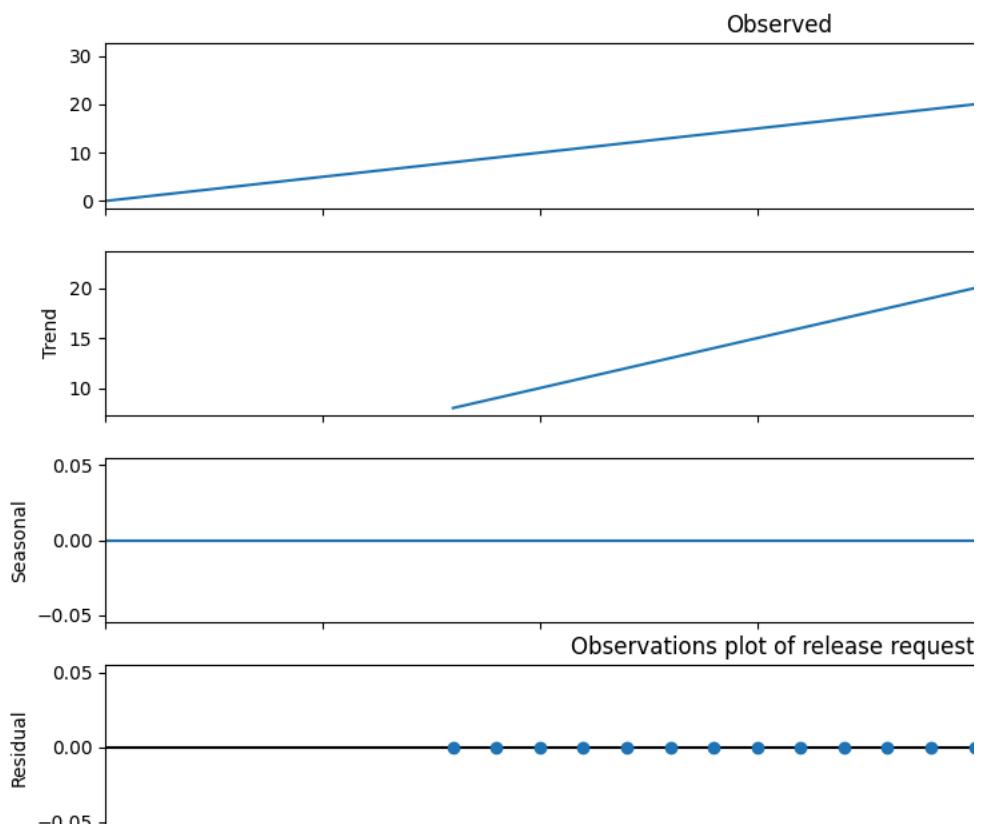
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Microsoft-Autogen

Openai-Cookbook

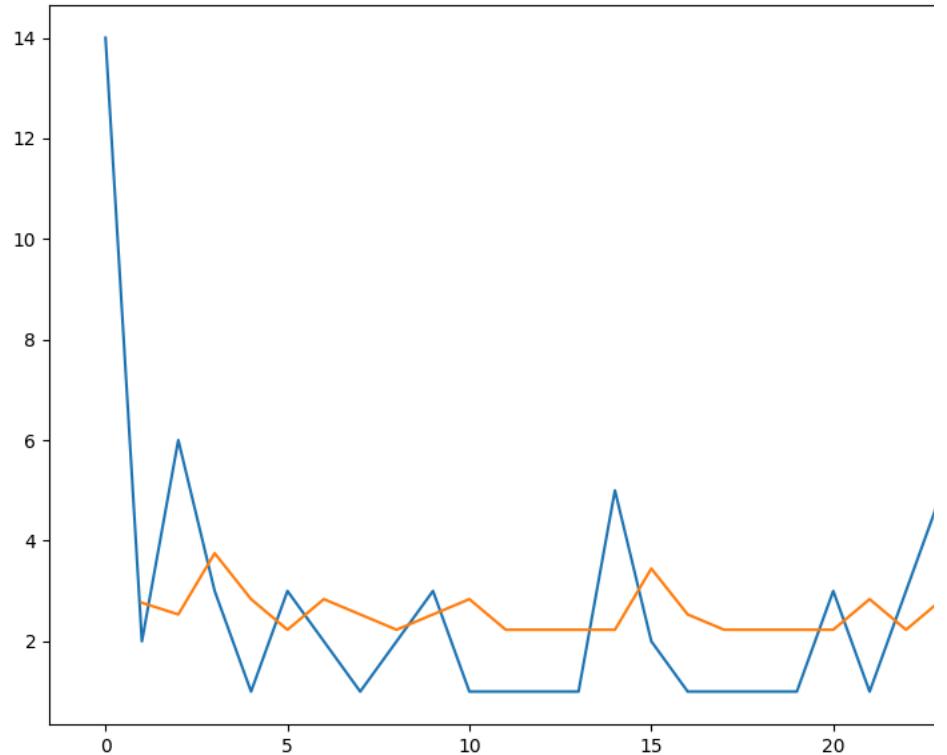
elasticsearch

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Time Series Forecasting of Releases

Timeseries forecasting of release requests

**Timeseries Forecasting of Releases using Facebook/Prophet**

Forecast of Releases

Number of stars

Number of forks

LangChainai-Langchain

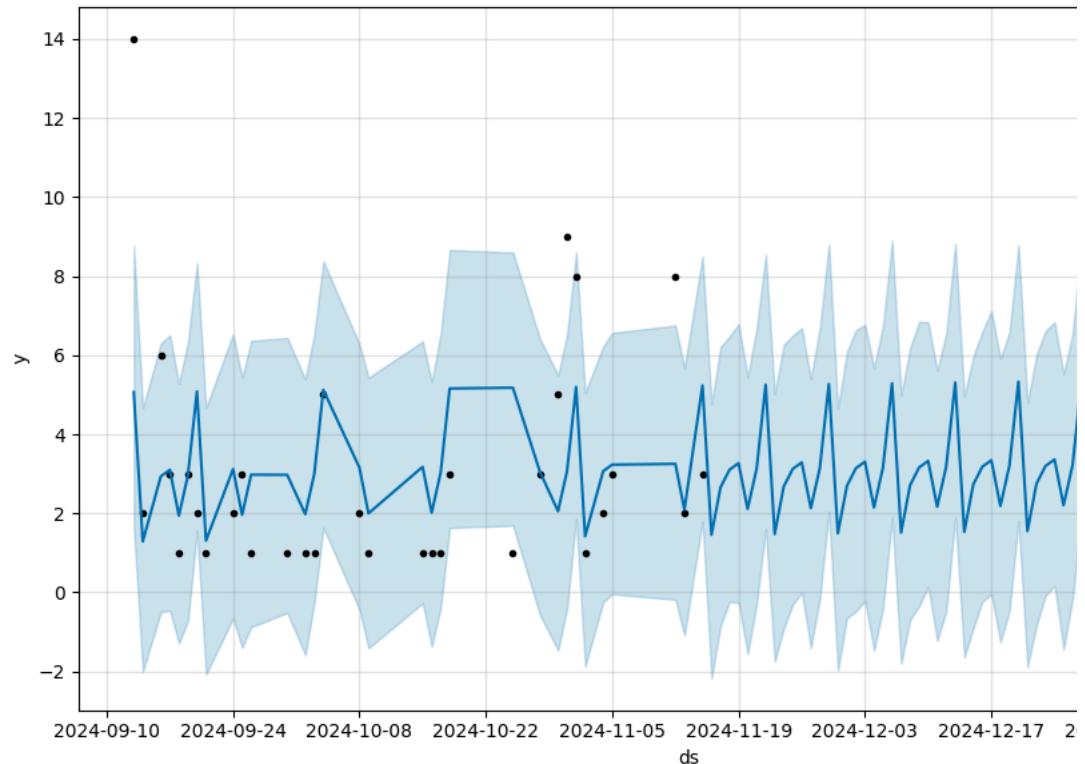
LangChainai-Langgraph

Microsoft-Autogen

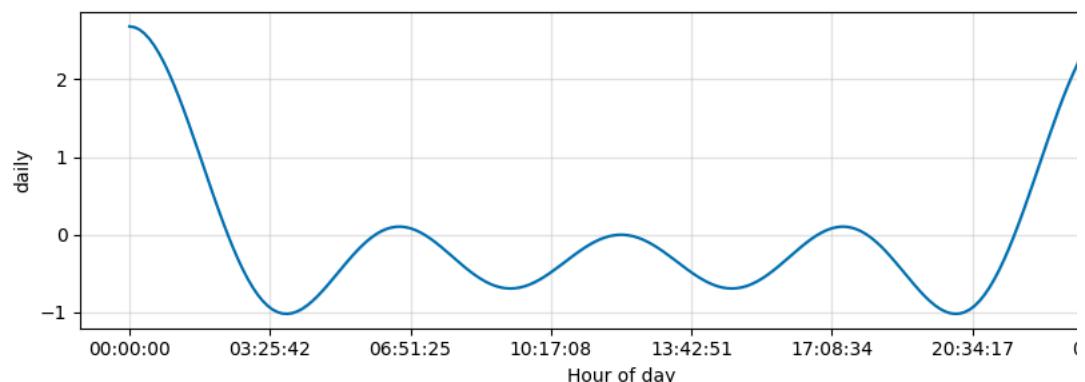
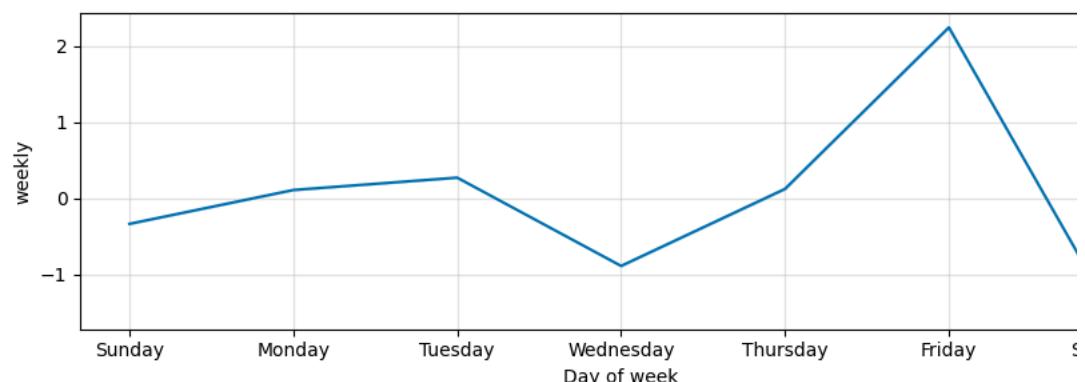
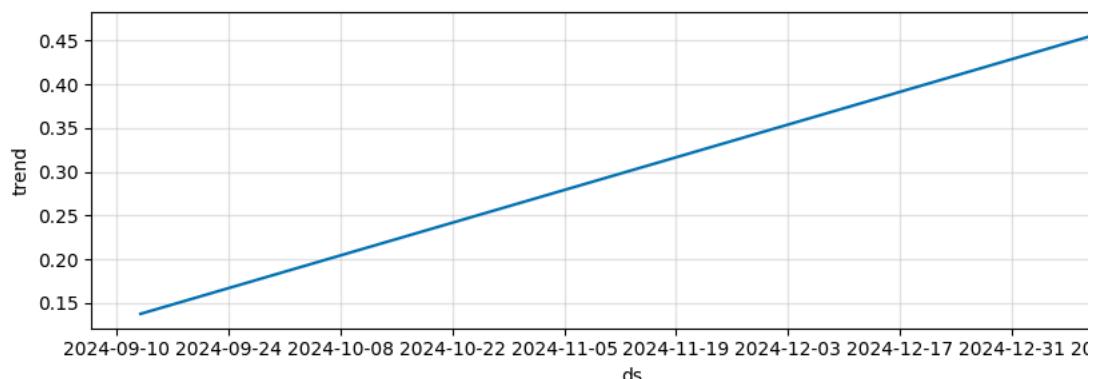
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Forecast Components of Releases



Timeseries Forecasting of Contributors using Tensorflow and Keras LSTM

Model Loss for Contributors

Number of stars

Number of forks

LangChainai-Langchain

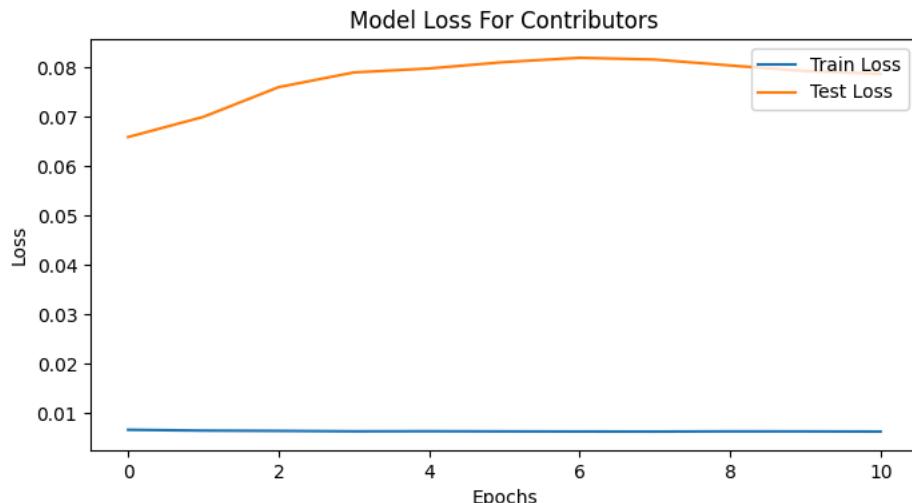
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

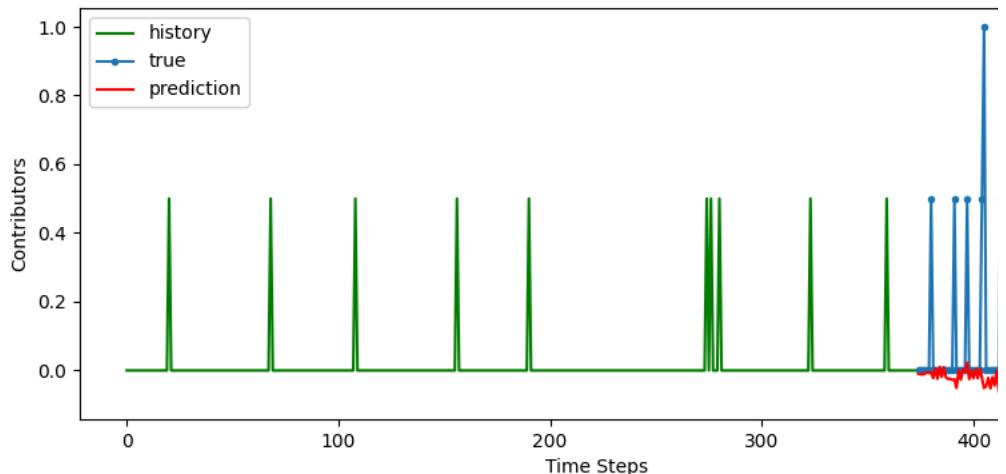
elasticsearch

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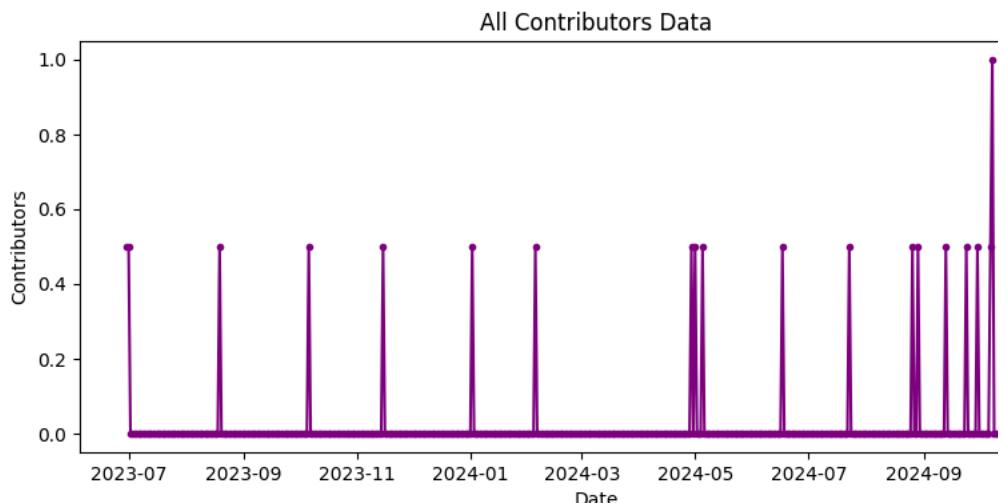


LSTM Generated Data for Contributors

LSTM Generated Data For Contributors



All Issues Data for Contributors

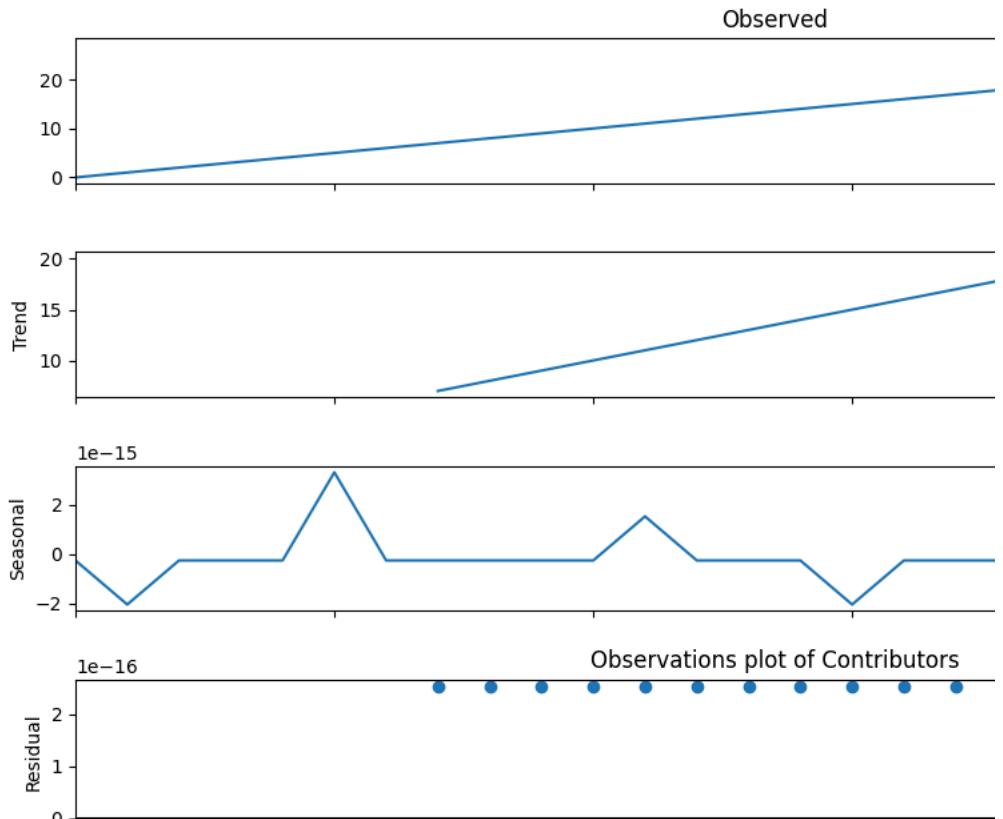


Timeseries Forecasting of Contributors using StatsModel

Observation Graph of Contributors

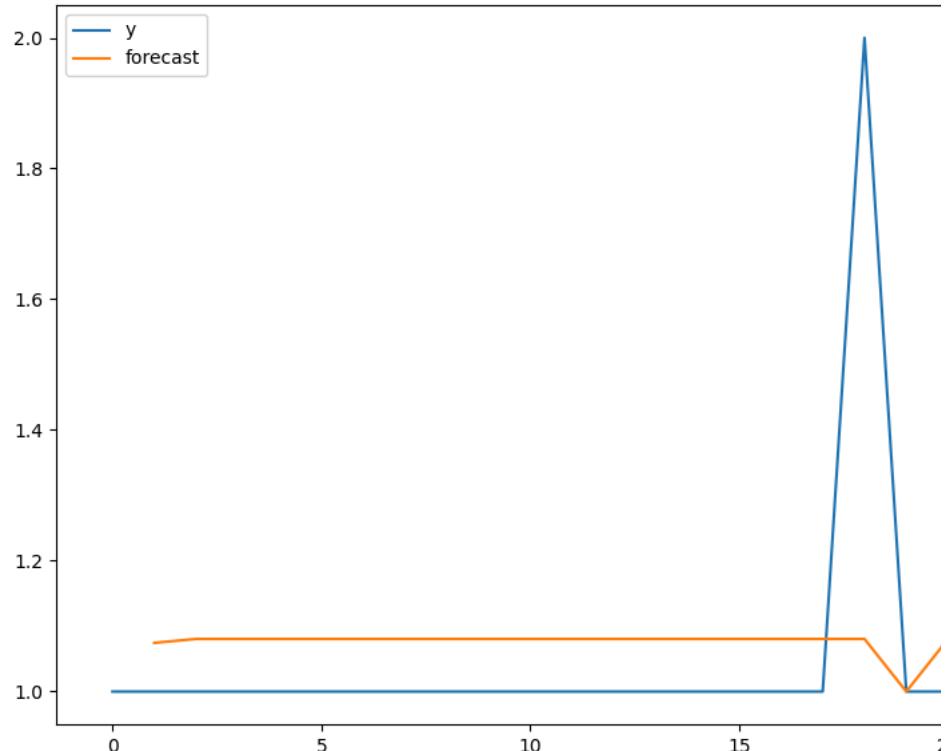
Number of stars
Number of forks

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LangChainai-Langgraph
Microsoft-Autogen
Openai-Cookbook
elasticsearch
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Time Series Forecasting of Contributors

Observations plot of Contributors



Timeseries Forecasting of Contributors using Facebook/Prophet

Forecast of Contributors

Number of stars

Number of forks

LangChainai-Langchain

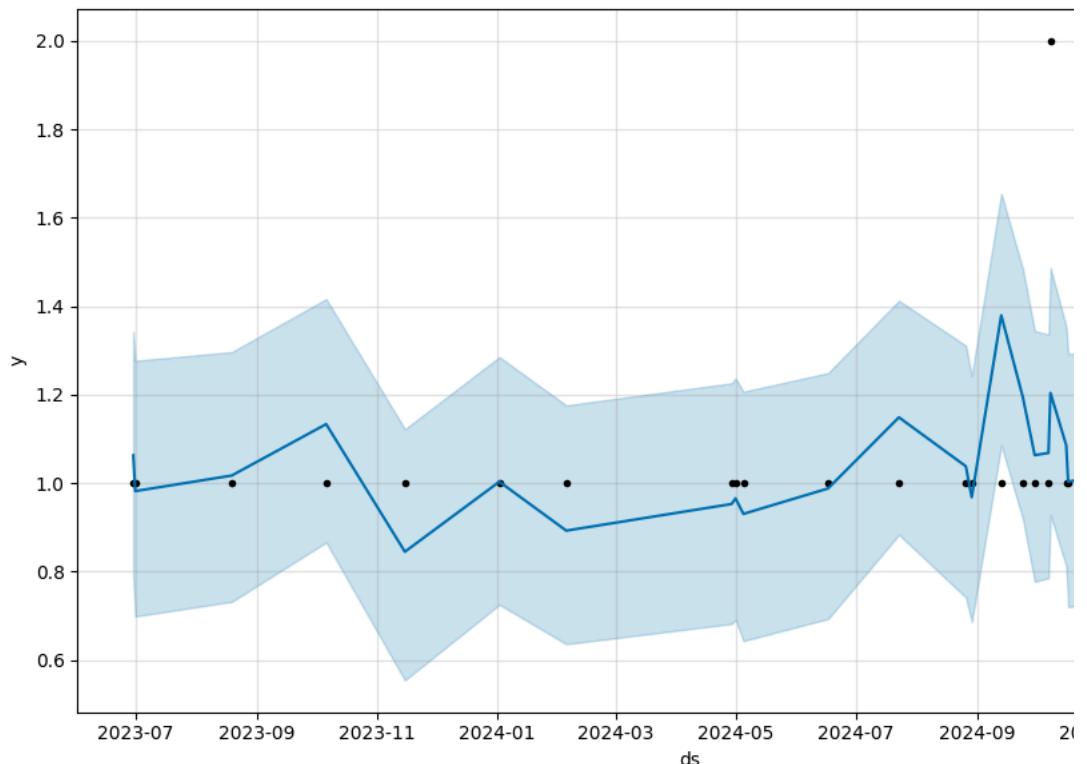
LangChainai-Langgraph

Microsoft-Autogen

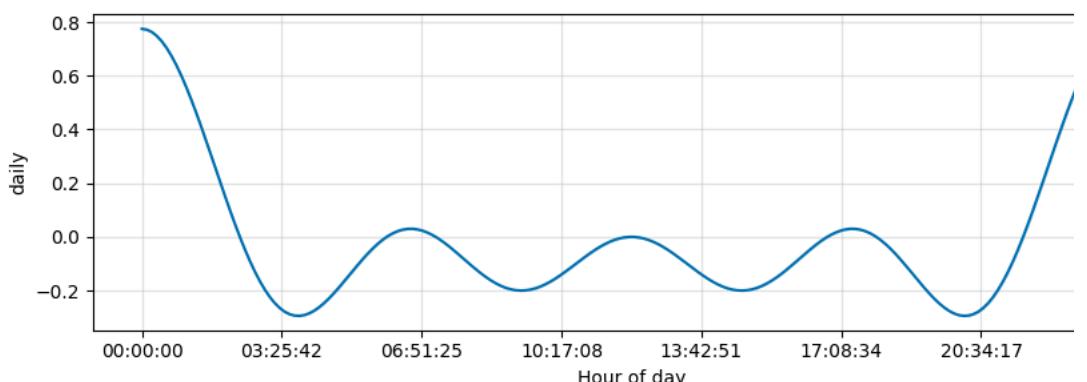
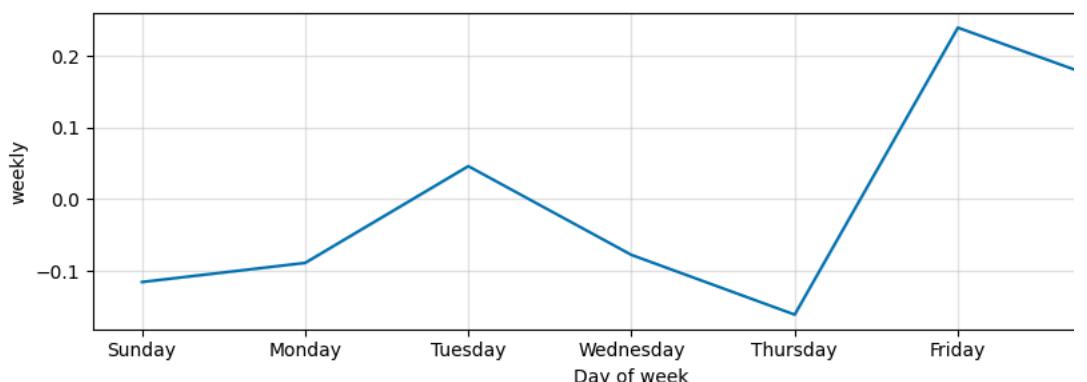
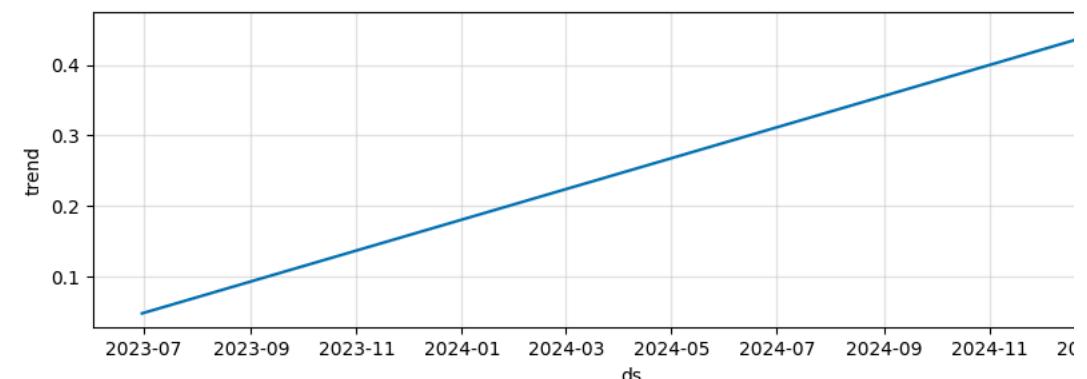
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Forecast Components of Contributors



Timeseries Forecasting of Branches using Tensorflow and Keras LSTM

Model Loss for Branches

Number of stars

Number of forks

LangChainai-Langchain

LangChainai-Langgraph

Microsoft-Autogen

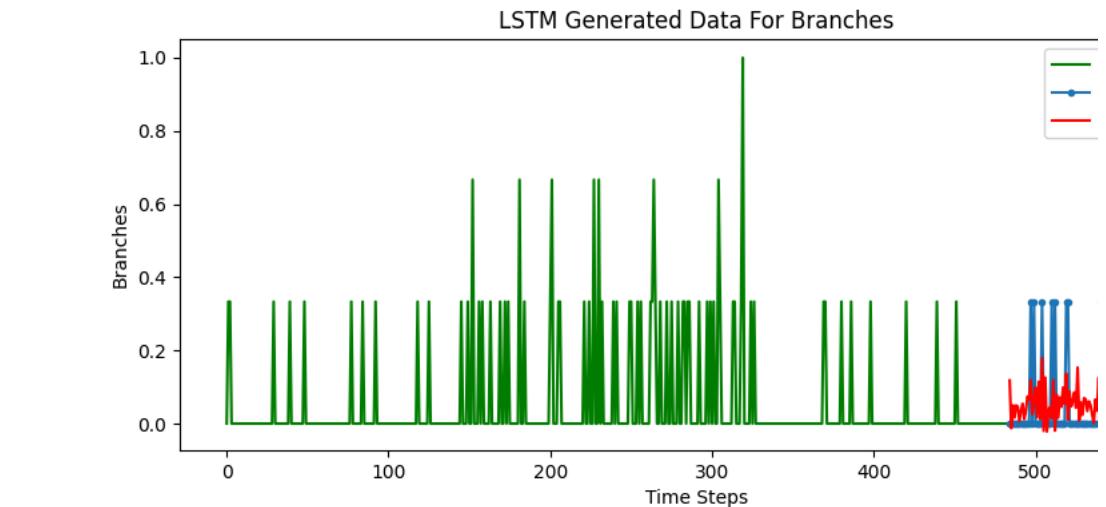
Openai-Cookbook

elasticsearch

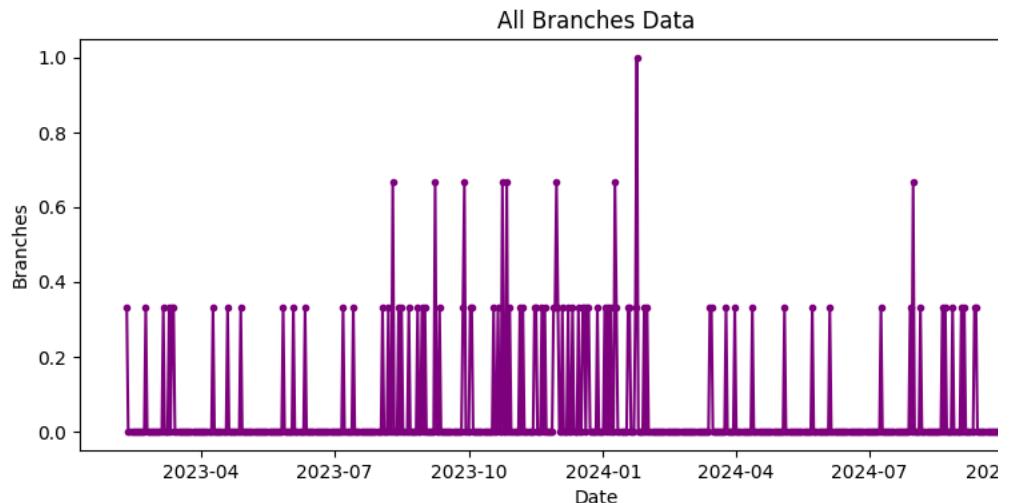
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LSTM Generated Data for Branches



All Issues Data for Branches

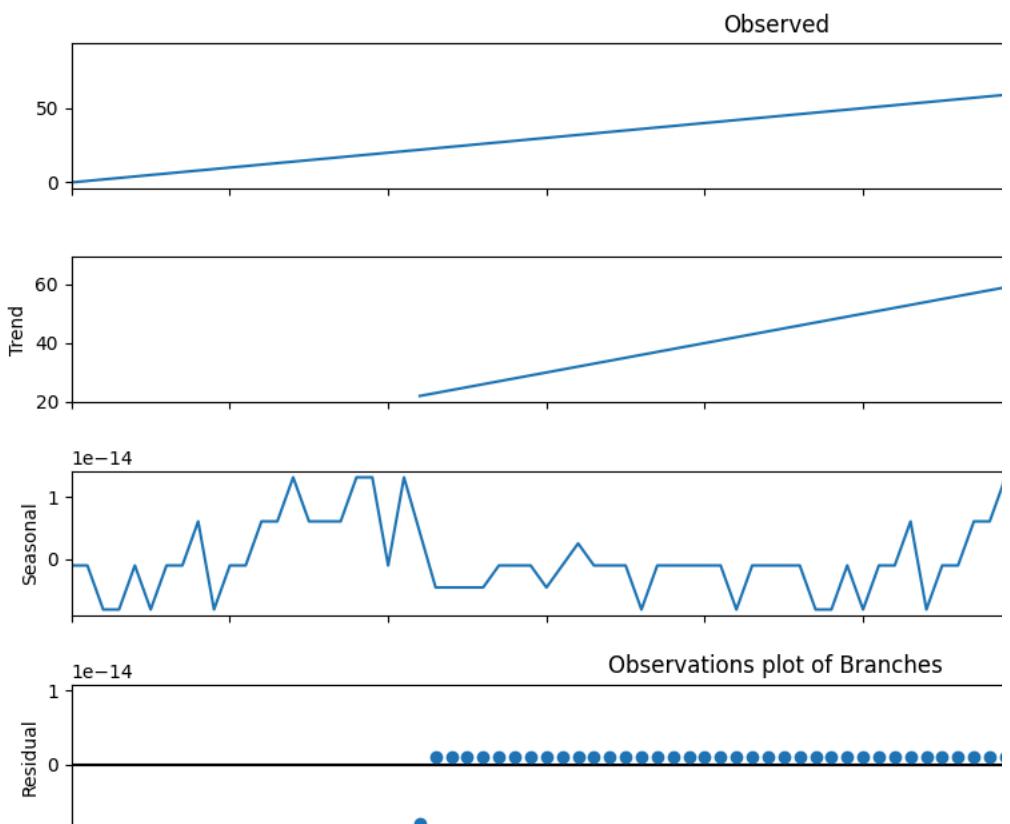


Timeseries Forecasting of Branches using StatsModel

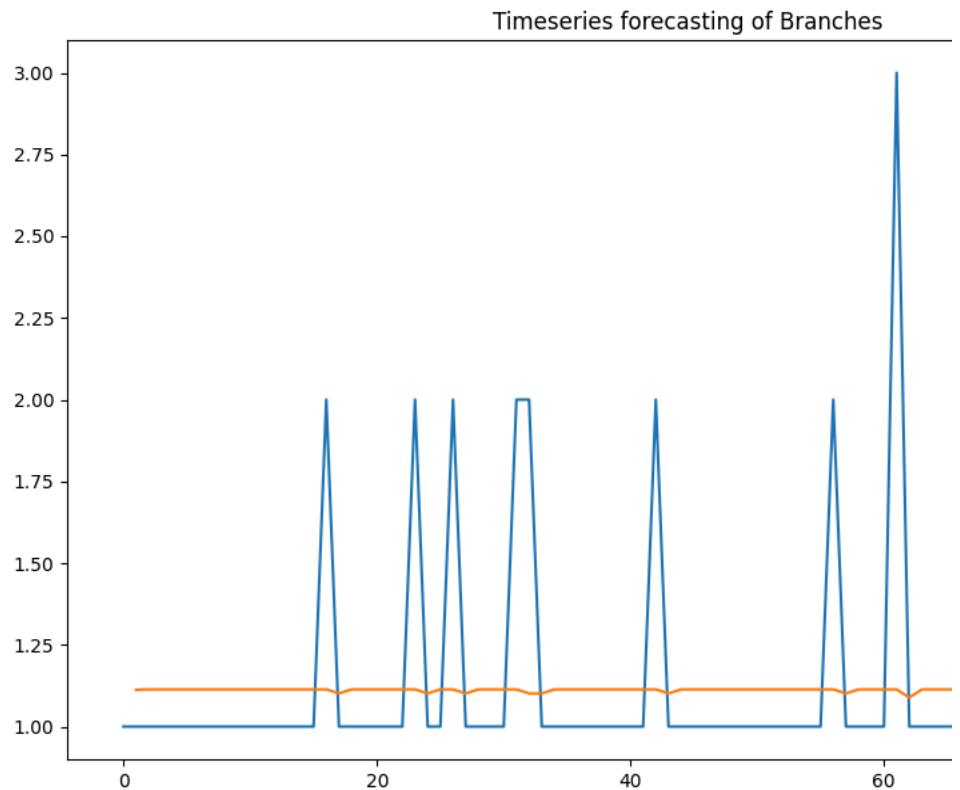
Observation Graph of Branches

Number of stars
Number of forks

LangChainai-Langchain
LangChainai-Langgraph
Microsoft-Autogen
Openai-Cookbook
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Time Series Forecasting of Branches



Timeseries Forecasting of Branches using Facebook/Prophet

Forecast of Branches

Number of stars

Number of forks

LangChainai-Langchain

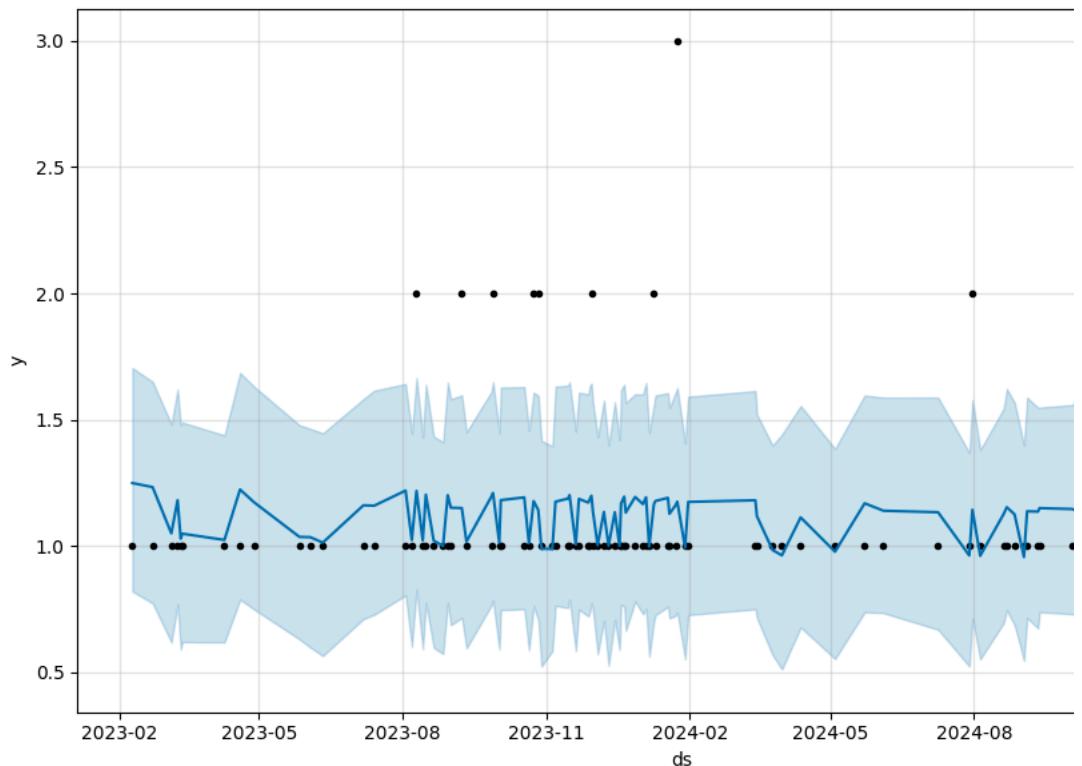
LangChainai-Langgraph

Microsoft-Autogen

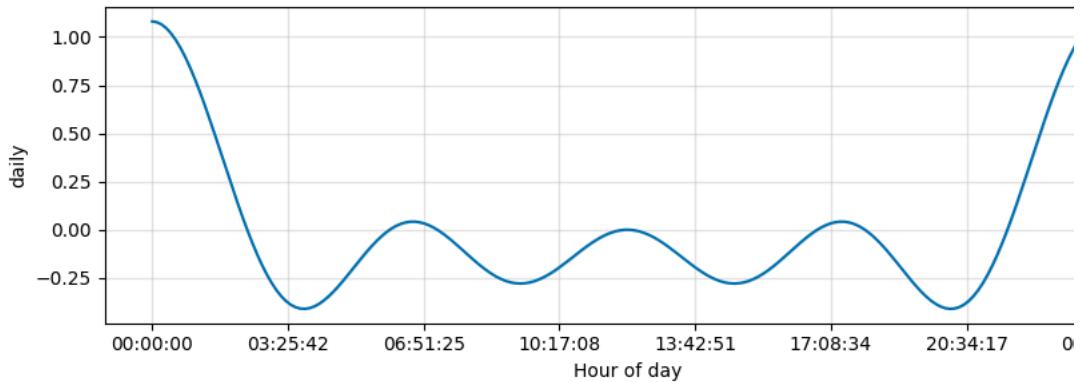
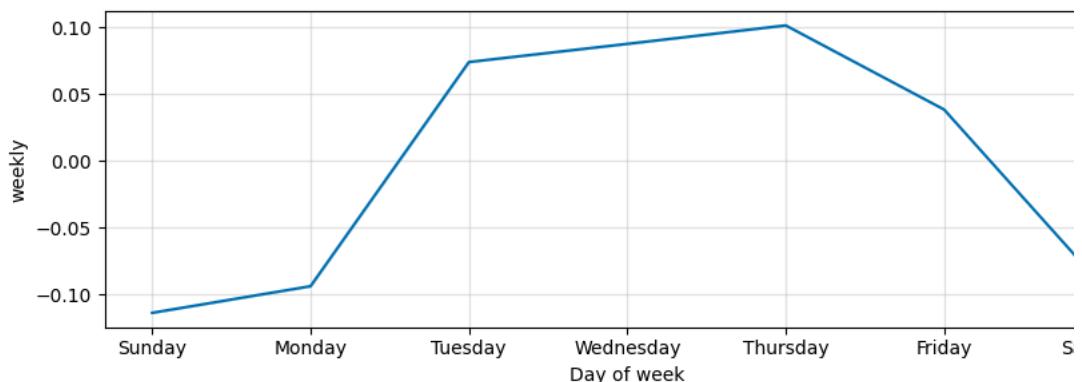
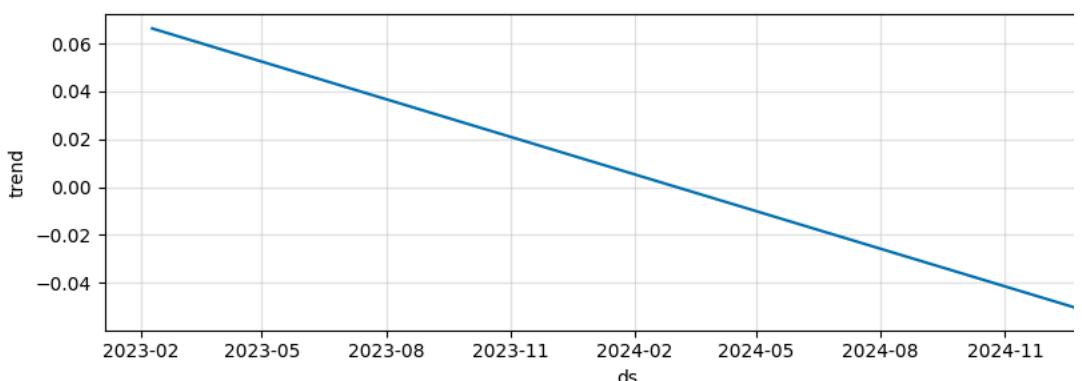
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Forecast Components of Branches



Timeseries Forecasting

Number of stars

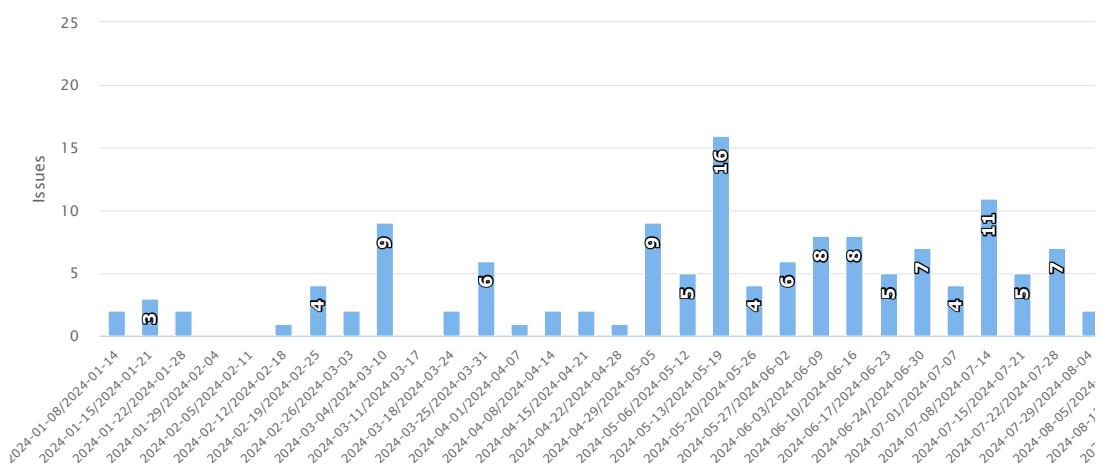
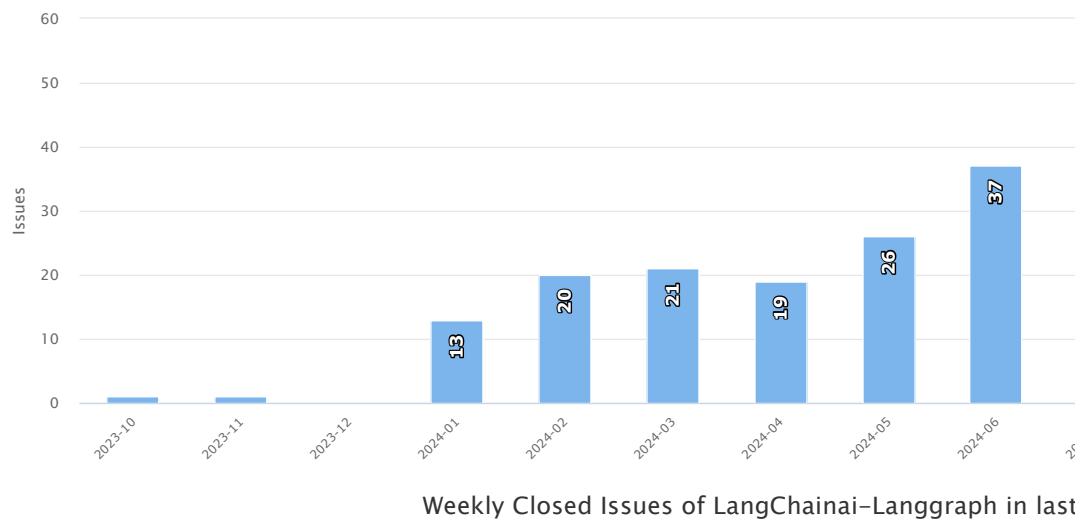
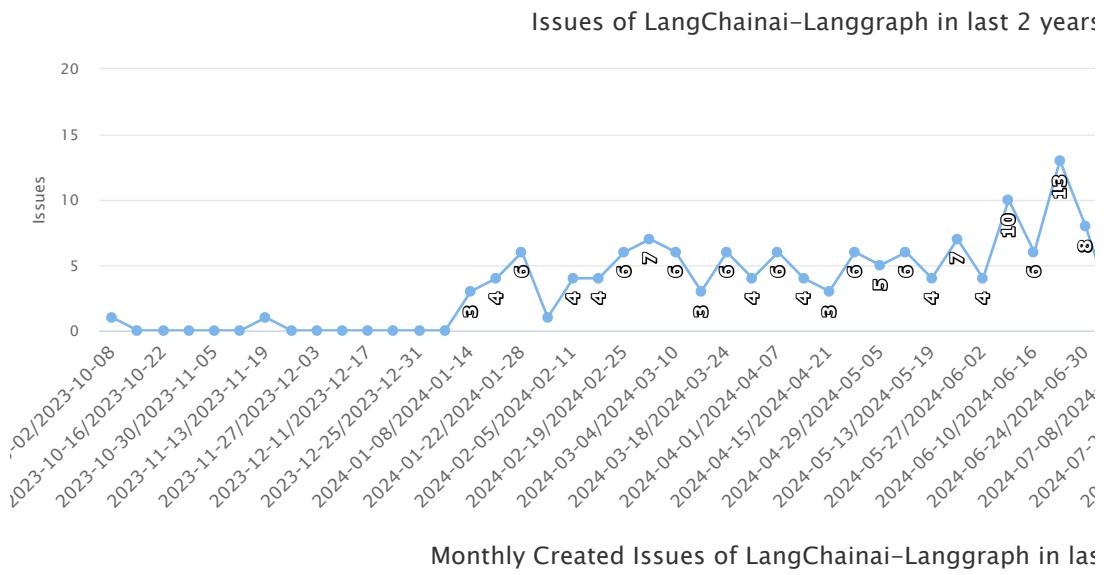
Number of forks

LangChainai-Langchain

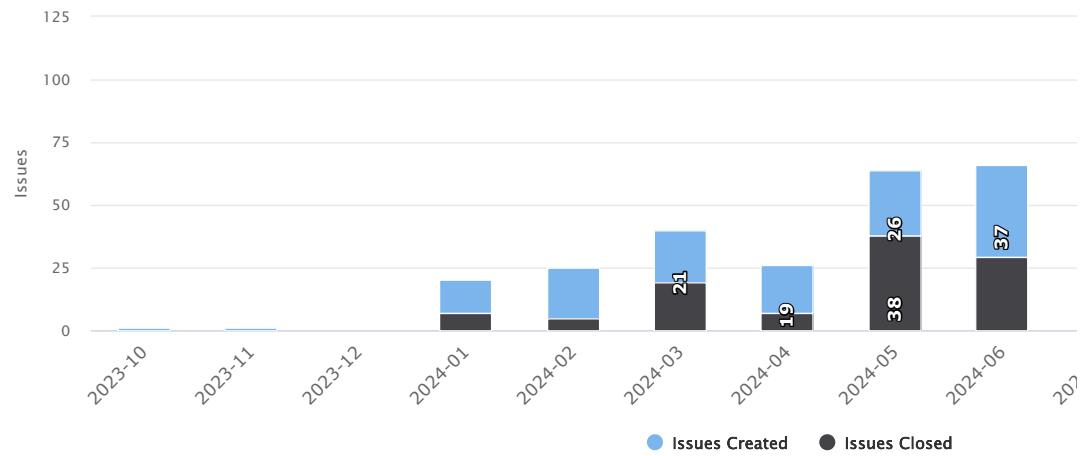
LangChainai-Langgraph

Openai-Cookbook

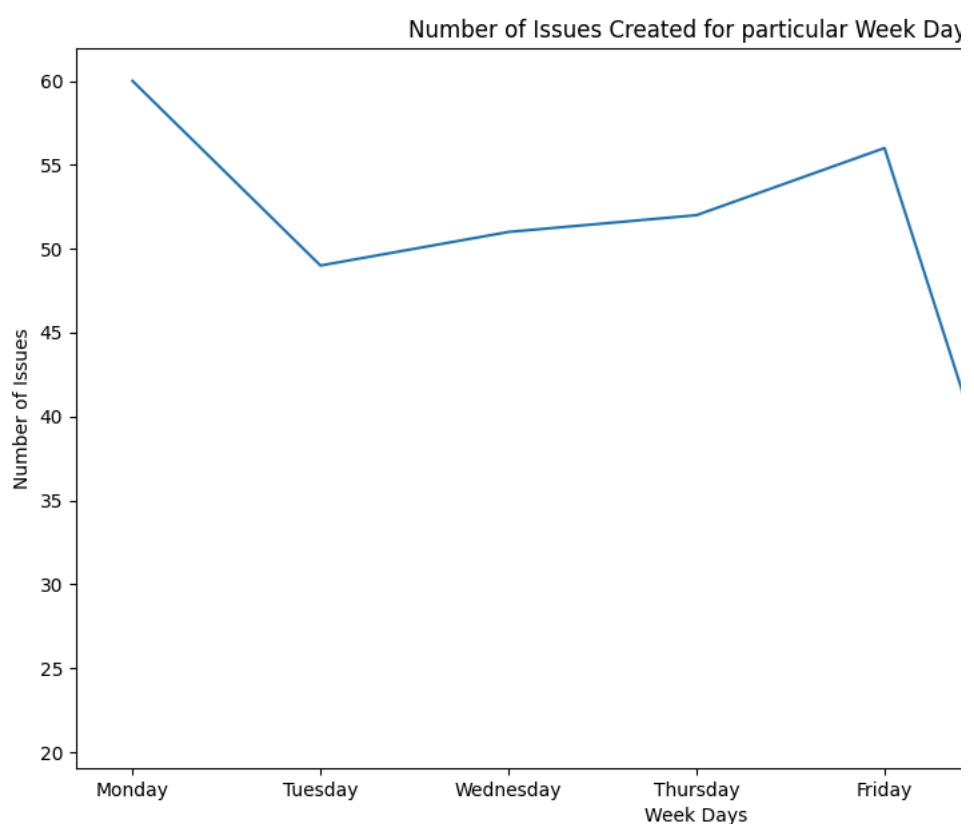
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Created and Closed Issues of LangChainai–Langgraph in I



The day of the week maximum number of issues created



The day of the week maximum number of issues Closed

Number of stars

Number of forks

LangChainai-Langchain

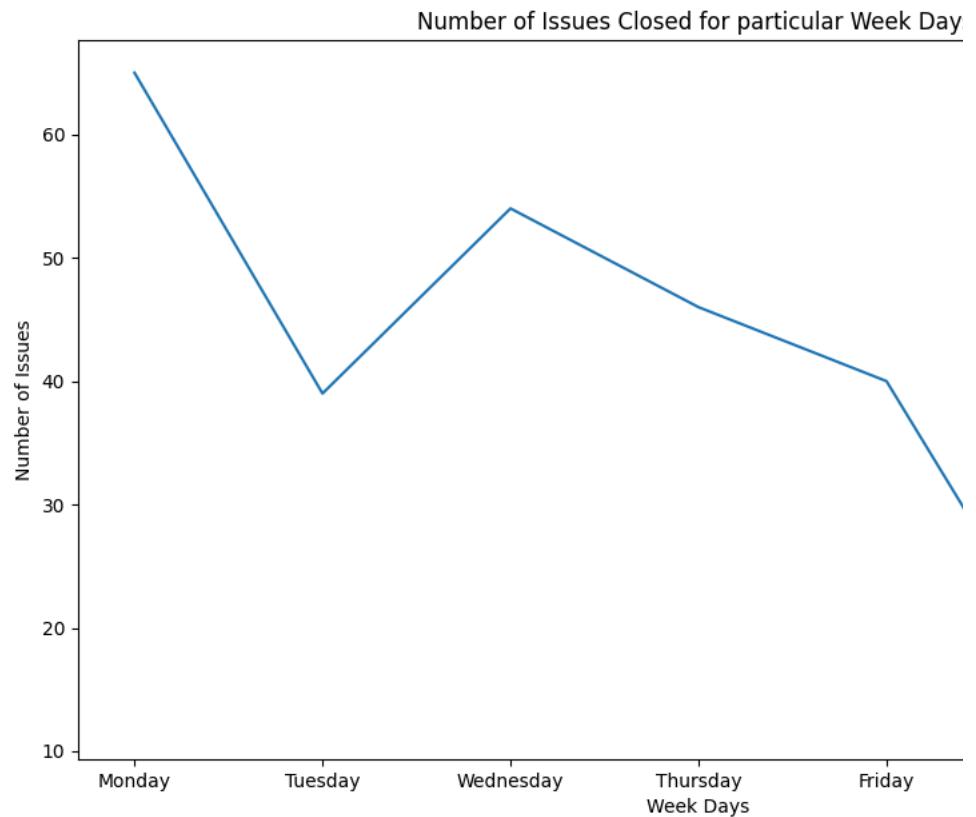
LangChainai-Langgraph

Microsoft-Autogen

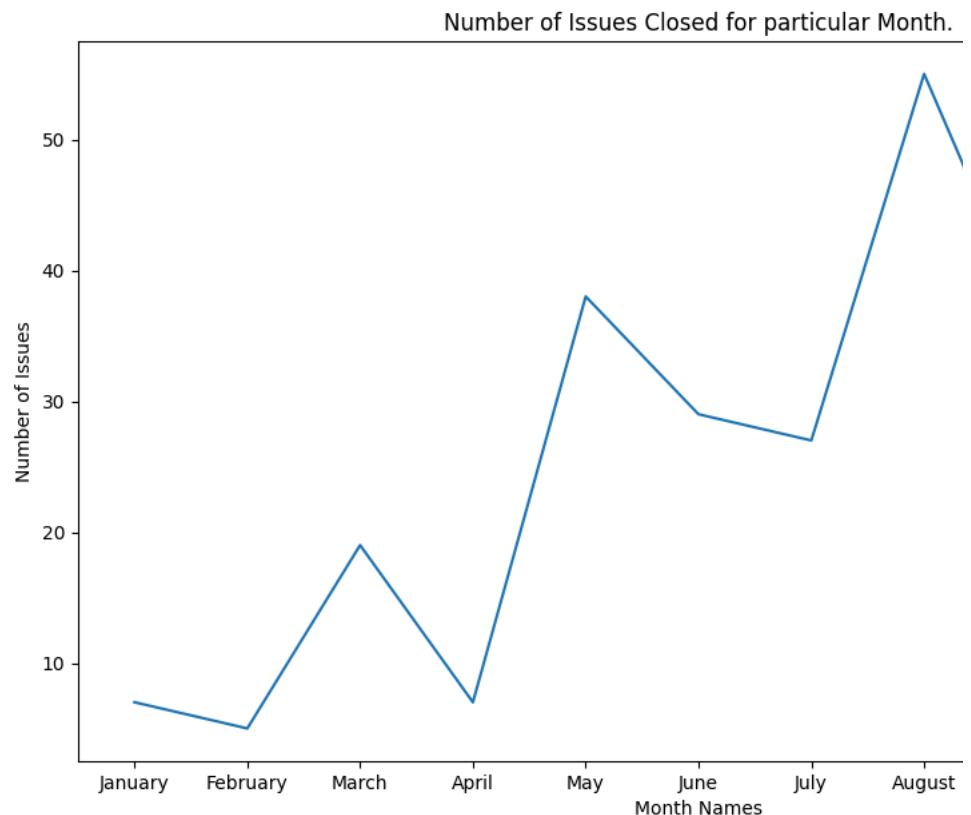
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The month of the year that has maximum number of issues closed



Timeseries Forecasting of Created Issues using Tensorflow and Keras LSTM

Model Loss for Created Issues

Number of stars

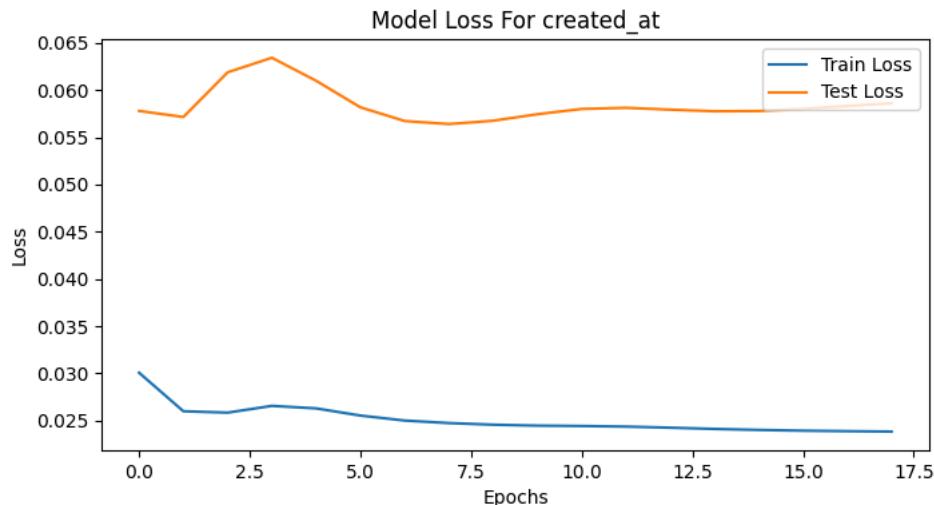
Number of forks

LangChainai-Langchain

LangChainai-Langgraph

Microsoft-Autogen

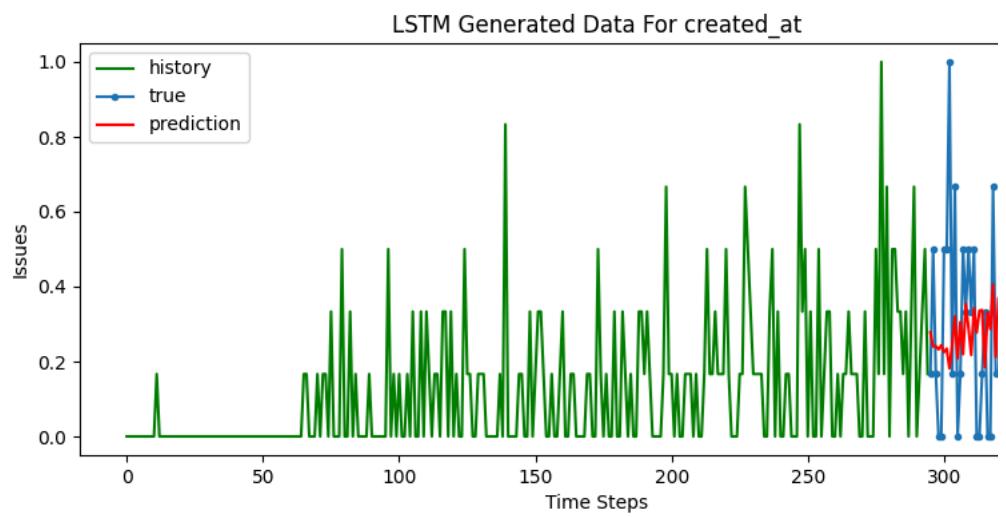
Openai-Cookbook



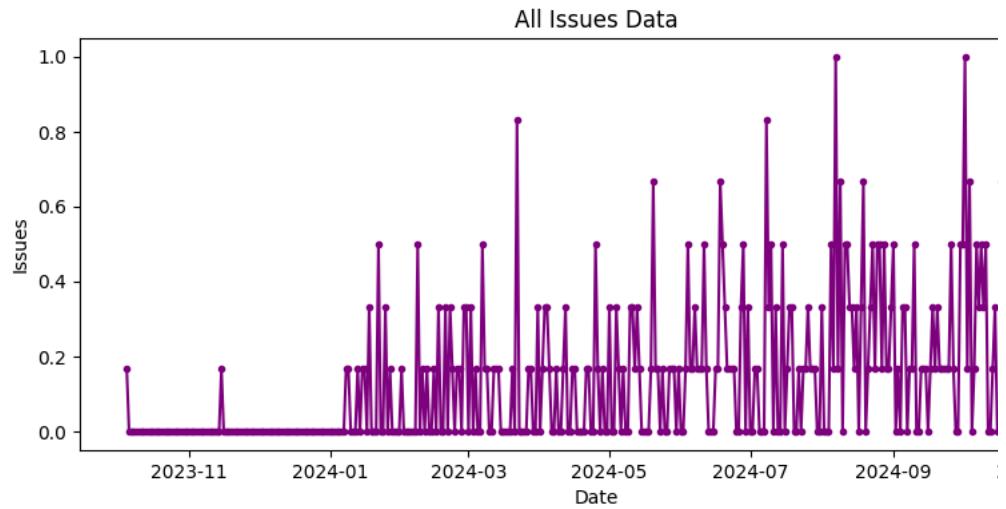
LSTM Generated Data for Created Issues

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All Issues Data for Created Issues



Timeseries Forecasting of Closed Issues using Tensorflow and Keras LSTM |

Model Loss for Closed Issues

Number of stars

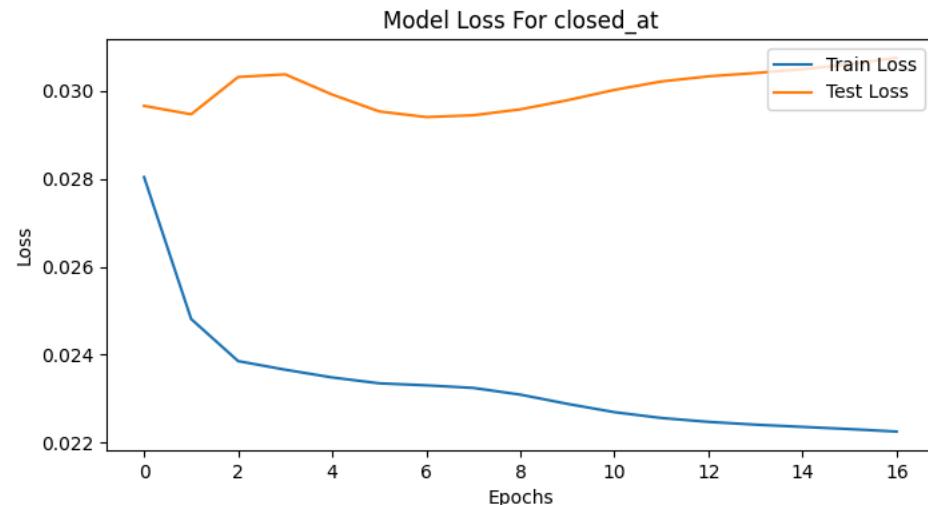
Number of forks

LangChainai-Langchain

LangChainai-Langgraph

Microsoft-Autogen

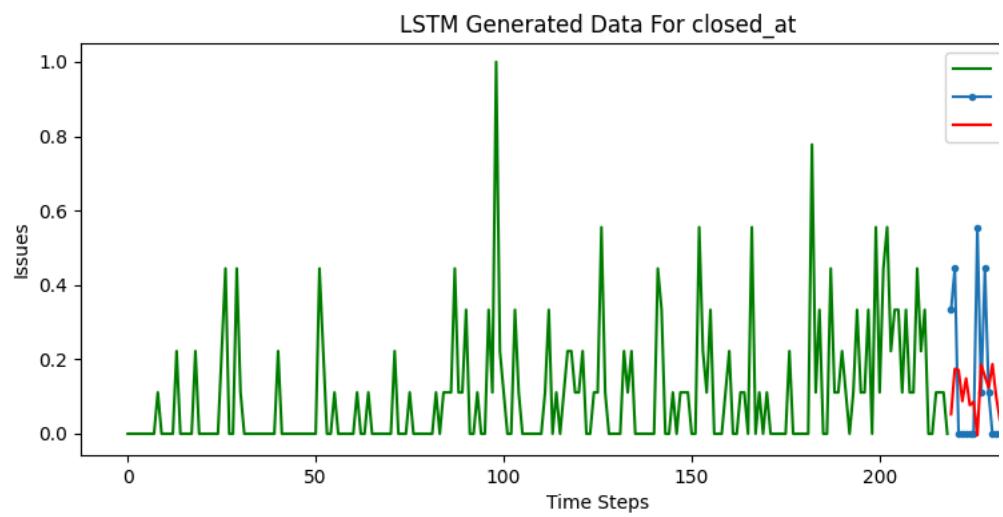
Openai-Cookbook



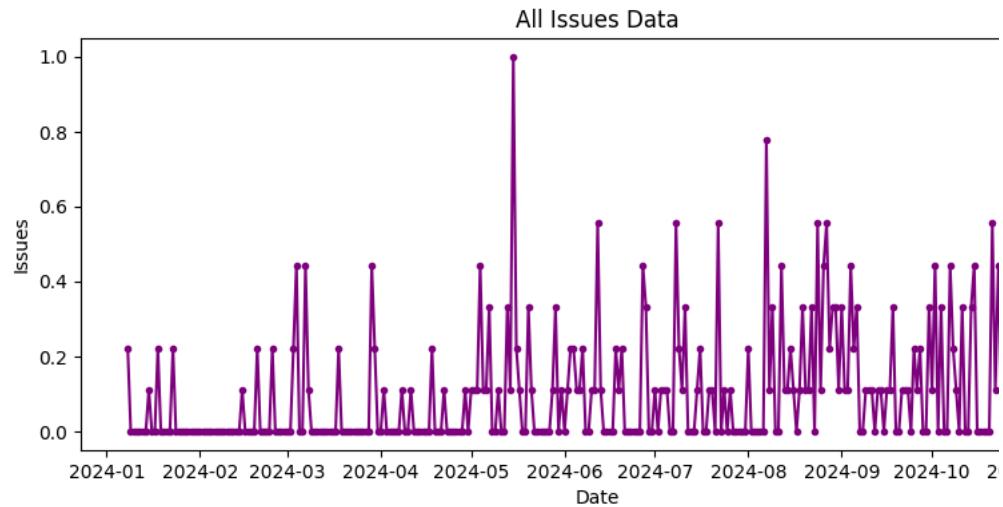
LSTM Generated Data for Closed Issues

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All Issues Data for Closed Issues



Timeseries Forecasting of Pull Requests using Tensorflow and Keras LSTM

Model Loss for Pull Requests

Number of stars

Number of forks

LangChainai-Langchain

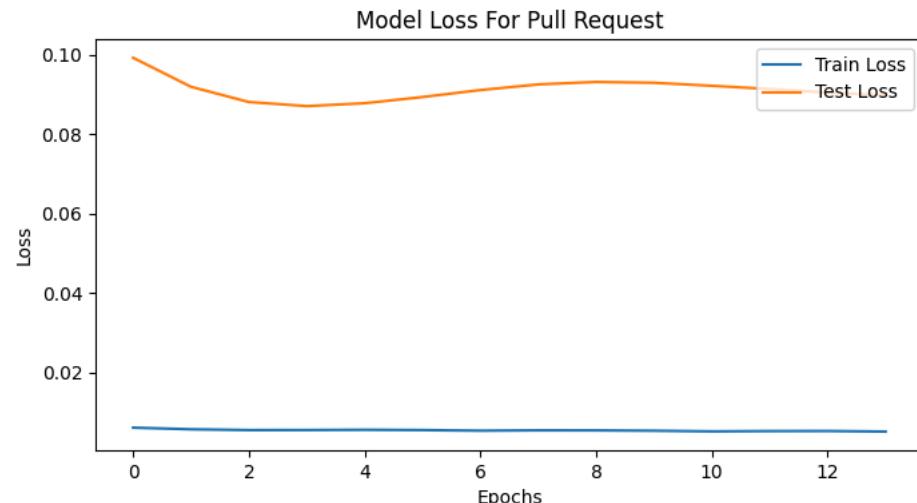
LangChainai-Langgraph

Microsoft-Autogen

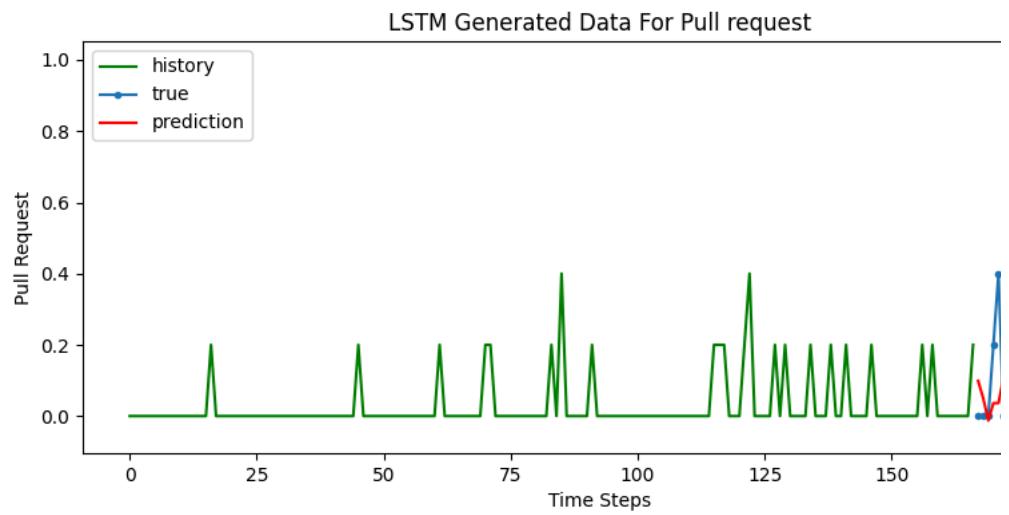
Openai-Cookbook

elasticsearch

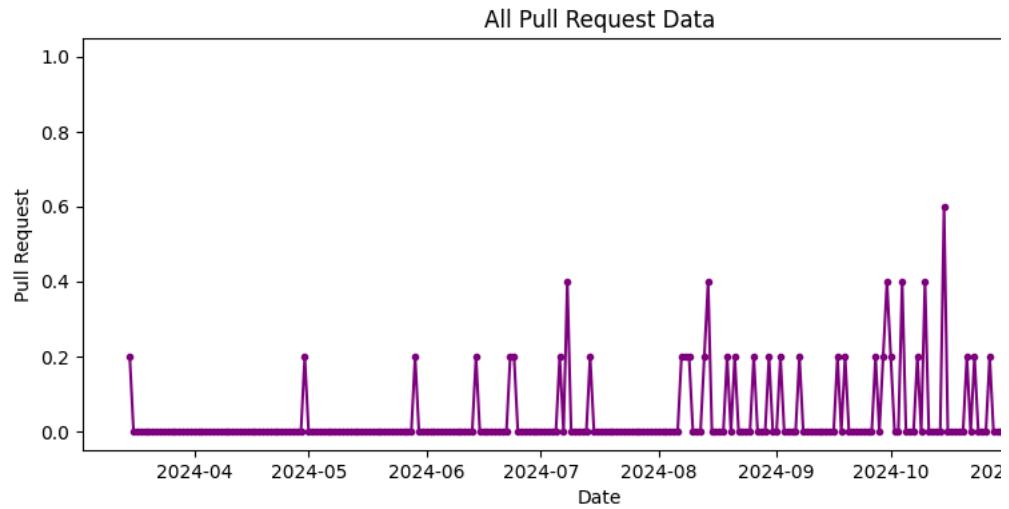
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LSTM Generated Data for Pull Requests



All Issues Data for Pull Requests



Timeseries Forecasting of Commits using Tensorflow and Keras LSTM based

Model Loss for Commits

Number of stars

Number of forks

LangChainai-Langchain

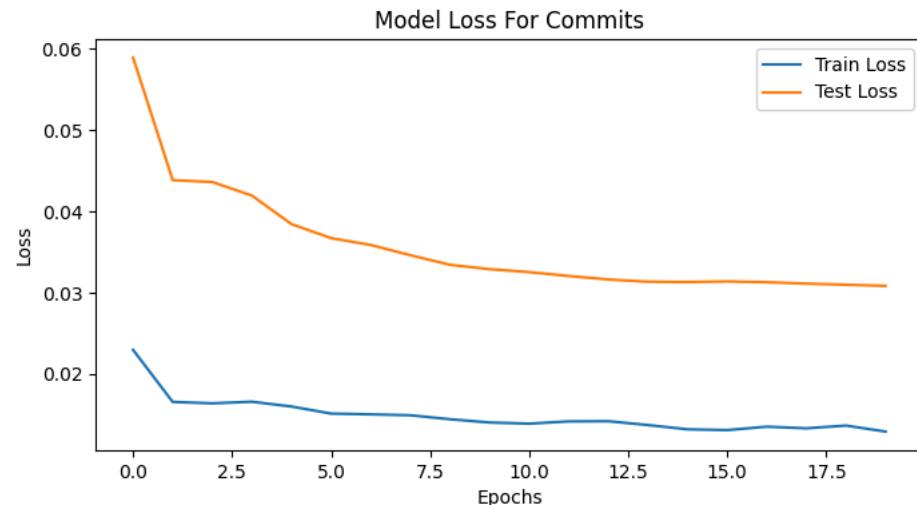
LangChainai-Langgraph

Microsoft-Autogen

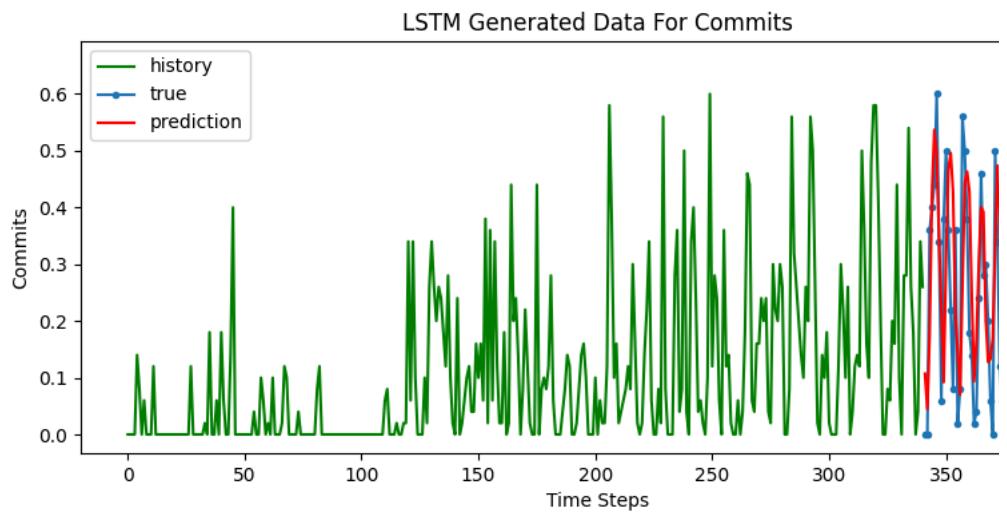
Openai-Cookbook

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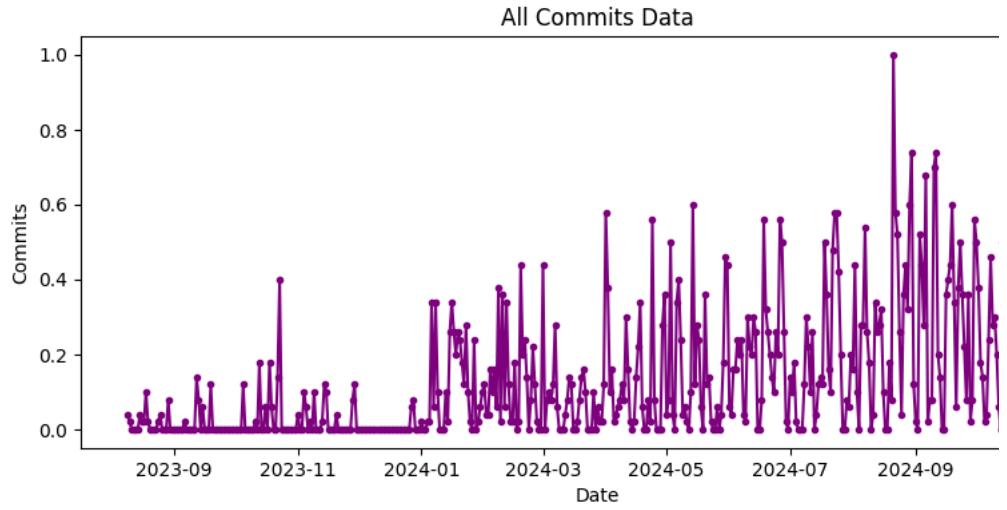
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LSTM Generated Data for Commits



All Issues Data for Commits



Timeseries Forecasting of Created Issues using Facebook/Prophet based on Forecast of Created Issues

Number of stars

Number of forks

LangChainai-Langchain

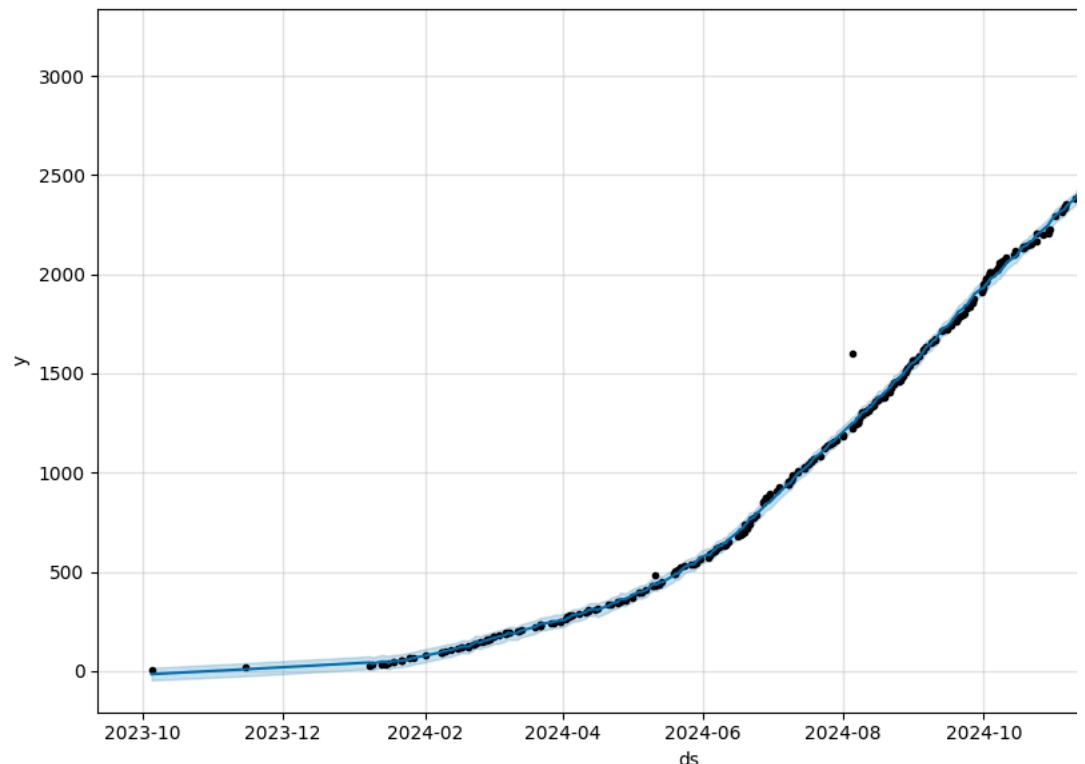
LangChainai-Langgraph

Microsoft-Autogen

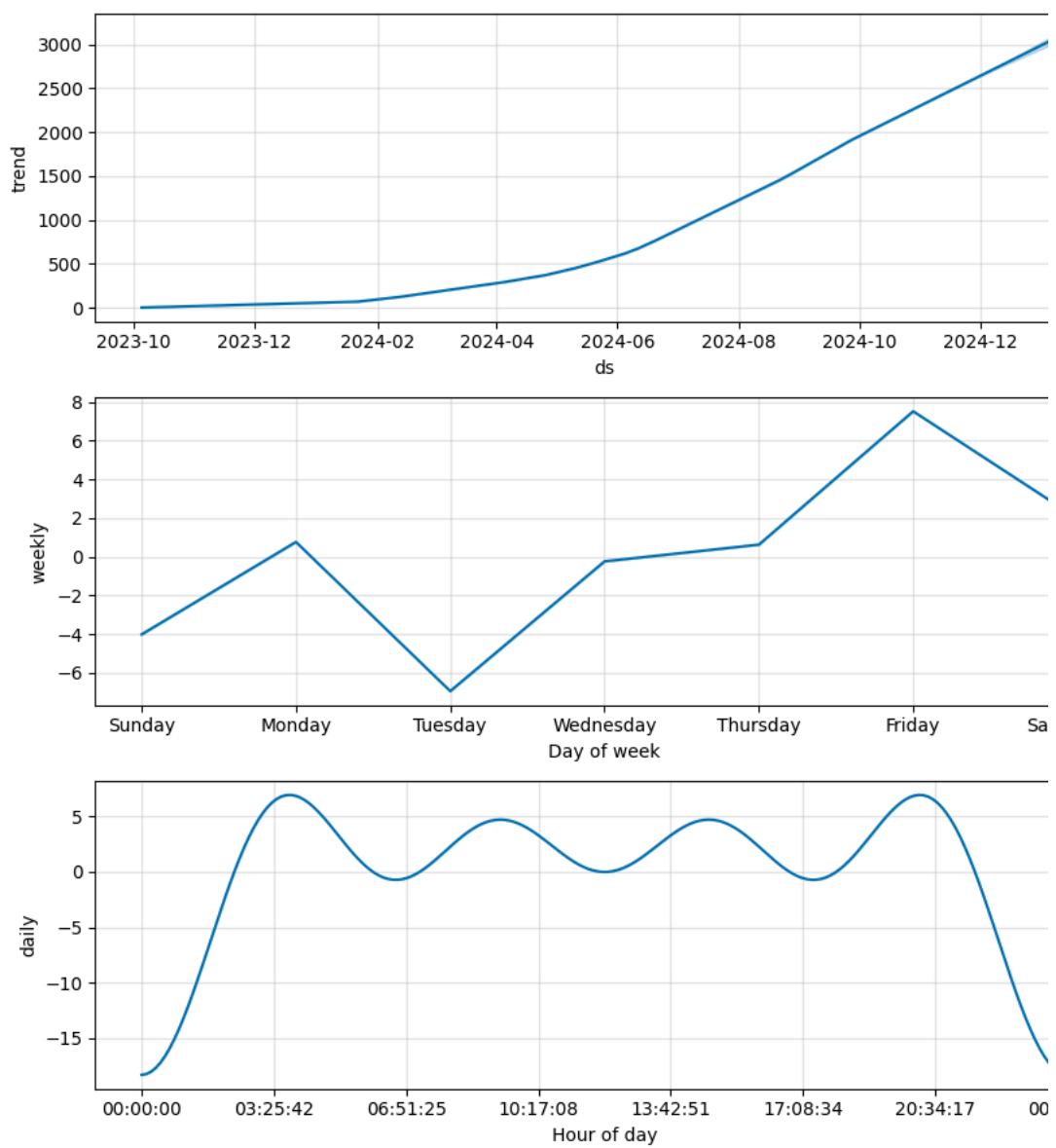
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Forecast Components of Created Issues



Timeseries Forecasting of Closed Issues using Facebook/Prophet based on |

Forecast of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

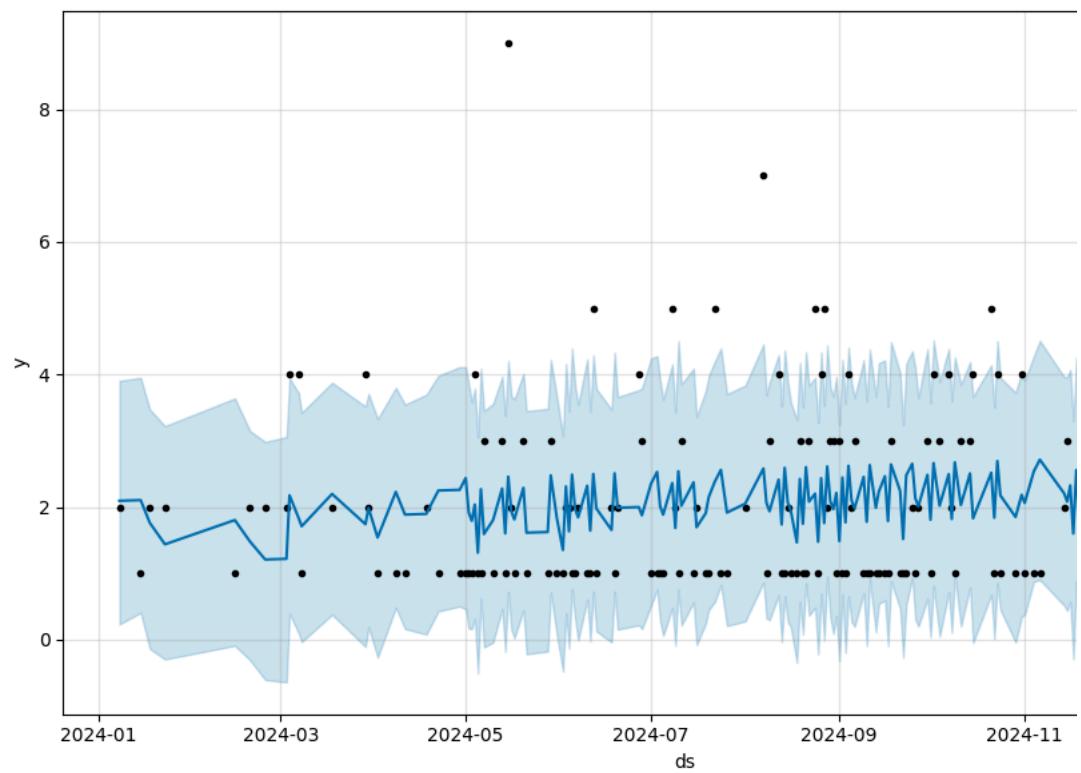
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Microsoft-Autogen

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Forecast Components of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

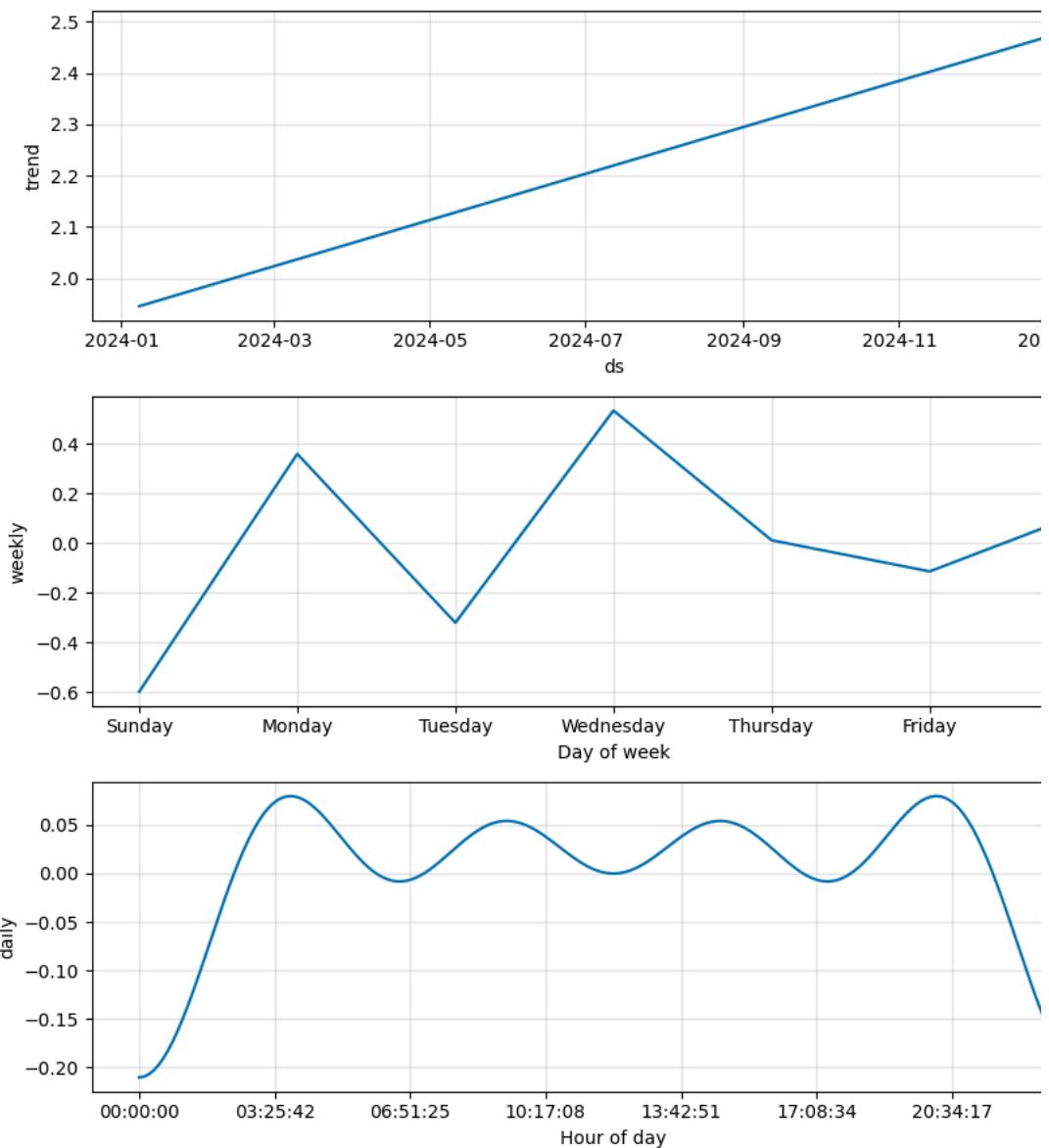
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Timeseries Forecasting of Pull Request using Facebook/Prophet based on past history
Forecast of Pull Request

Number of stars

Number of forks

LangChainai-Langchain

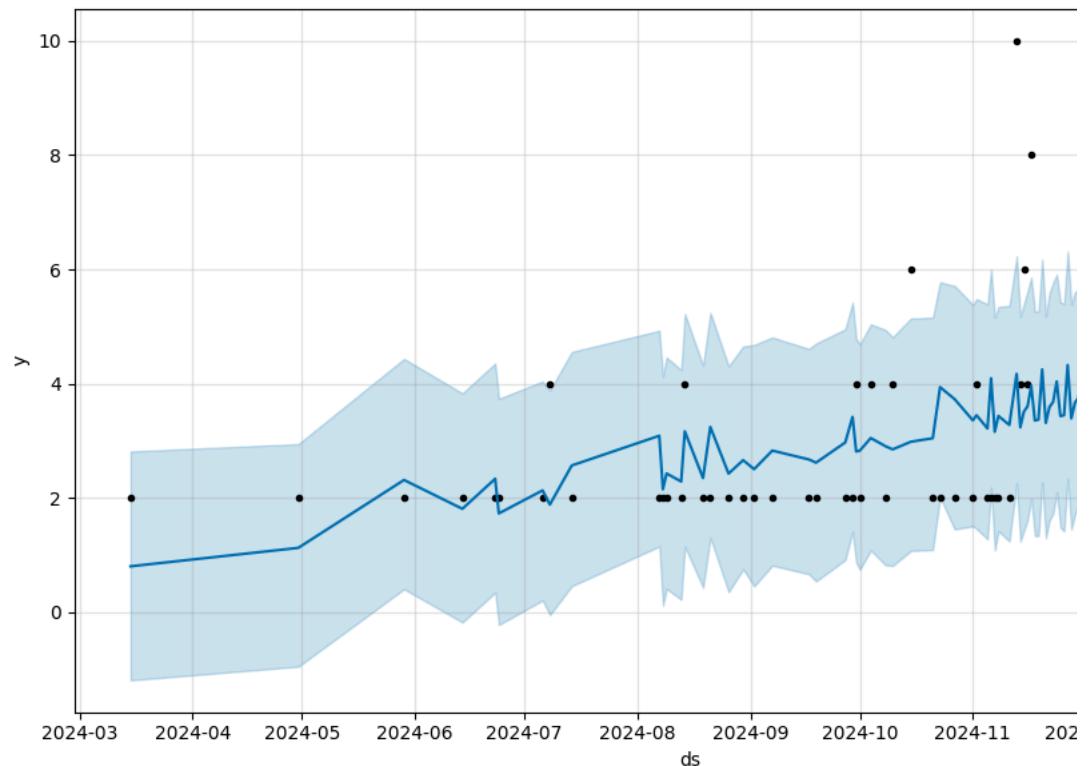
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Microsoft-Autogen

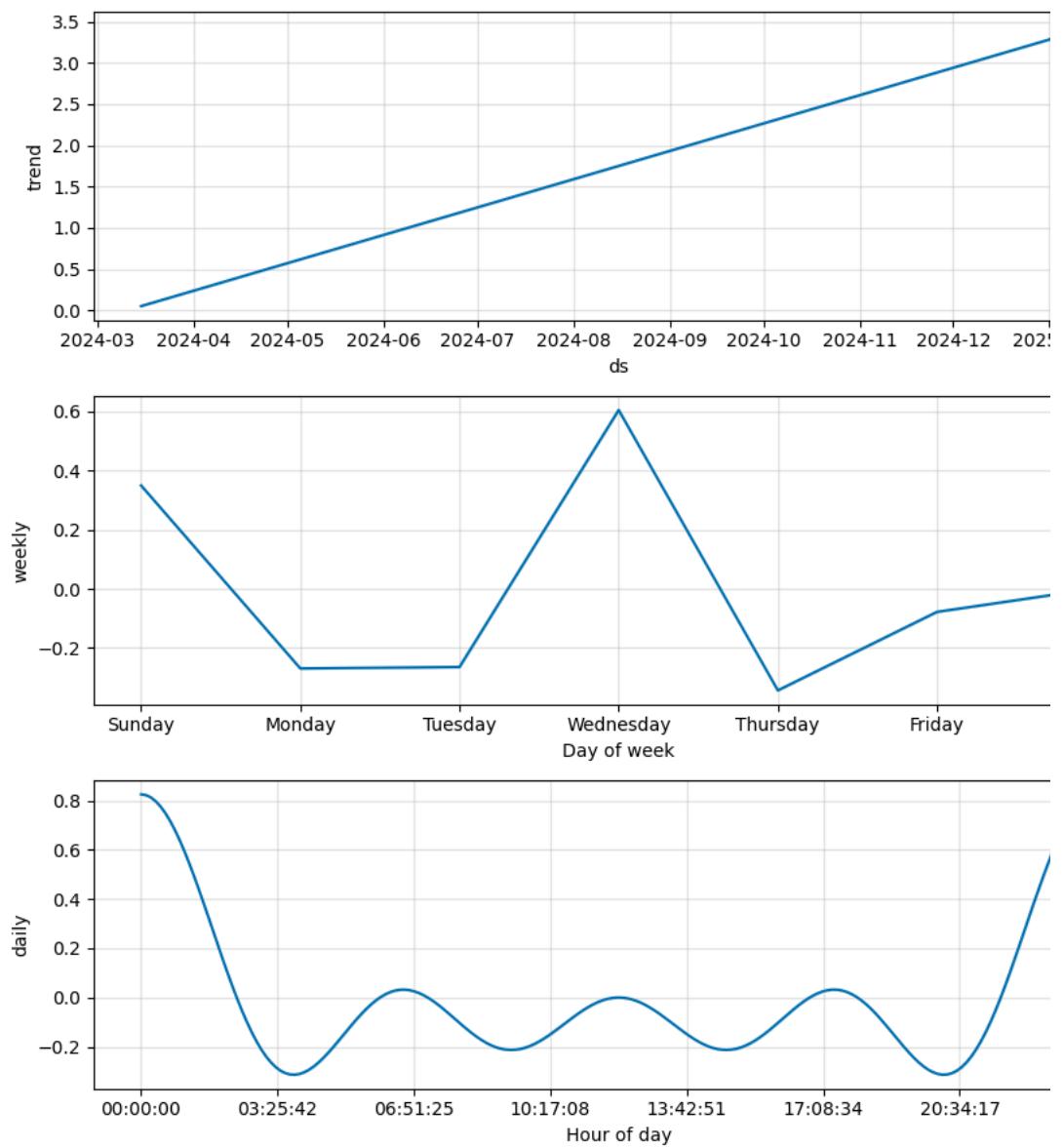
Openai-Cookbook

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Forecast Components of Pull Request



Timeseries Forecasting of Commits using Facebook/Prophet based on past r

Forecast of Commits

Number of stars

Number of forks

LangChainai-Langchain

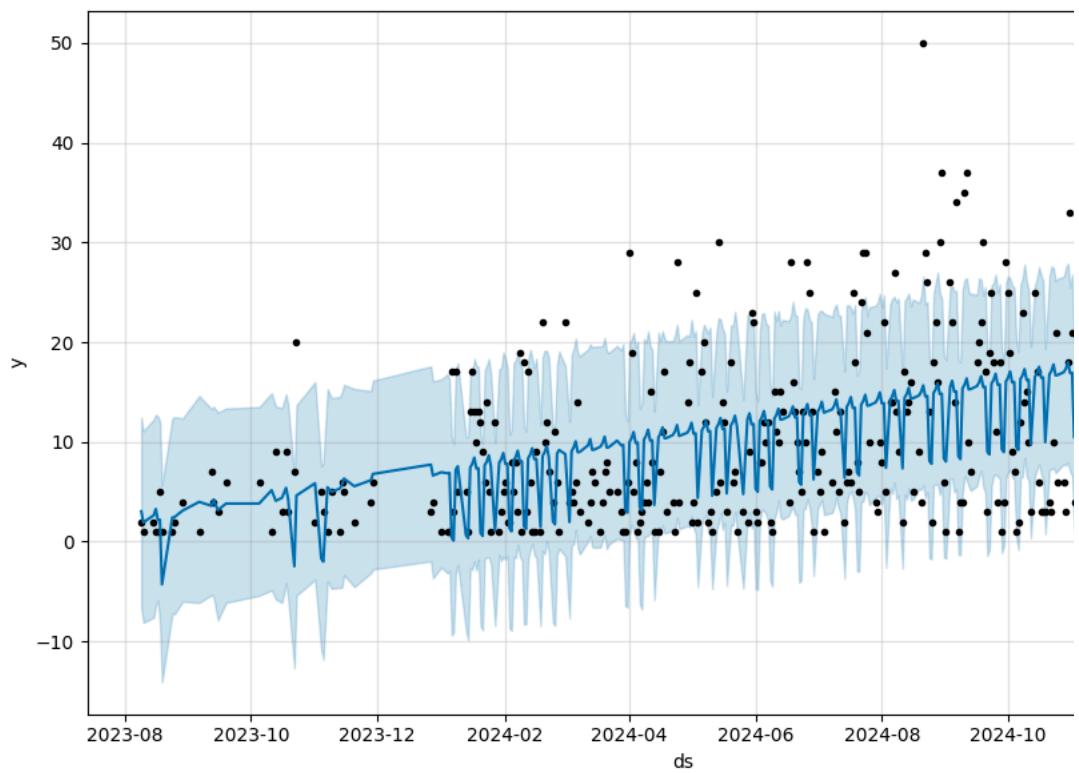
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

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Forecast Components of Commits

Number of stars

Number of forks

LangChainai-Langchain

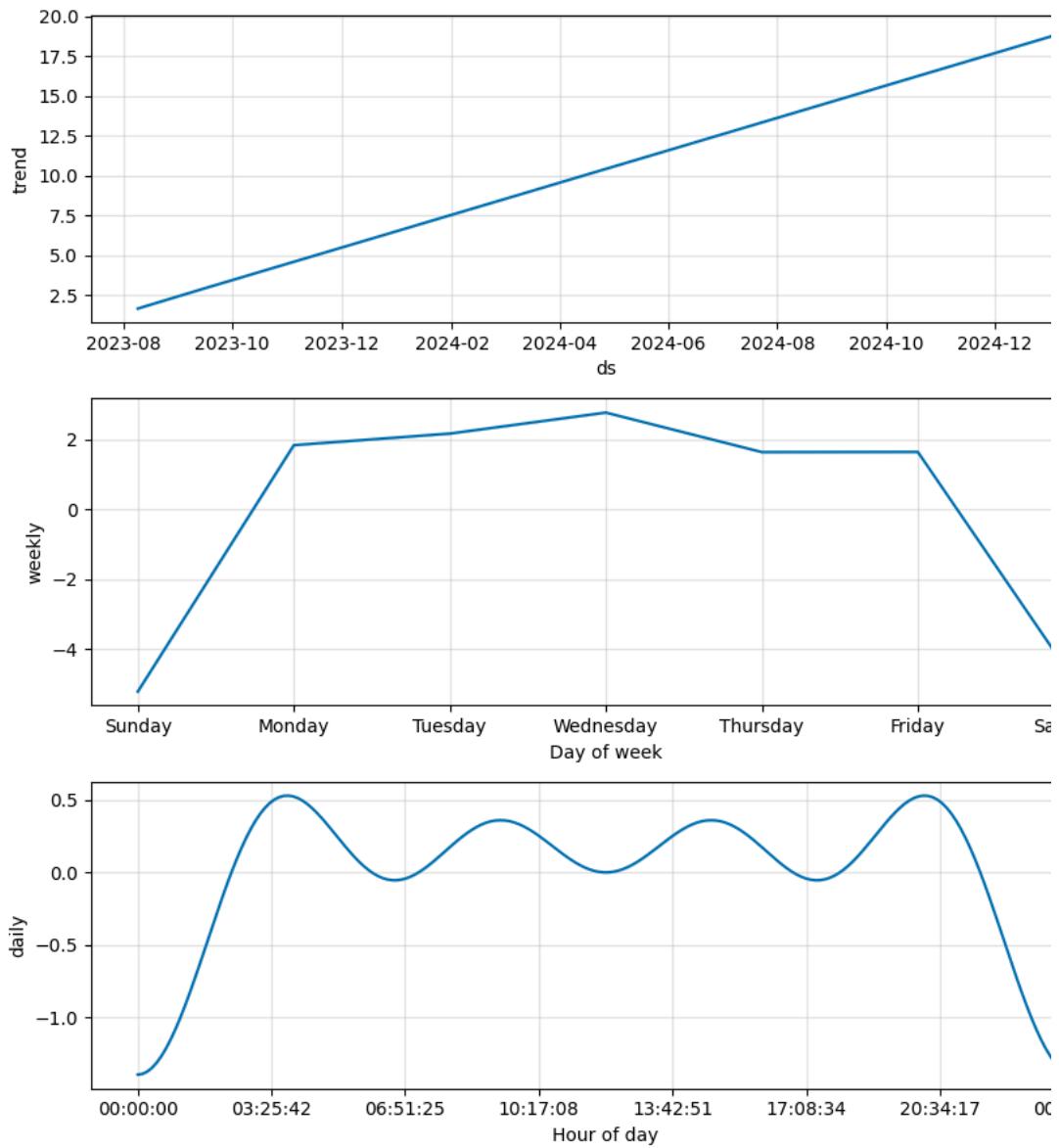
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

Pymilvus



Timeseries Forecasting of Created Issues using StatsModel based on past metrics

Observation Graph of Created Issues

Number of stars

Number of forks

LangChainai-Langchain

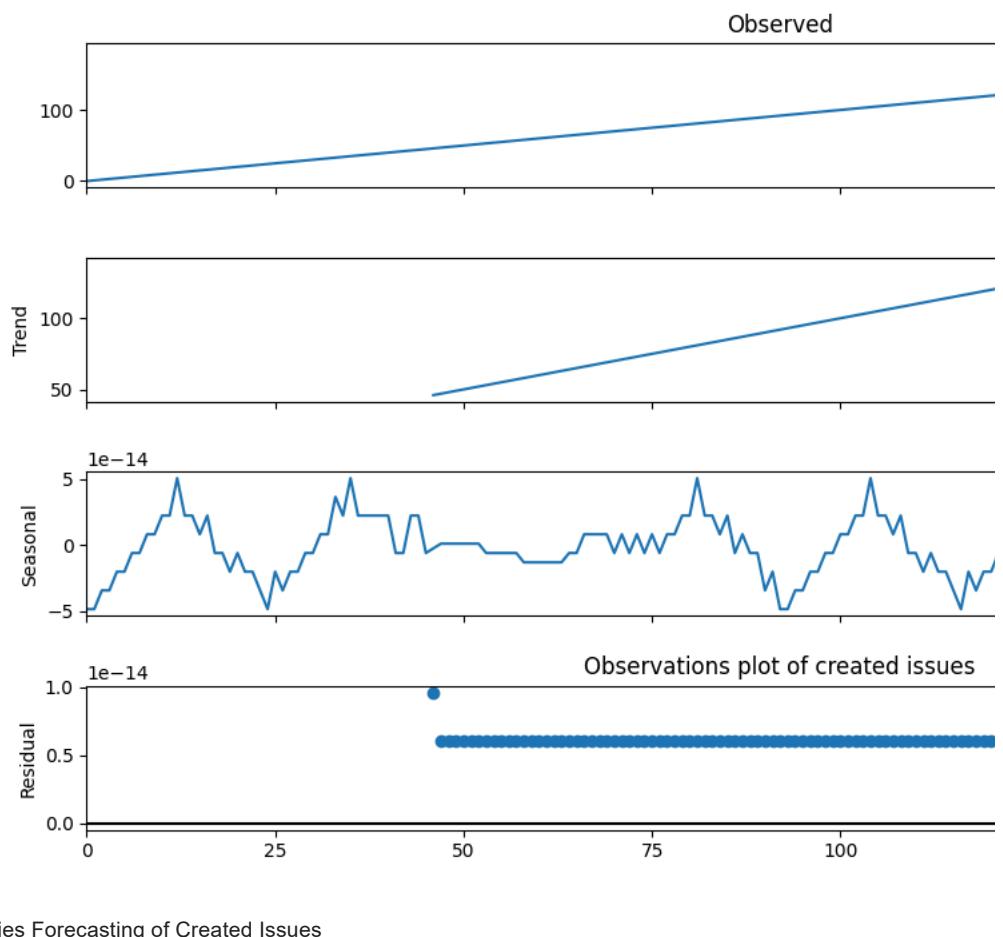
LangChainai-Langgraph

Microsoft-Autogen

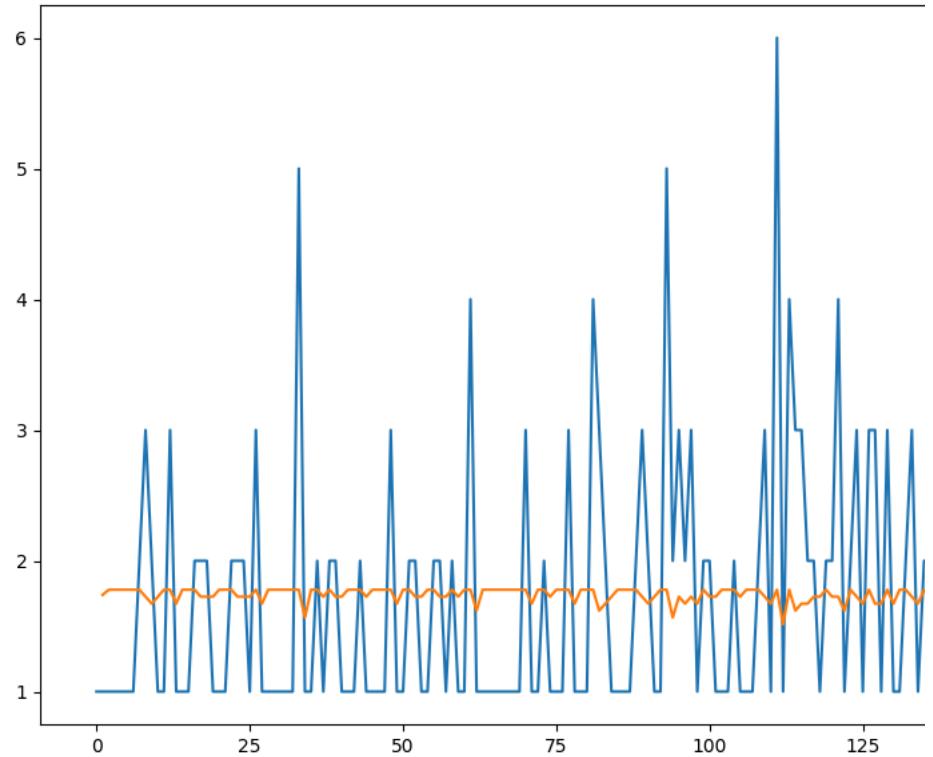
Openai-Cookbook

elasticsearch

Pymilvus



Timeseries forecasting of created issues



Timeseries Forecasting of Closed Issues using StatsModel based on past metrics

Observation Graph of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

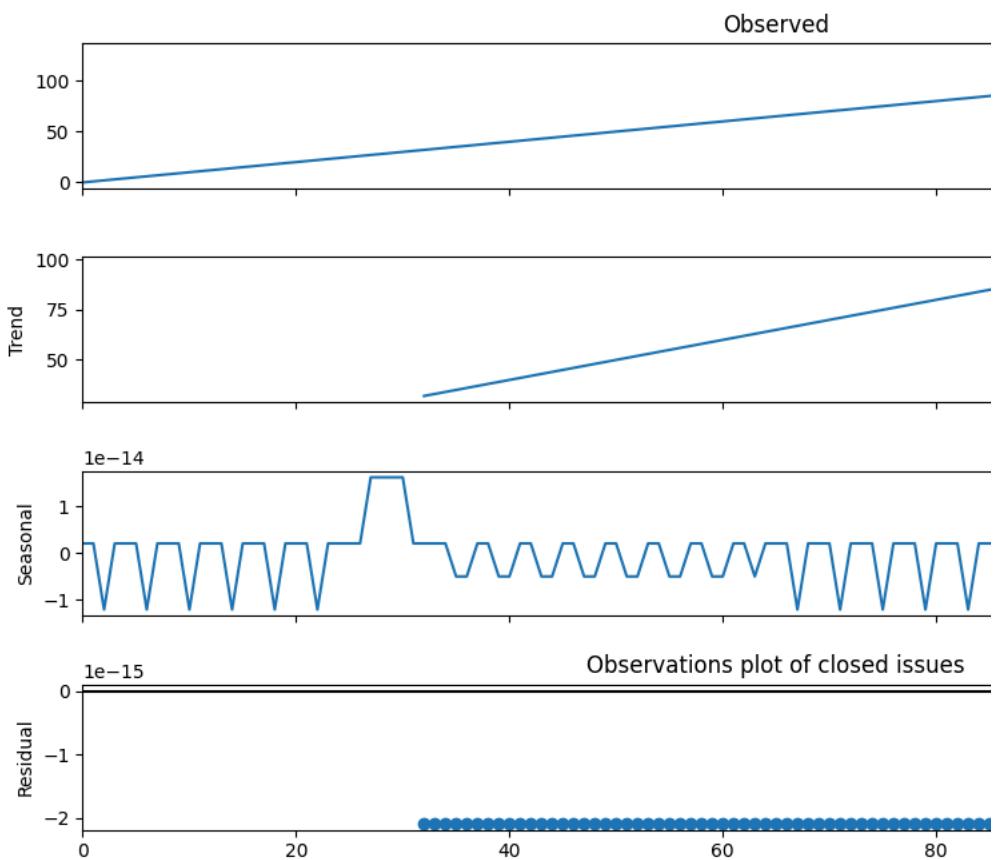
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

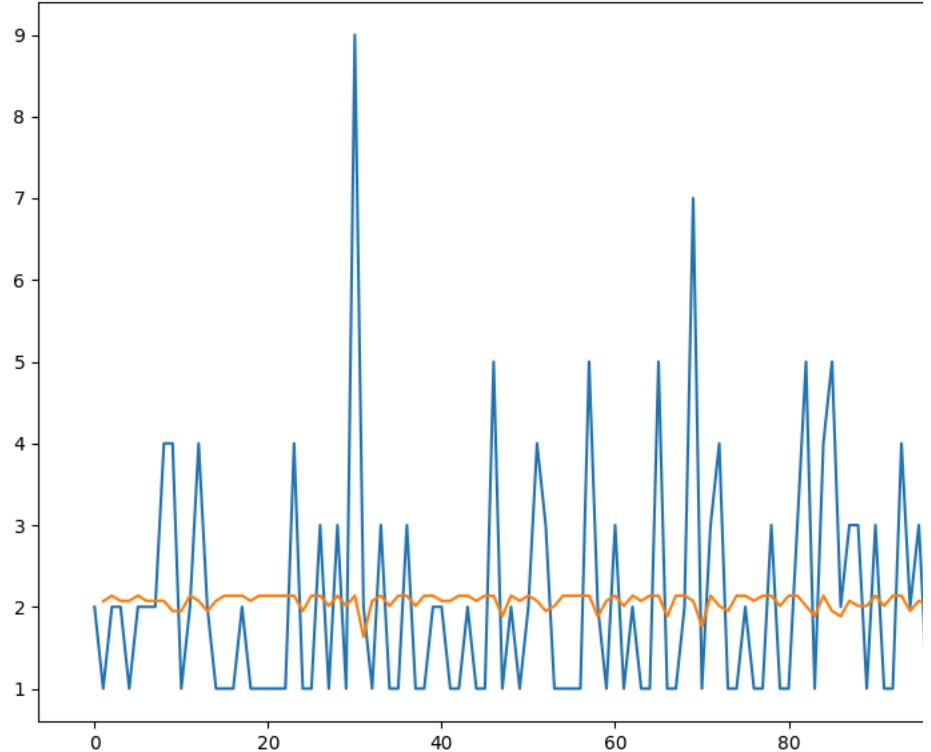
elasticsearch

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Time Series Forecasting of Closed Issues

Timeseries forecasting of closed issues



Timeseries Forecasting of Pull Request Issues using StatsModel based on pa

Observation Graph of Pull Request Issues

Number of stars

Number of forks

LangChainai-Langchain

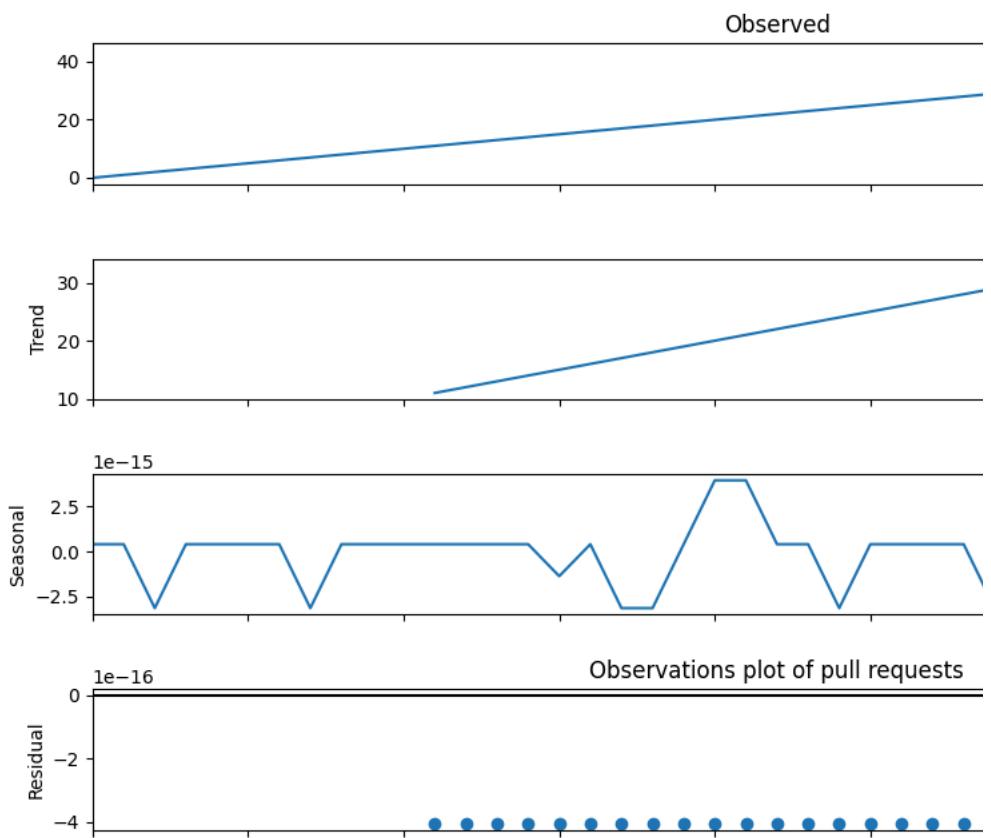
LangChainai-Langgraph

Microsoft-Autogen

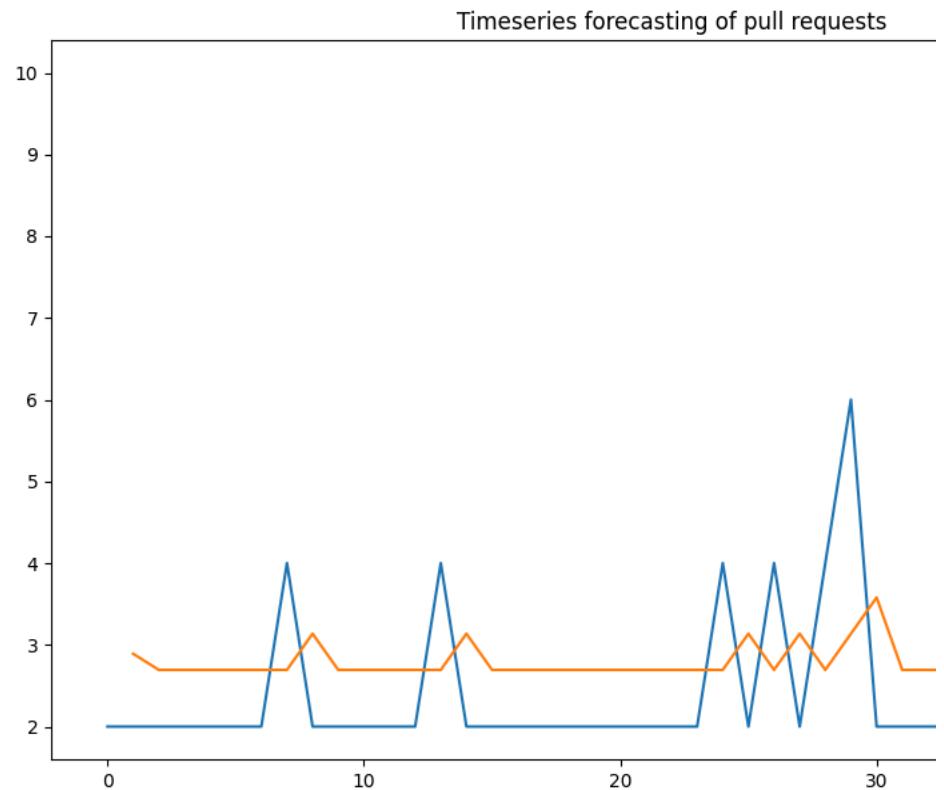
Openai-Cookbook

elasticsearch

Pymilvus



Time Series Forecasting of Pull Request Issues



Timeseries Forecasting of Commits Issues using StatsModel based on past r
Observation Graph of Commits Issues

Number of stars

Number of forks

LangChainai-Langchain

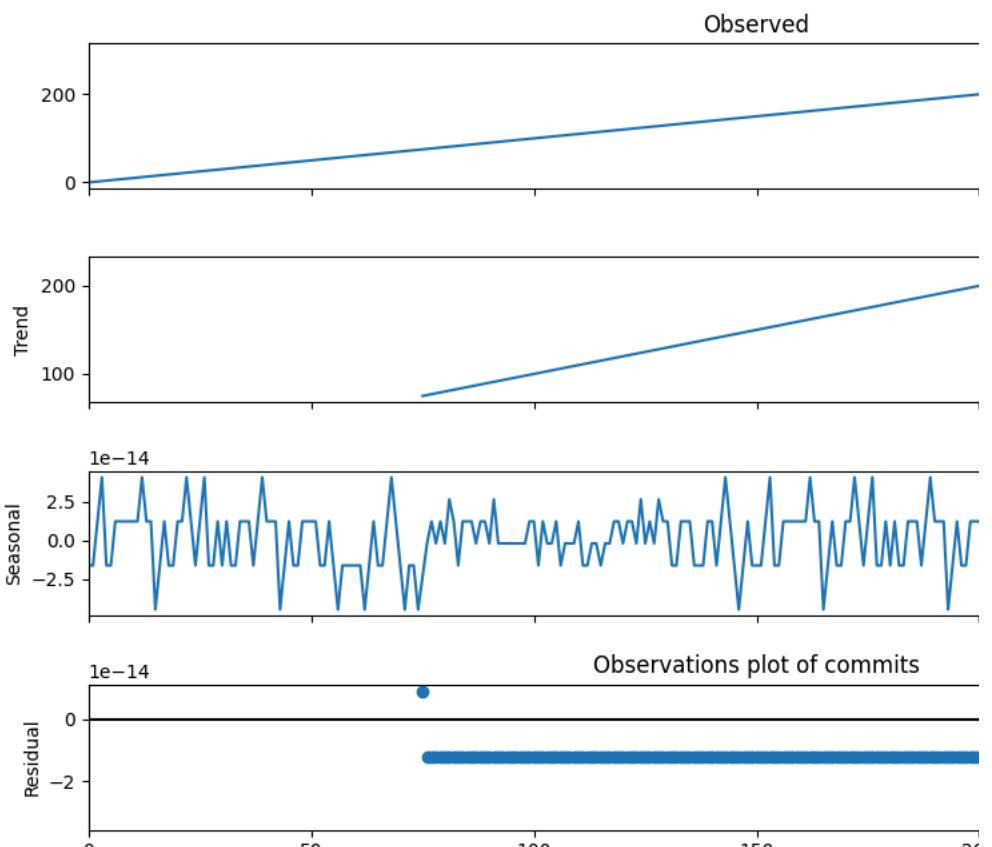
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

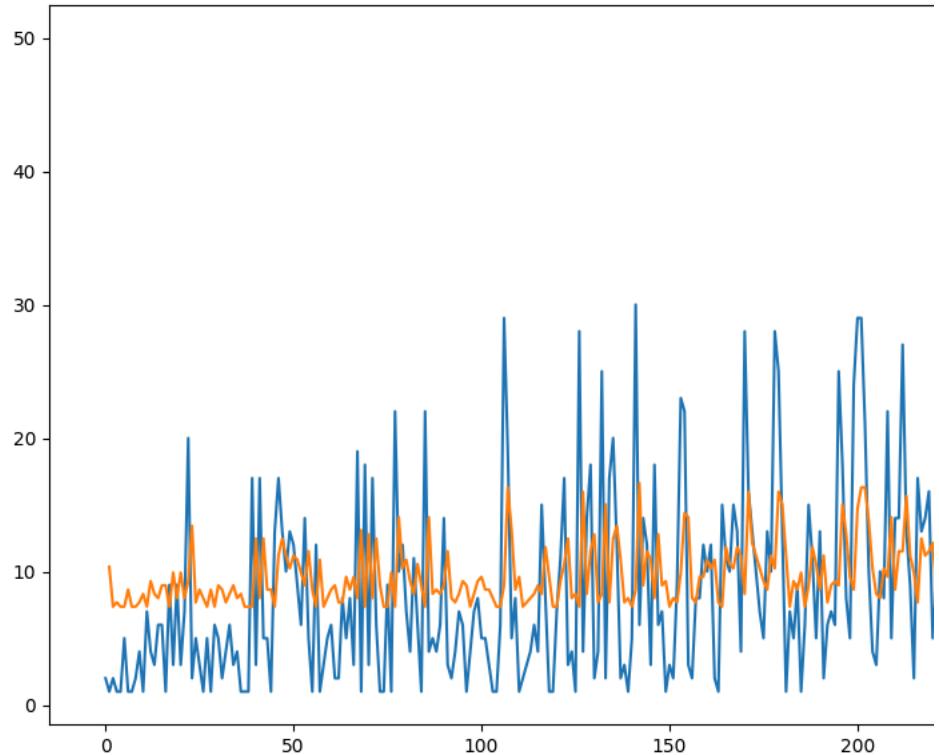
elasticsearch

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Time Series Forecasting of Commits Issues

Timeseries forecasting of commits

**Timeseries Forecasting of Releases using Tensorflow and Keras LSTM**

Model Loss for Releases

Number of stars

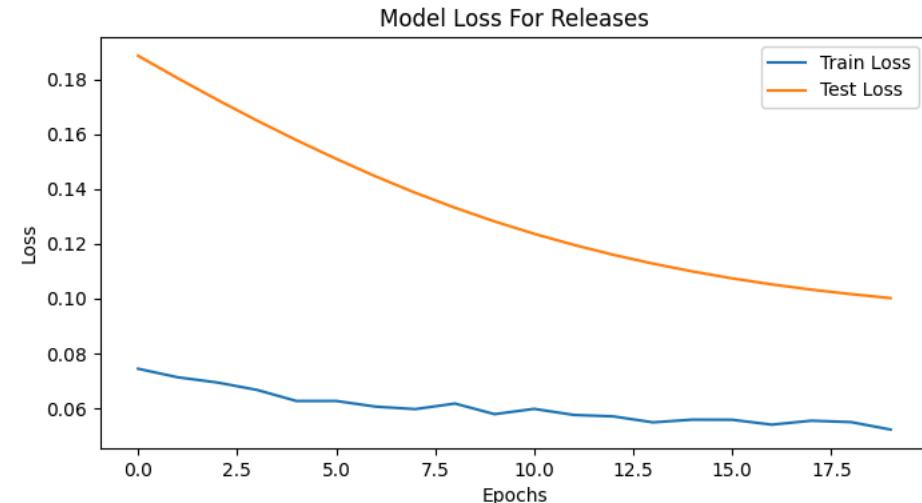
Number of forks

LangChainai-Langchain

LangChainai-Langgraph

Microsoft-Autogen

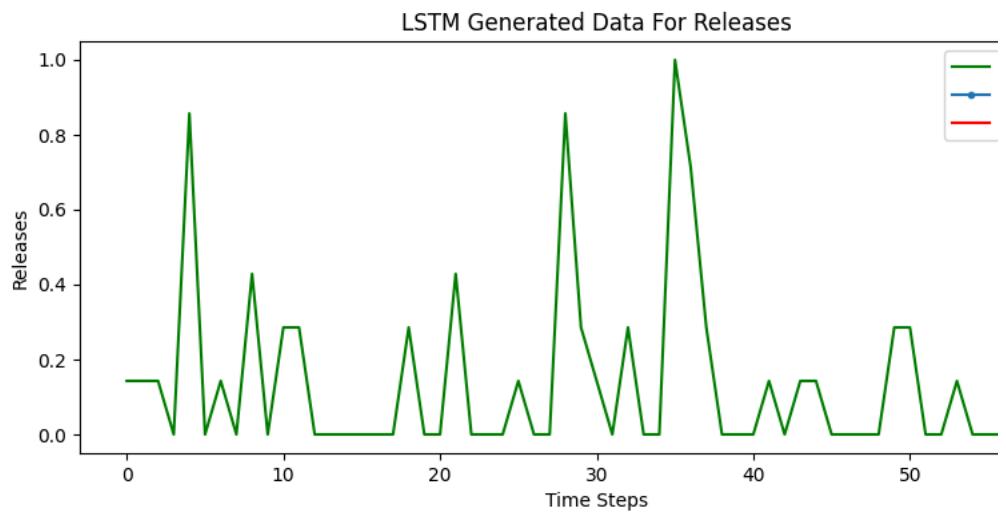
Openai-Cookbook



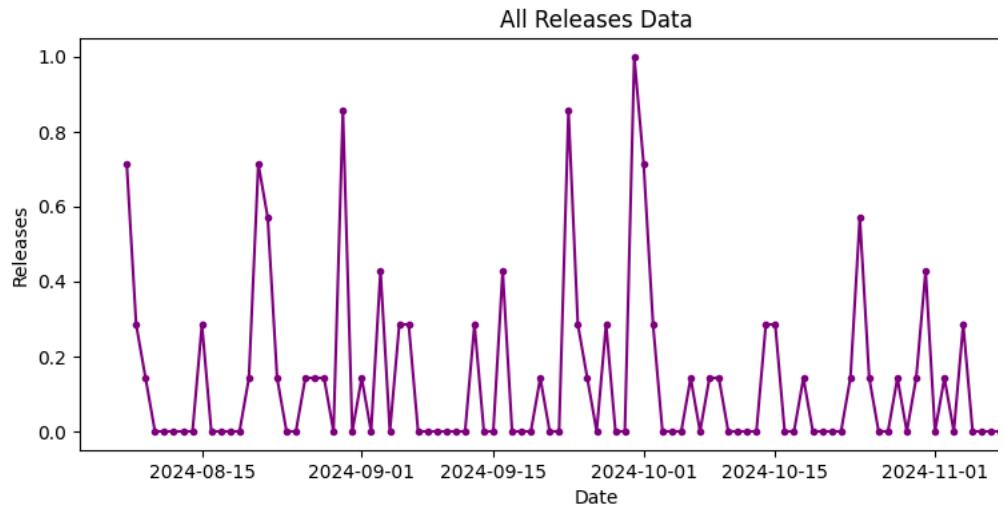
elasticsearch

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LSTM Generated Data for Releases



All Issues Data for Releases

**Timeseries Forecasting of Release using StatsModel**

Observation Graph of Release Issues

Number of stars

Number of forks

LangChainai-Langchain

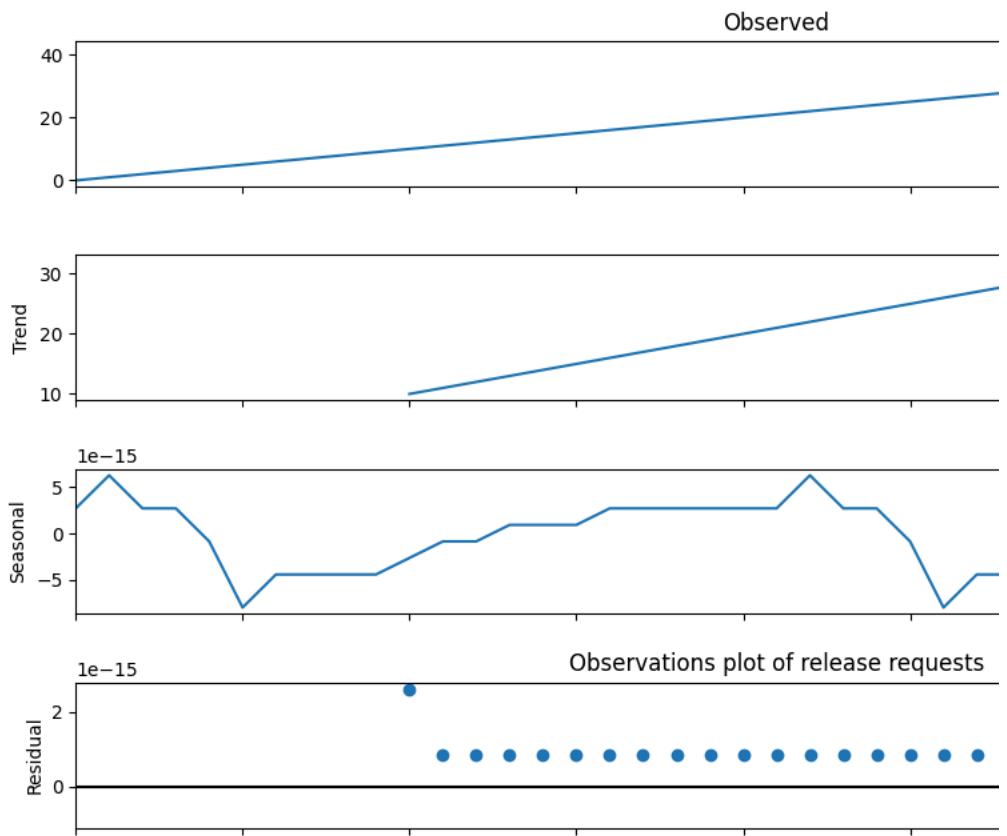
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Microsoft-Autogen

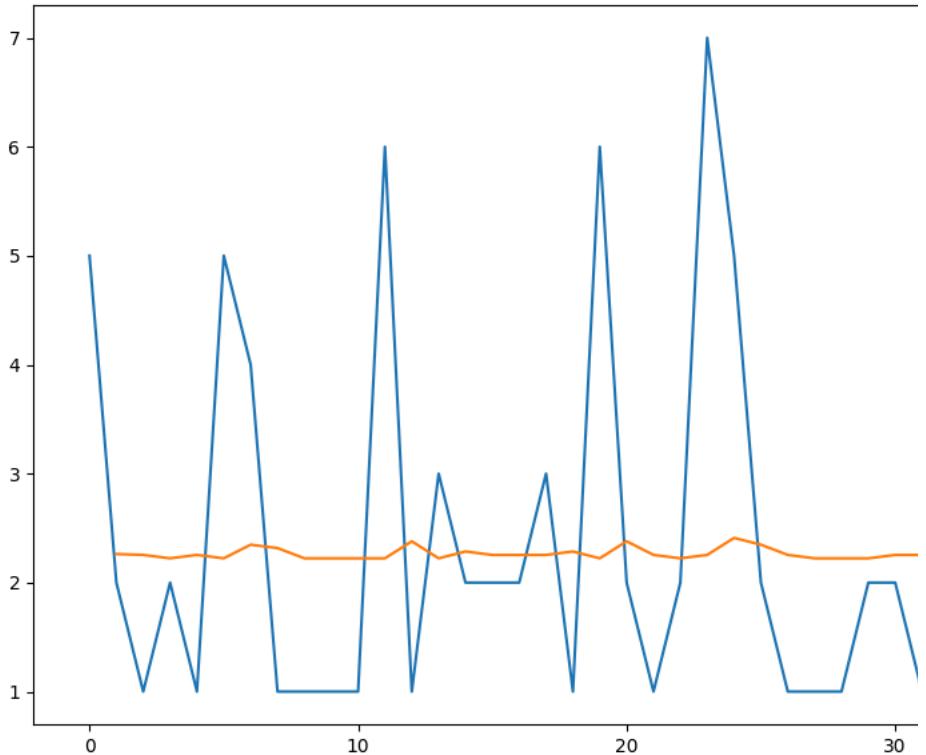
Openai-Cookbook

elasticsearch

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Timeseries forecasting of release requests

**Timeseries Forecasting of Releases using Facebook/Prophet**

Forecast of Releases

Number of stars

Number of forks

LangChainai-Langchain

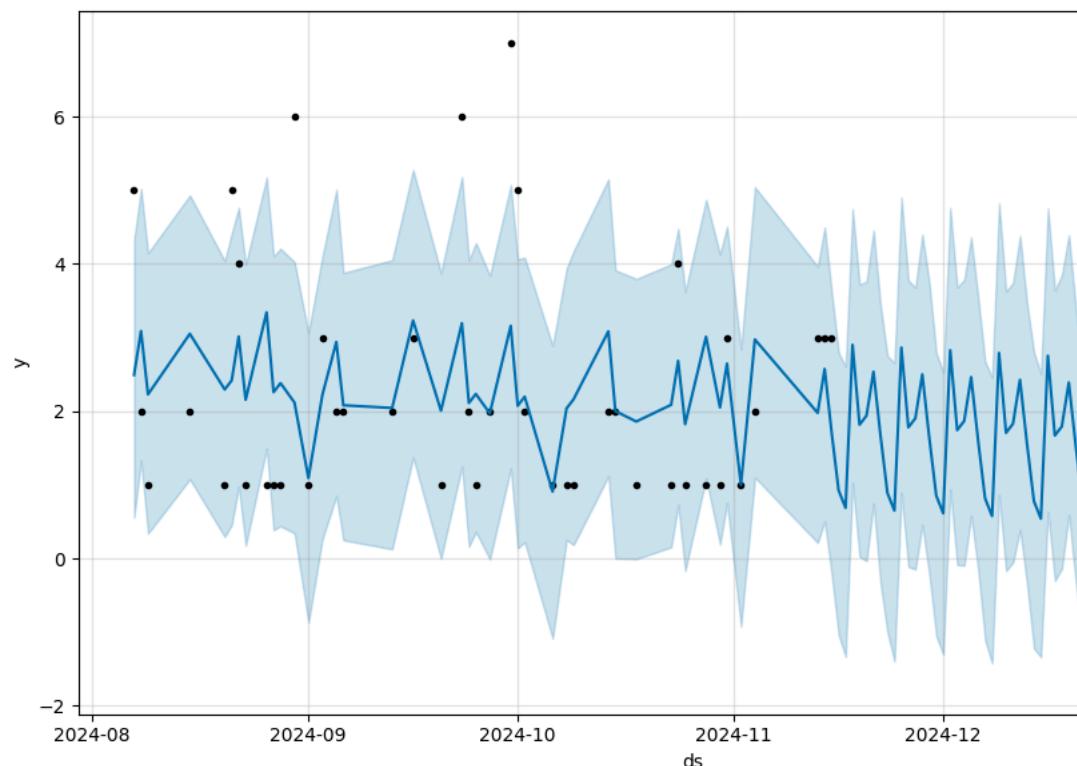
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Microsoft-Autogen

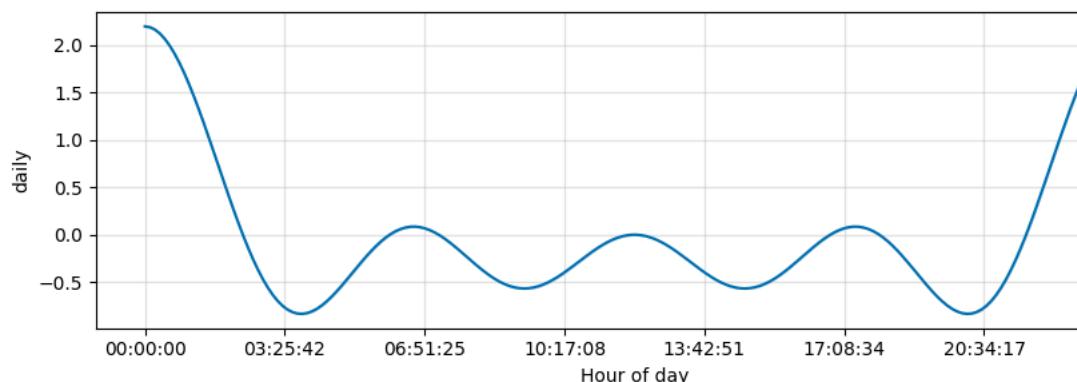
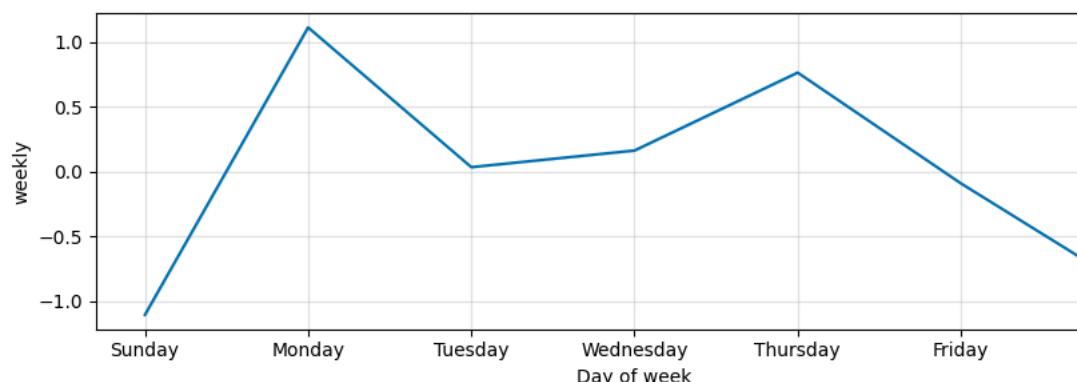
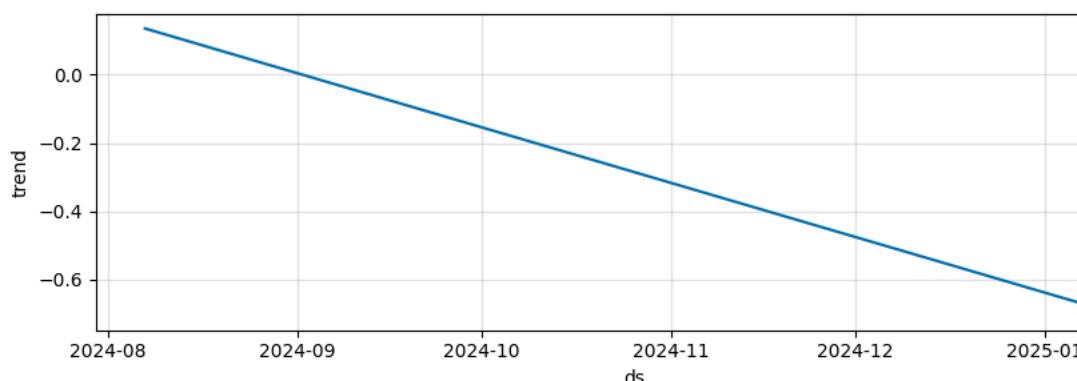
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elasticsearch

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Forecast Components of Releases



Timeseries Forecasting of Contributors using Tensorflow and Keras LSTM

Model Loss for Contributors

Number of stars

Number of forks

LangChainai-Langchain

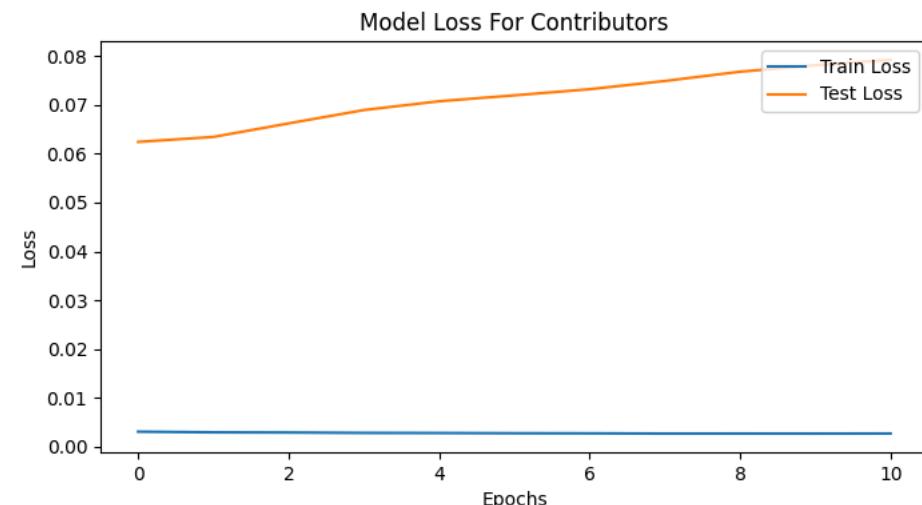
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Microsoft-Autogen

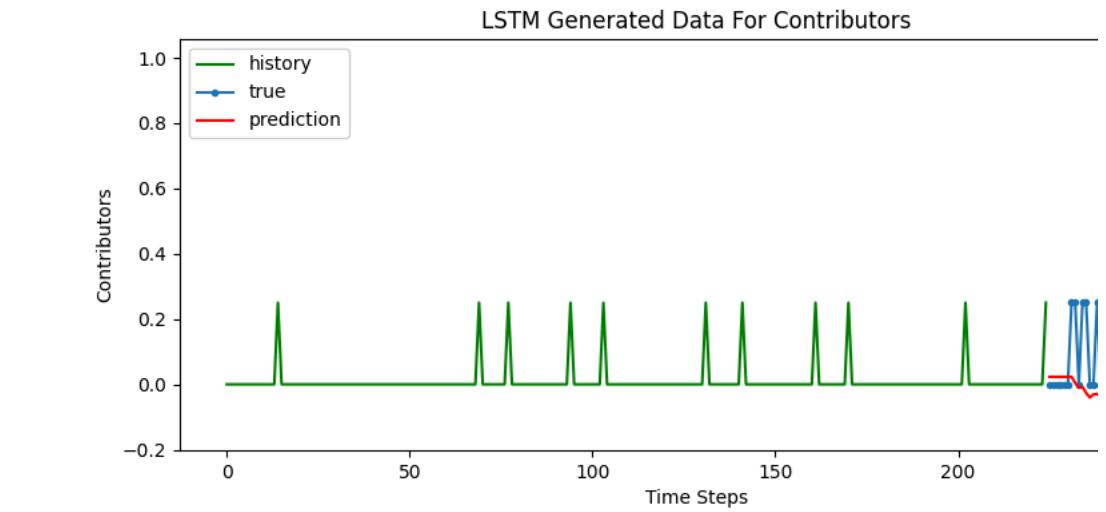
Openai-Cookbook

elasticsearch

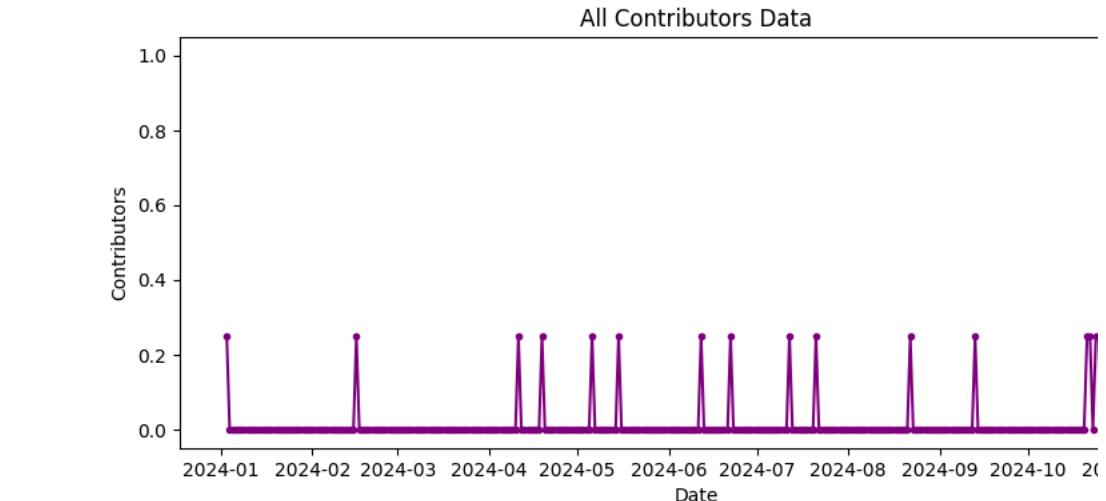
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LSTM Generated Data for Contributors



All Issues Data for Contributors



Timeseries Forecasting of Contributors using StatsModel

Observation Graph of Contributors

Number of stars

Number of forks

LangChainai-Langchain

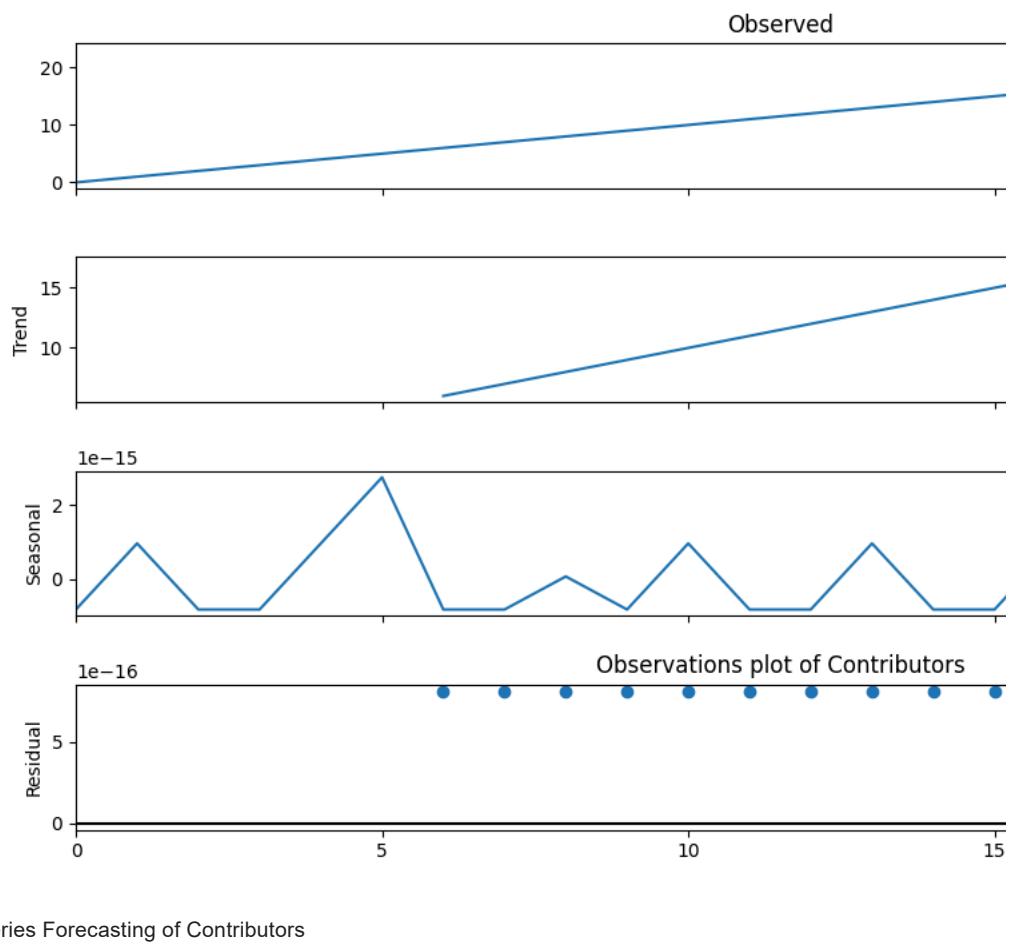
LangChainai-Langgraph

Microsoft-Autogen

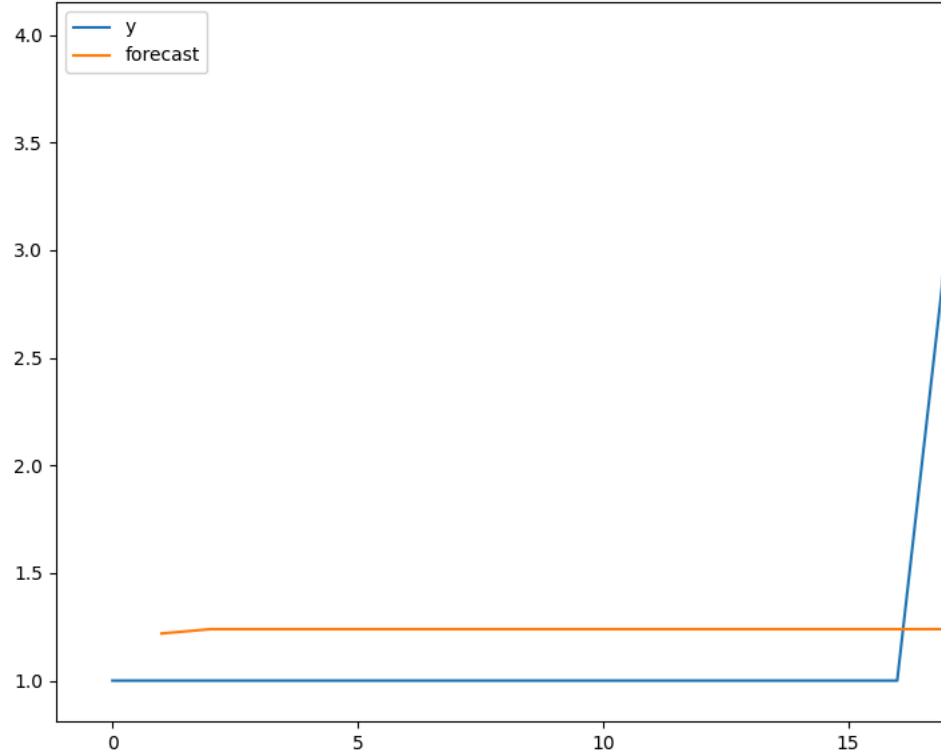
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Timeseries forecasting of Contributors

**Timeseries Forecasting of Contributors using Facebook/Prophet**

Forecast of Contributors

Number of stars

Number of forks

LangChainai-Langchain

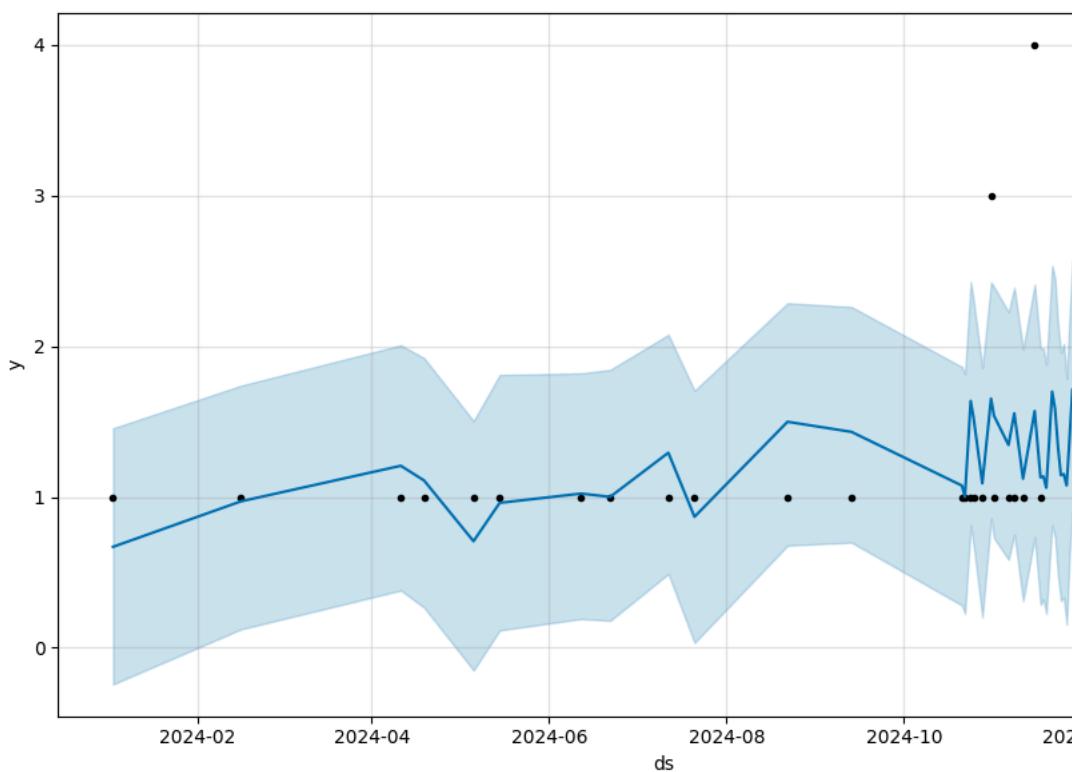
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Microsoft-Autogen

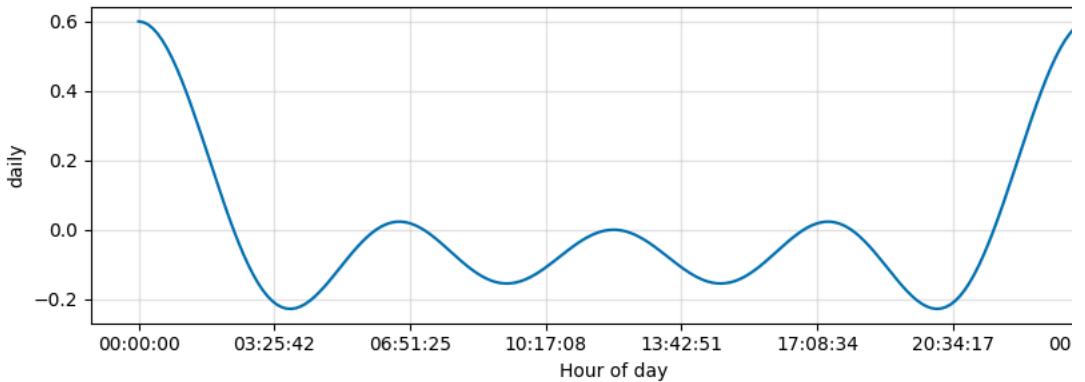
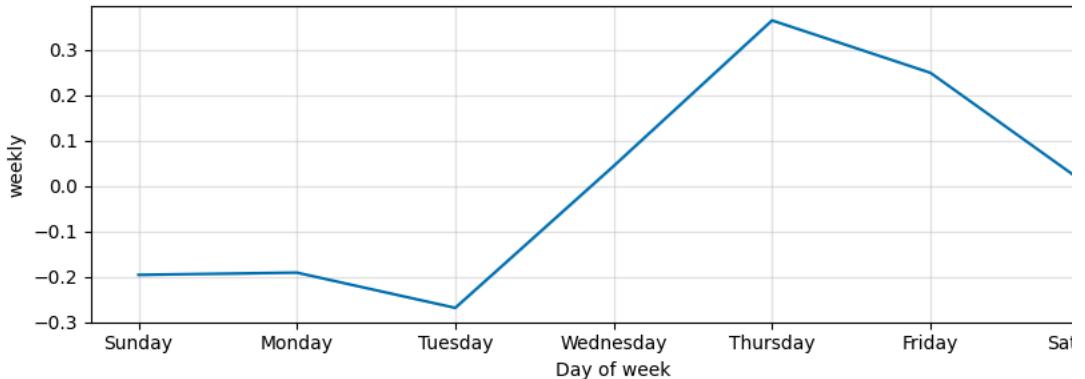
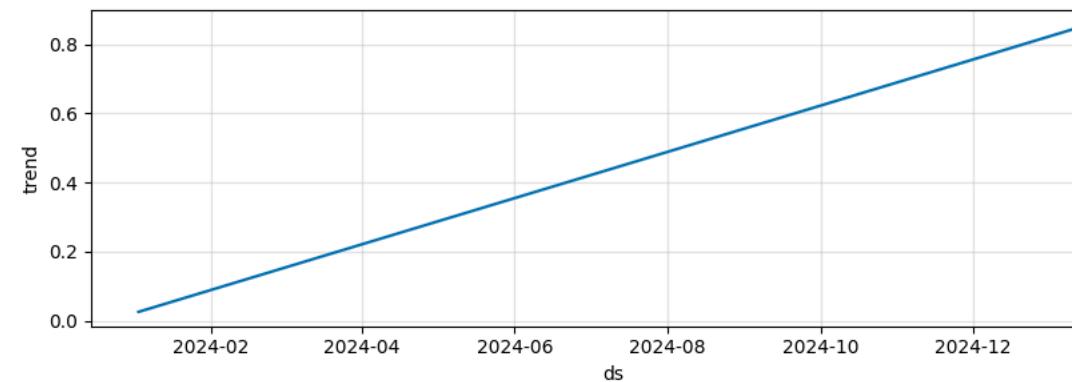
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Forecast Components of Contributors



Timeseries Forecasting of Branches using Tensorflow and Keras LSTM

Model Loss for Branches

Number of stars

Number of forks

LangChainai-Langchain

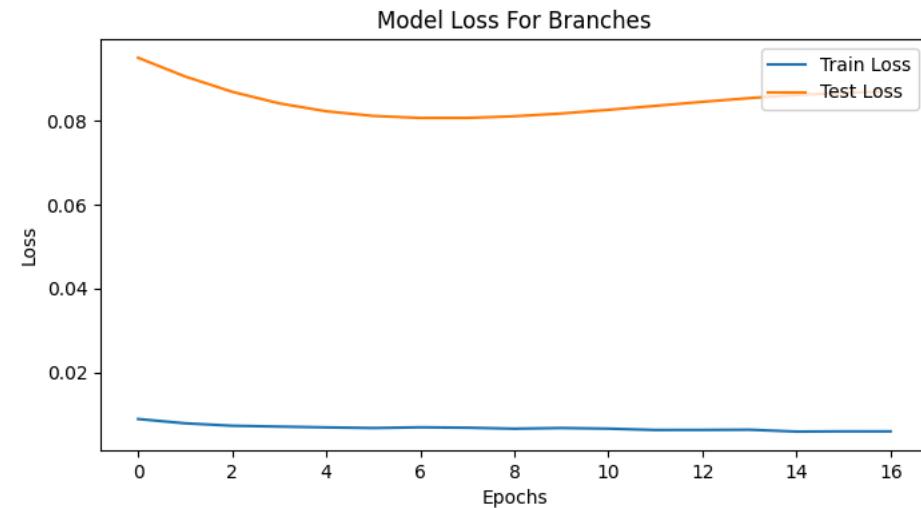
LangChainai-Langgraph

Microsoft-Autogen

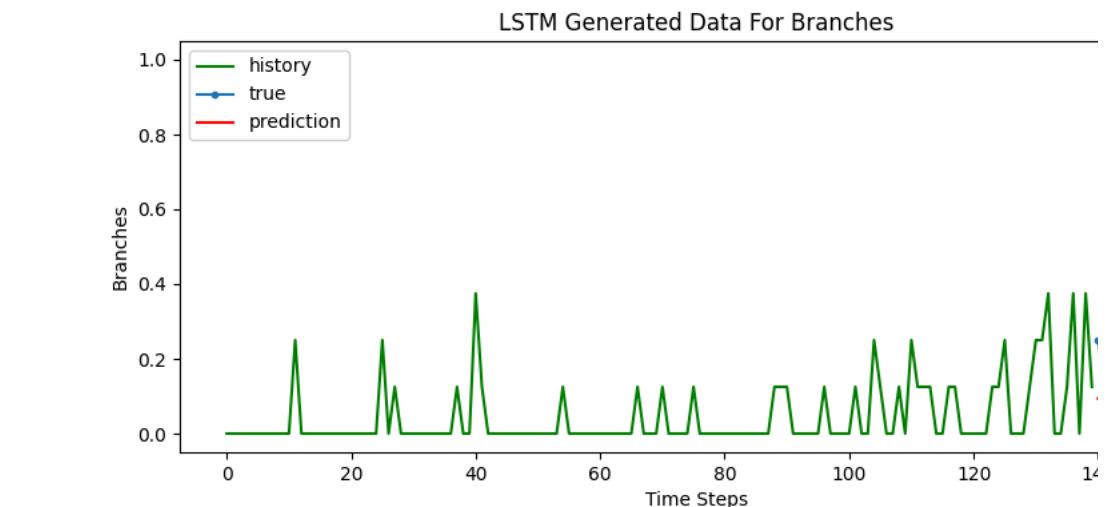
Openai-Cookbook

elasticsearch

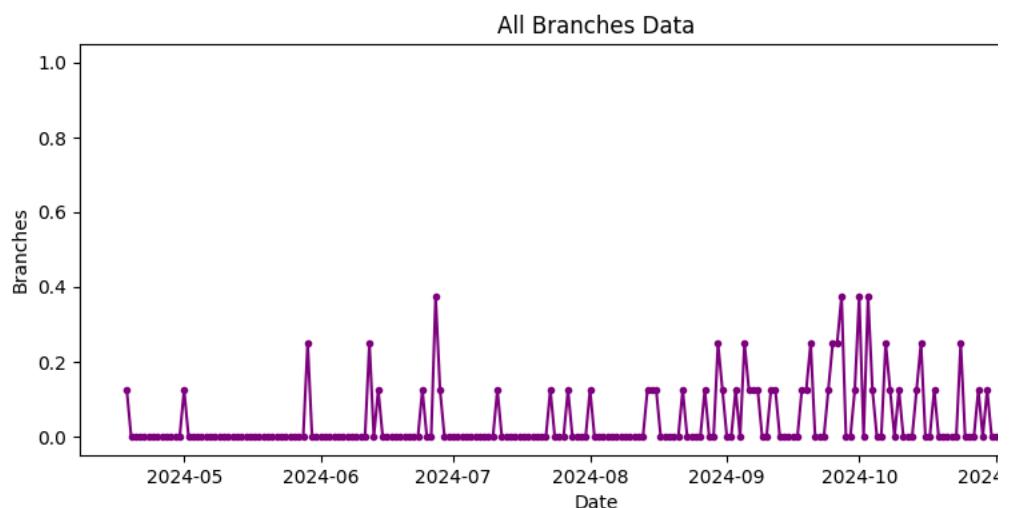
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LSTM Generated Data for Branches



All Issues Data for Branches



Timeseries Forecasting of Branches using StatsModel

Observation Graph of Branches

Number of stars

Number of forks

LangChainai-Langchain

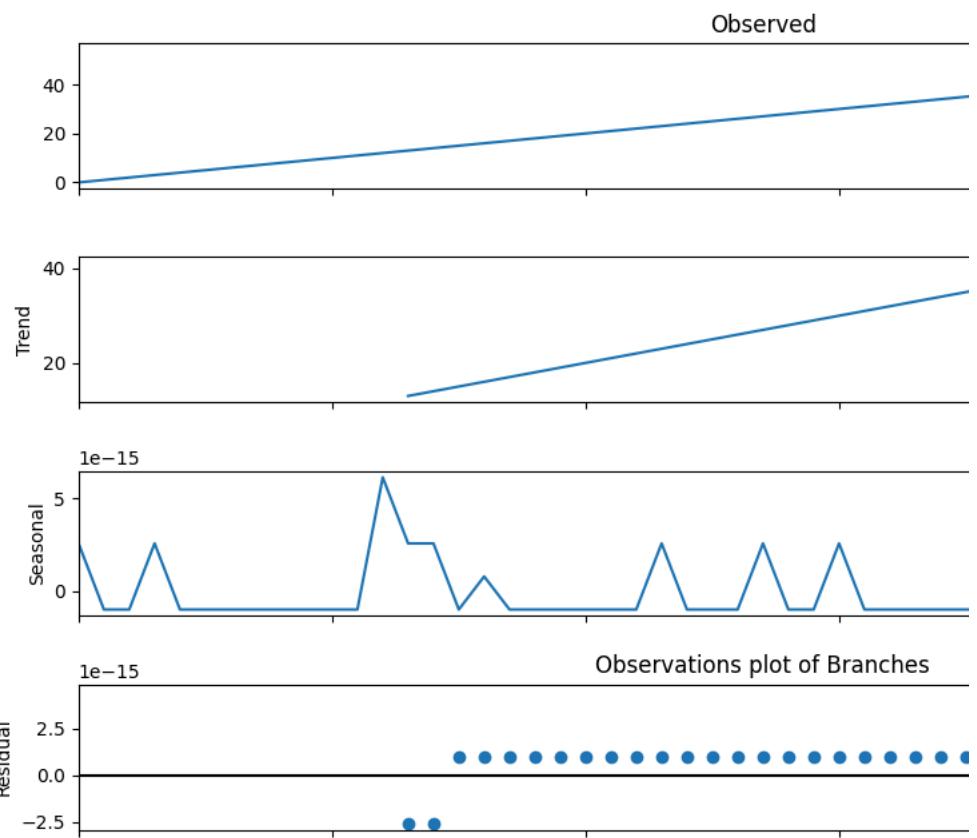
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

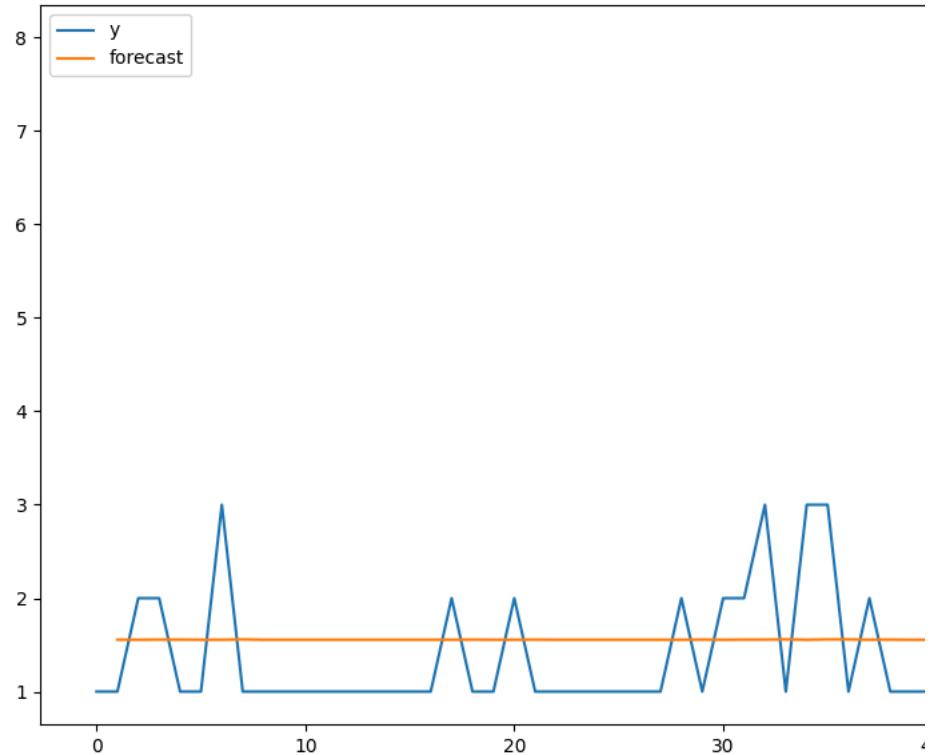
elasticsearch

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Time Series Forecasting of Branches

Timeseries forecasting of Branches



Timeseries Forecasting of Branches using Facebook/Prophet

Forecast of Branches

Number of stars

Number of forks

LangChainai-Langchain

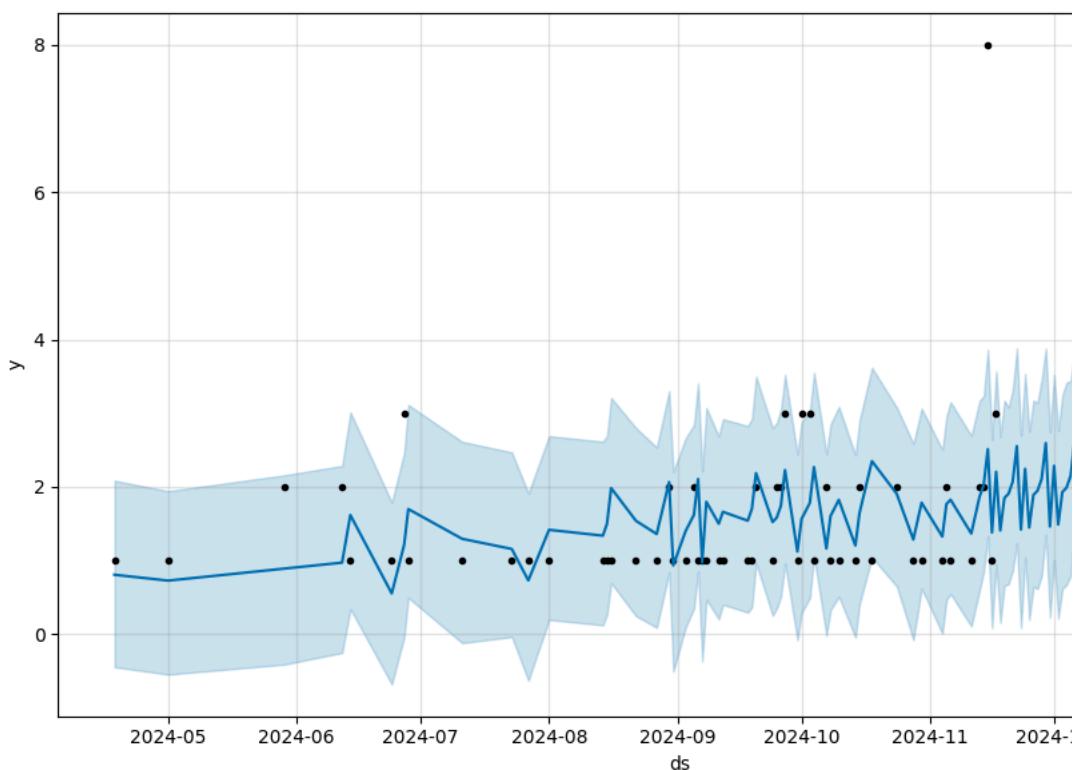
LangChainai-Langgraph

Microsoft-Autogen

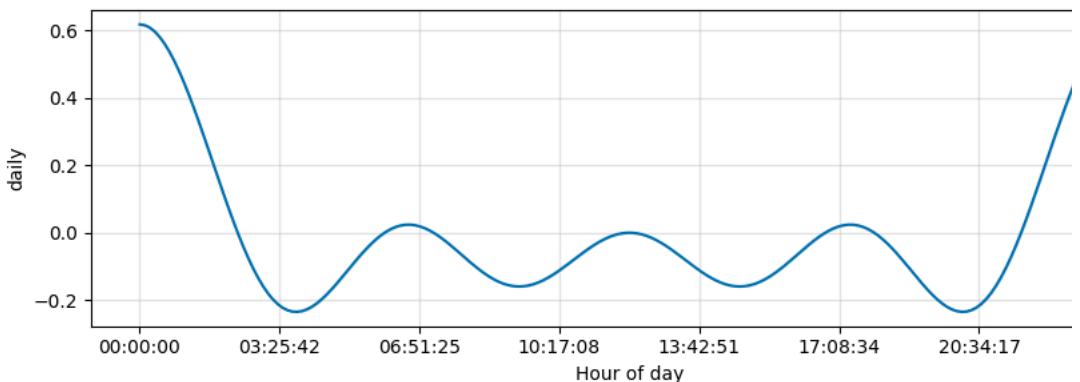
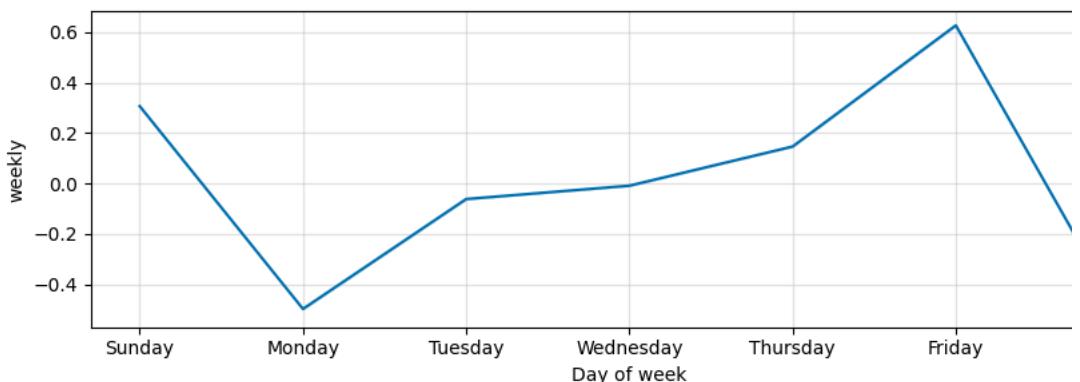
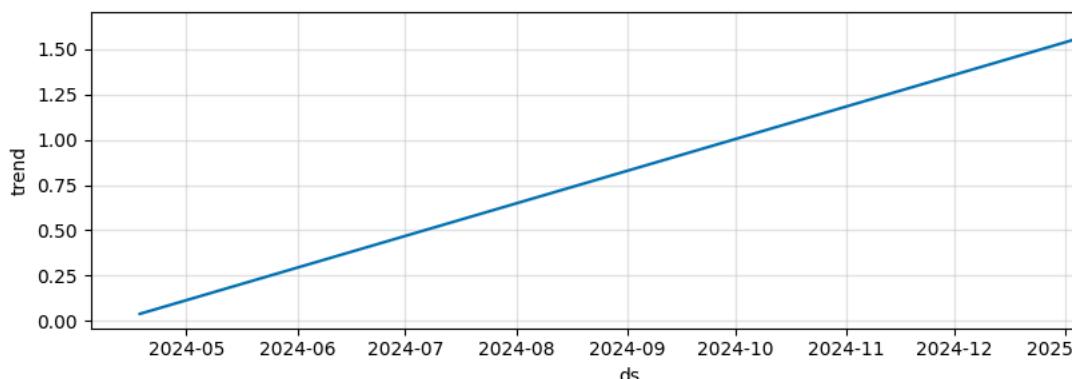
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Forecast Components of Branches



Timeseries Forecasting

Number of stars

Number of forks

LangChainai-Langchain

LangChainai-Langgraph

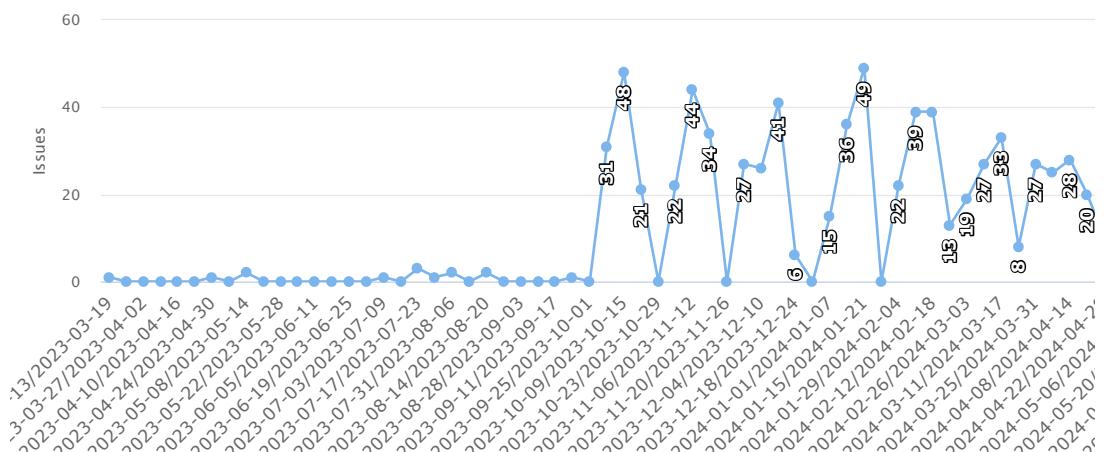
Microsoft-Autogen

Openai-Cookbook

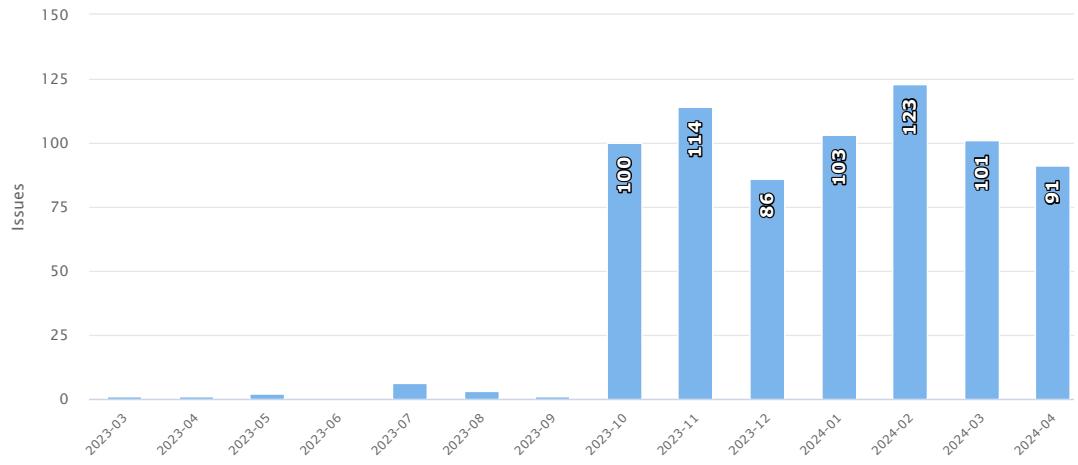
elasticsearch

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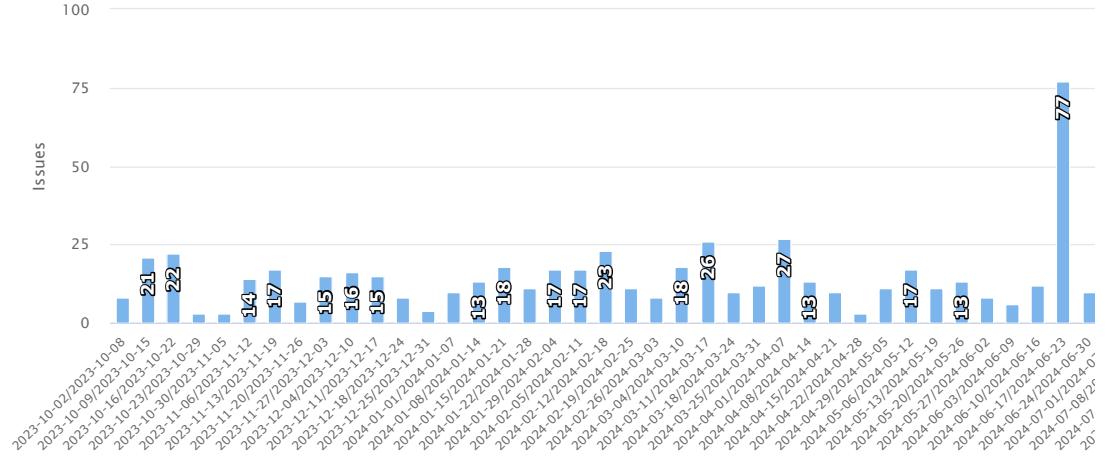
Issues of Microsoft-Autogen in last 2 years



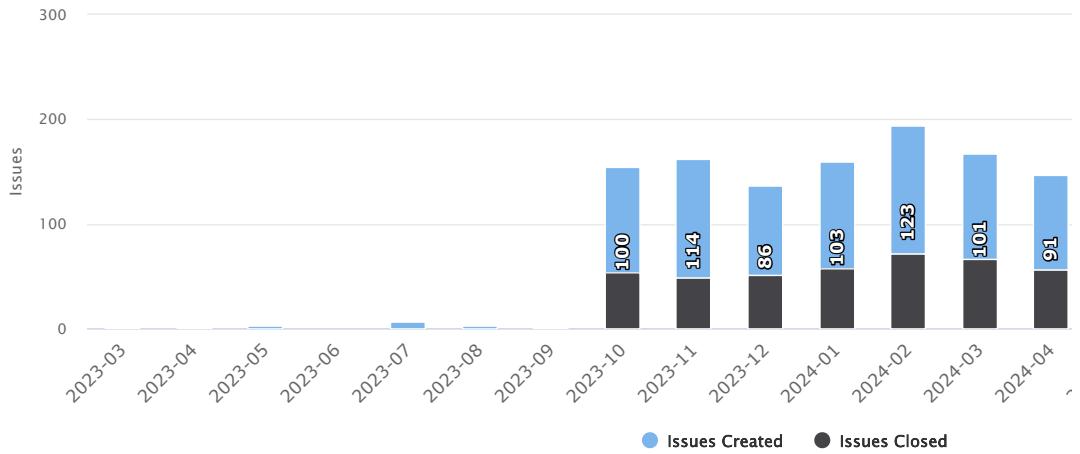
Monthly Created Issues of Microsoft-Autogen in last 2 years



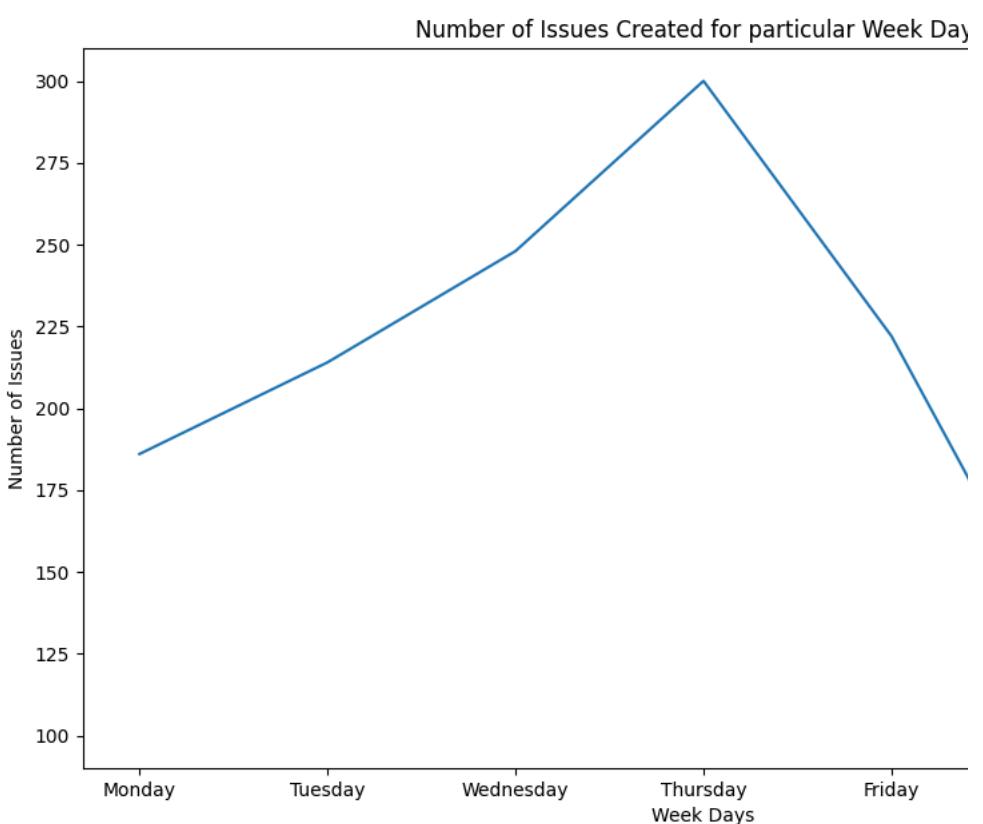
Weekly Closed Issues of Microsoft-Autogen in last 2 years



Created and Closed Issues of Microsoft-Autogen in last



The day of the week maximum number of issues created



The day of the week maximum number of issues Closed

Number of stars

Number of forks

LangChainai-Langchain

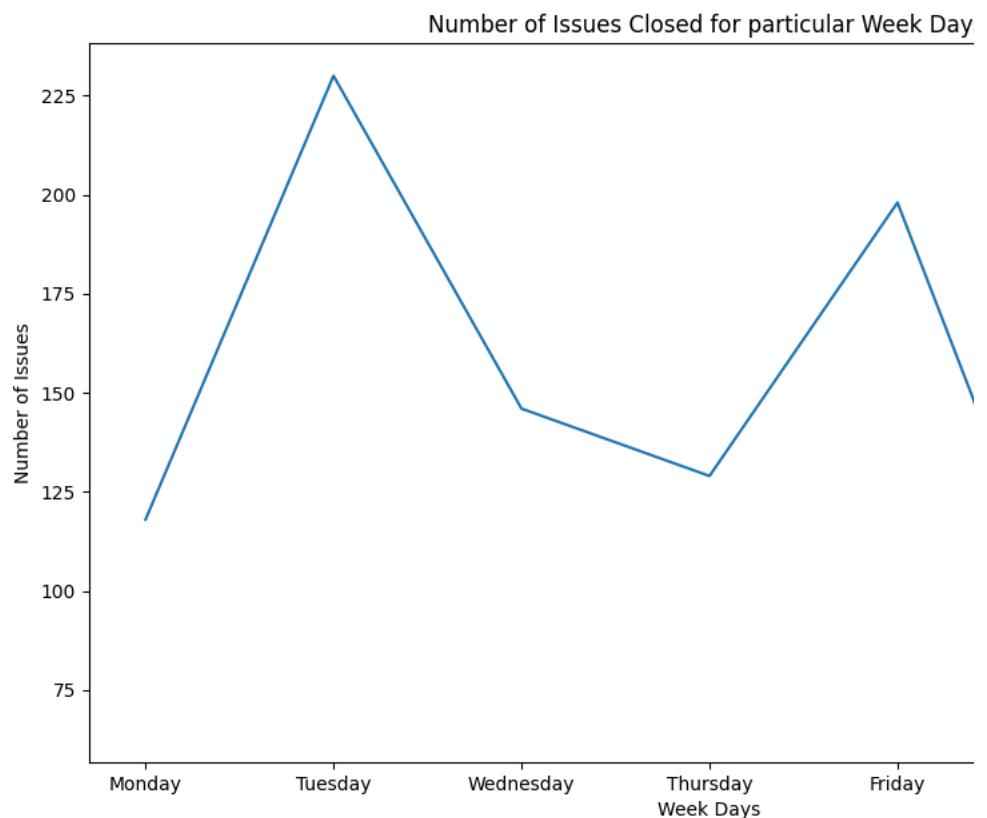
LangChainai-Langgraph

Microsoft-Autogen

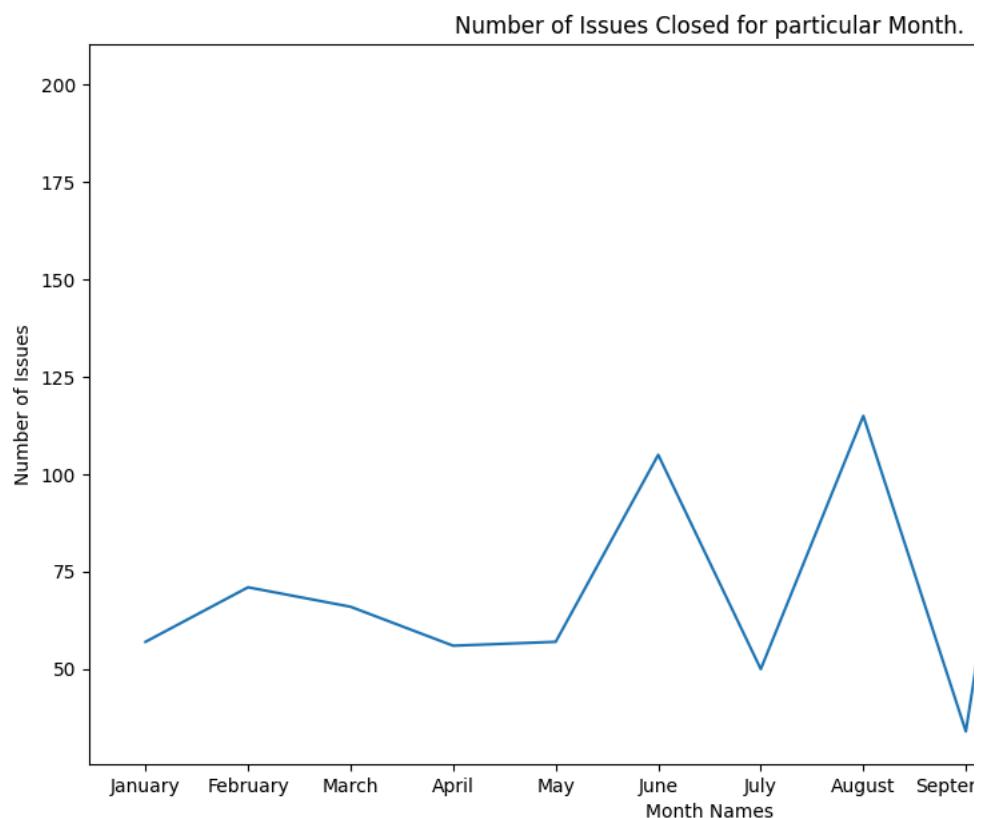
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The month of the year that has maximum number of issues closed



Timeseries Forecasting of Created Issues using Tensorflow and Keras LSTM

Model Loss for Created Issues

Number of stars

Number of forks

LangChainai-Langchain

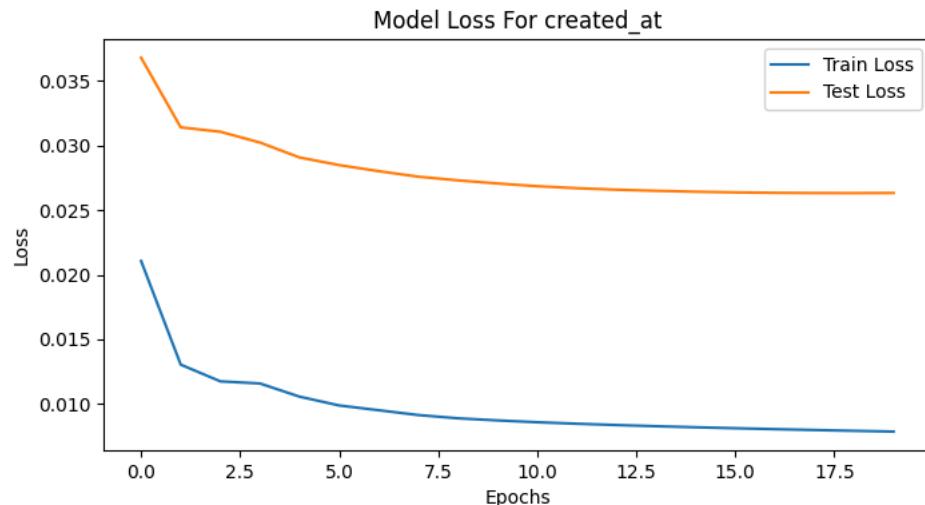
LangChainai-Langgraph

Microsoft-Autogen

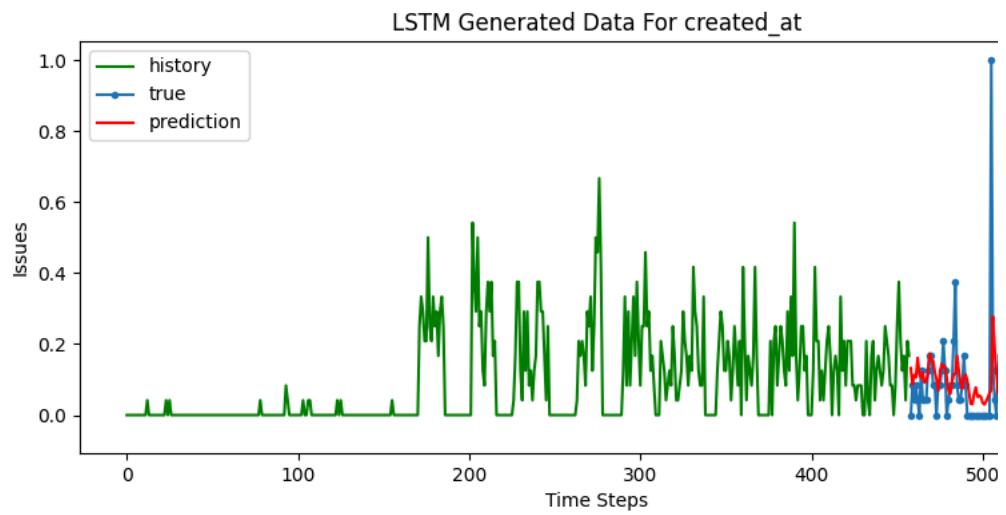
Openai-Cookbook

elasticsearch

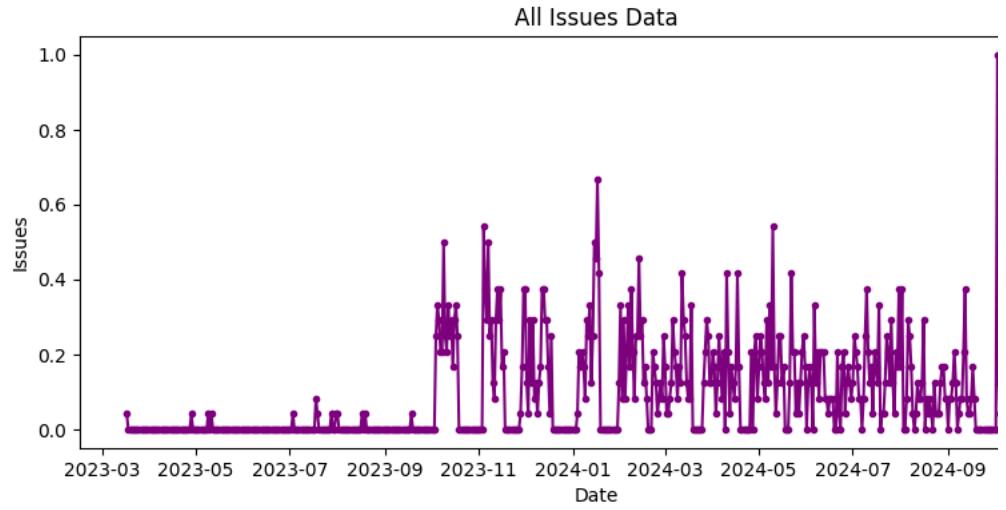
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LSTM Generated Data for Created Issues



All Issues Data for Created Issues



Timeseries Forecasting of Closed Issues using Tensorflow and Keras LSTM |

Model Loss for Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

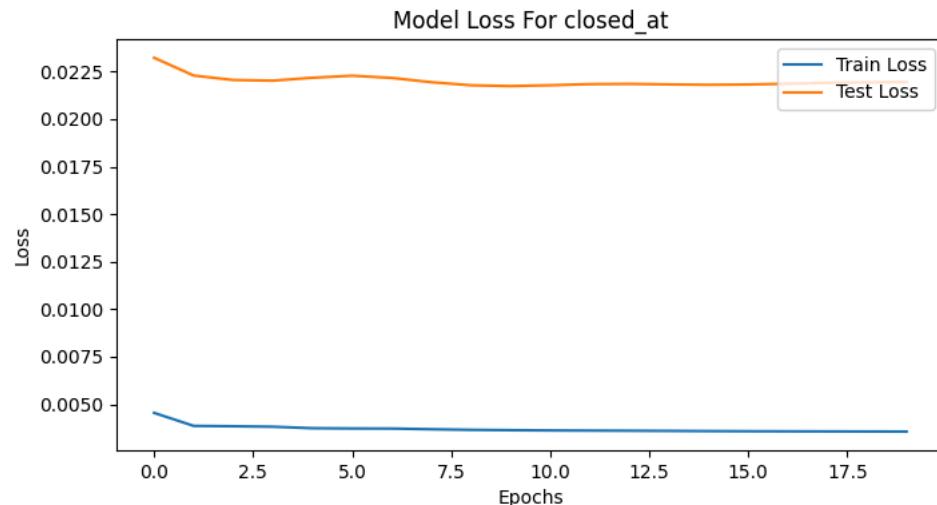
LangChainai-Langgraph

Microsoft-Autogen

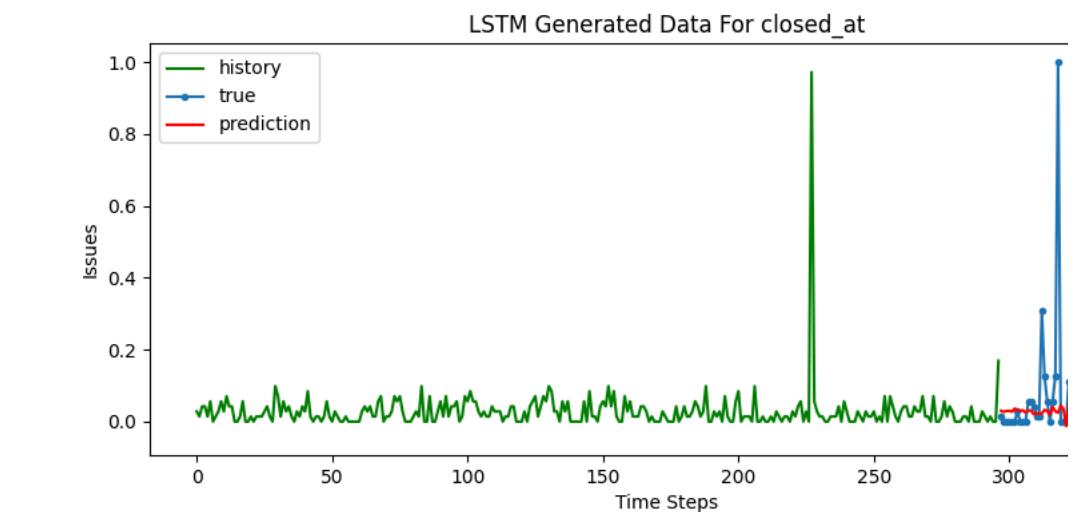
Openai-Cookbook

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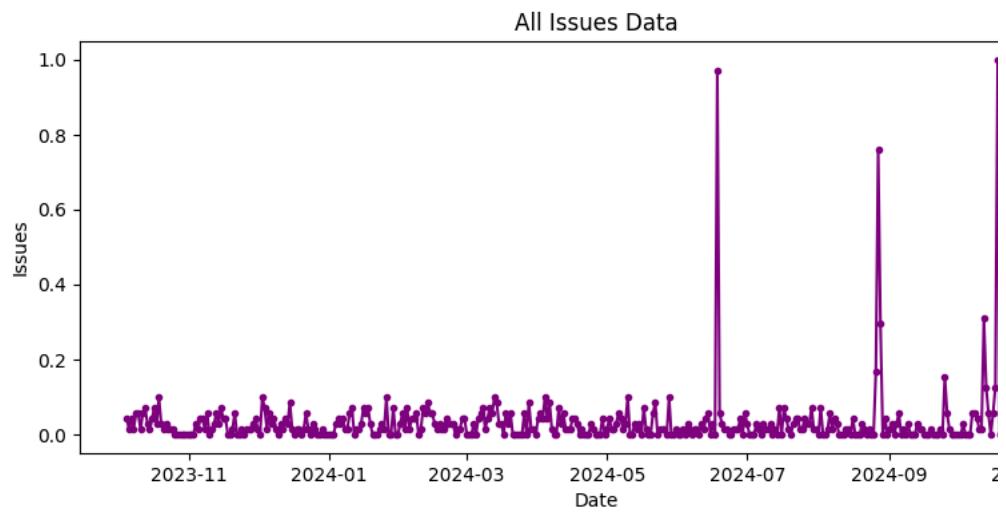
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LSTM Generated Data for Closed Issues

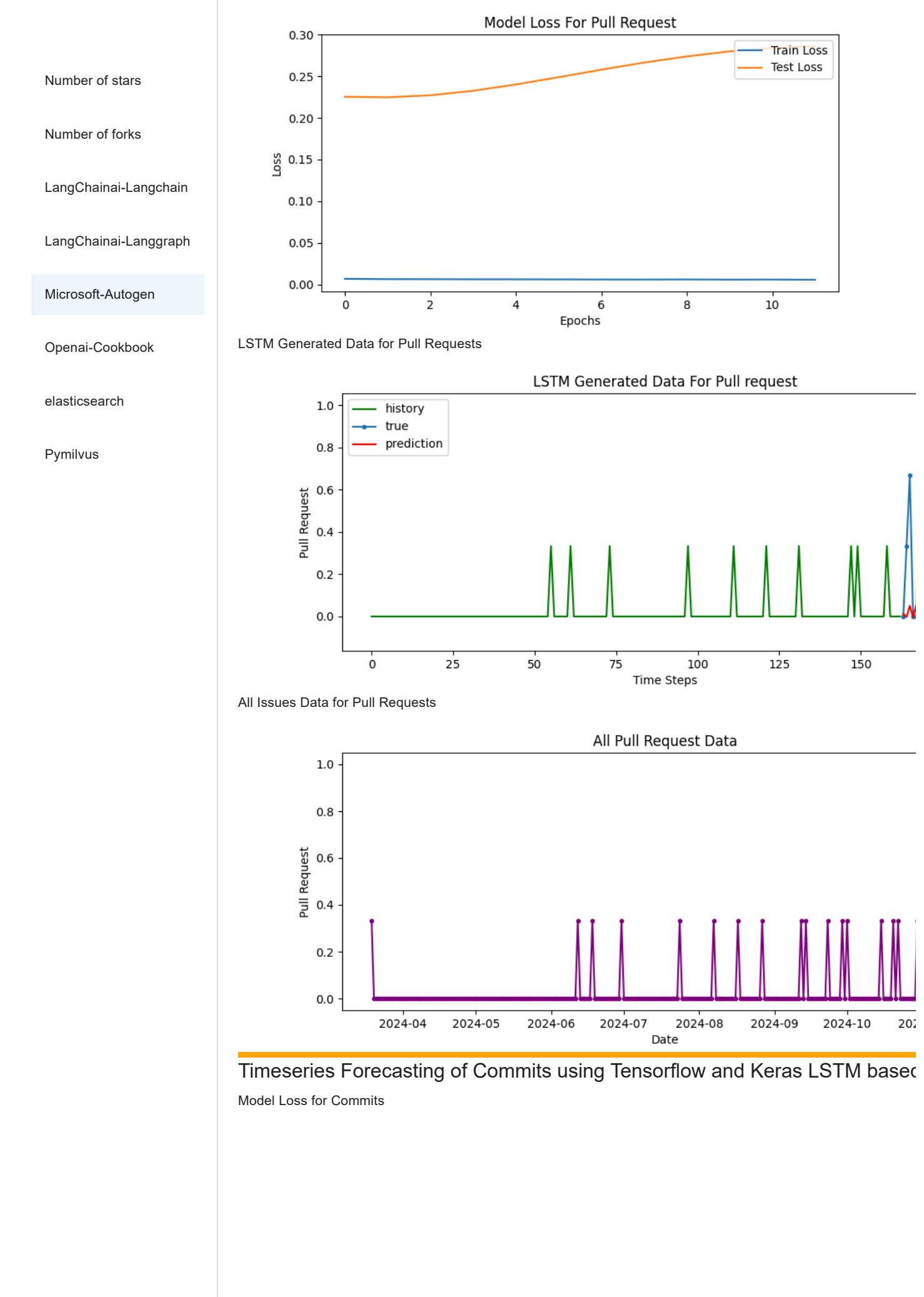


All Issues Data for Closed Issues



Timeseries Forecasting of Pull Requests using Tensorflow and Keras LSTM t

Model Loss for Pull Requests



Number of stars

Number of forks

LangChainai-Langchain

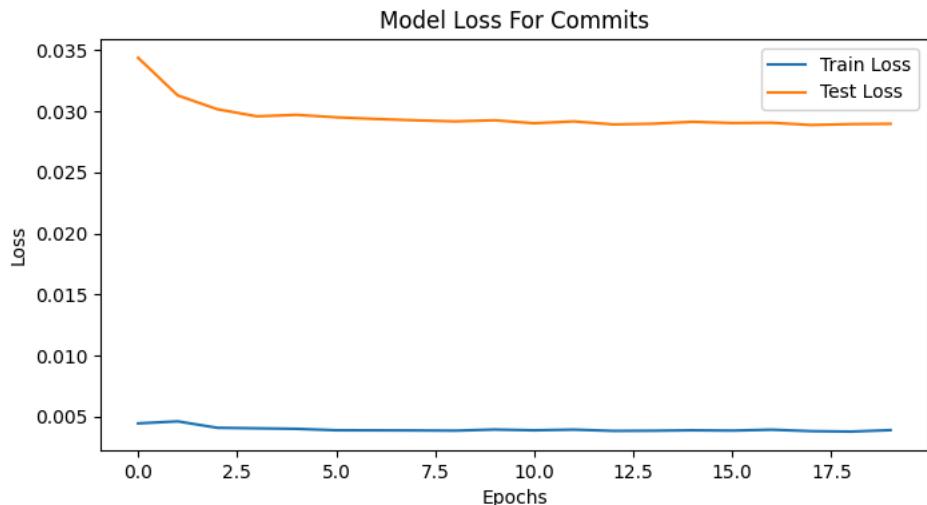
LangChainai-Langgraph

Microsoft-Autogen

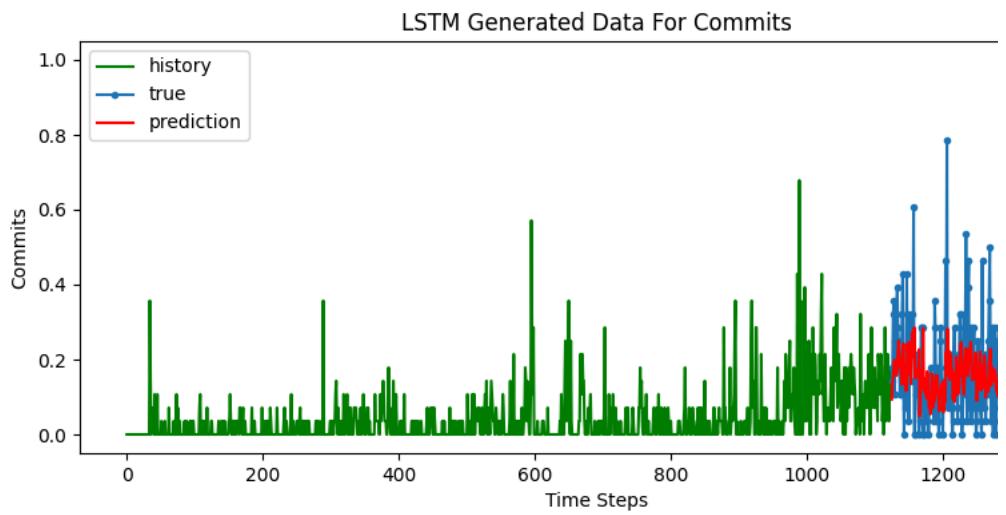
Openai-Cookbook

elasticsearch

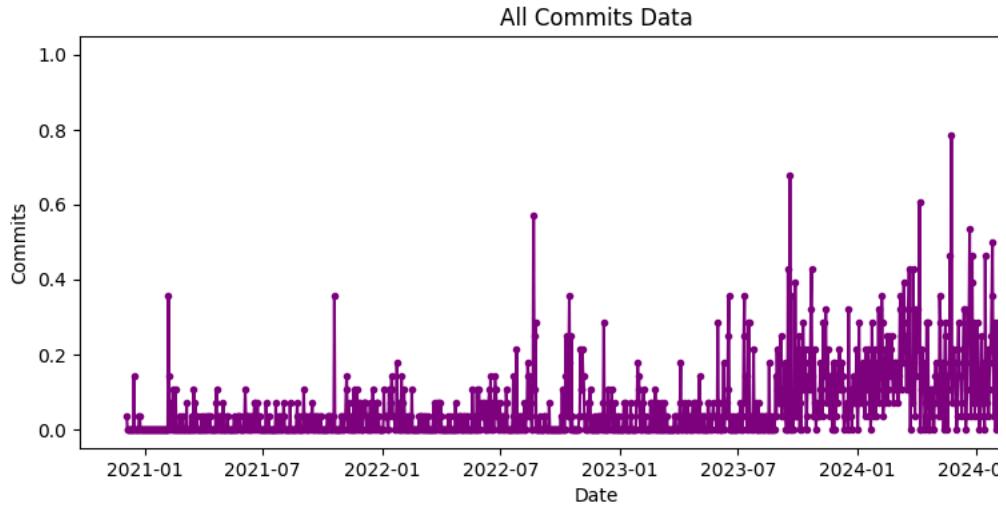
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LSTM Generated Data for Commits



All Issues Data for Commits



Timeseries Forecasting of Created Issues using Facebook/Prophet based on Forecast of Created Issues

Number of stars

Number of forks

LangChainai-Langchain

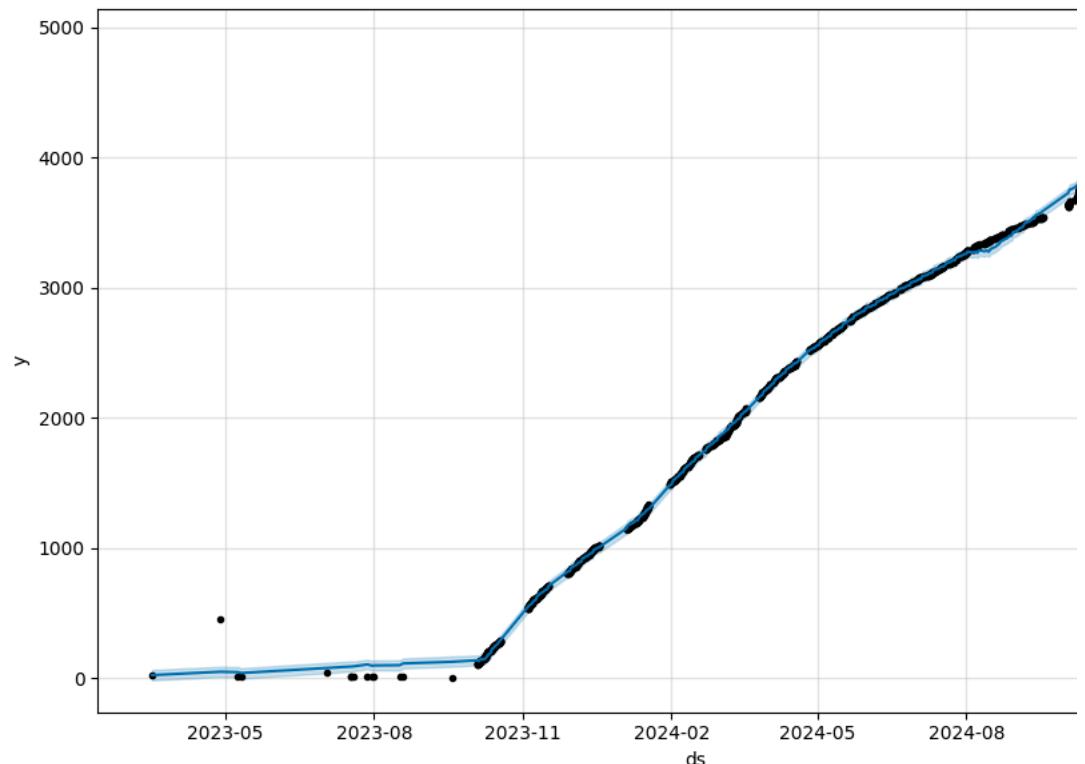
LangChainai-Langgraph

Microsoft-Autogen

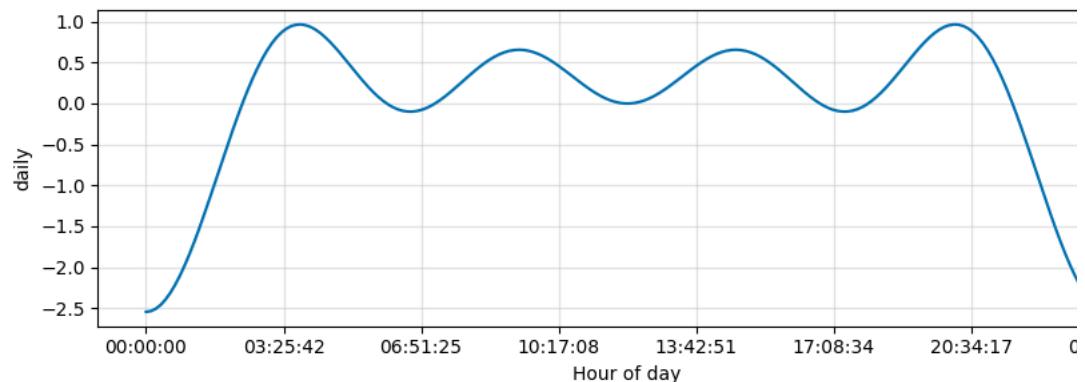
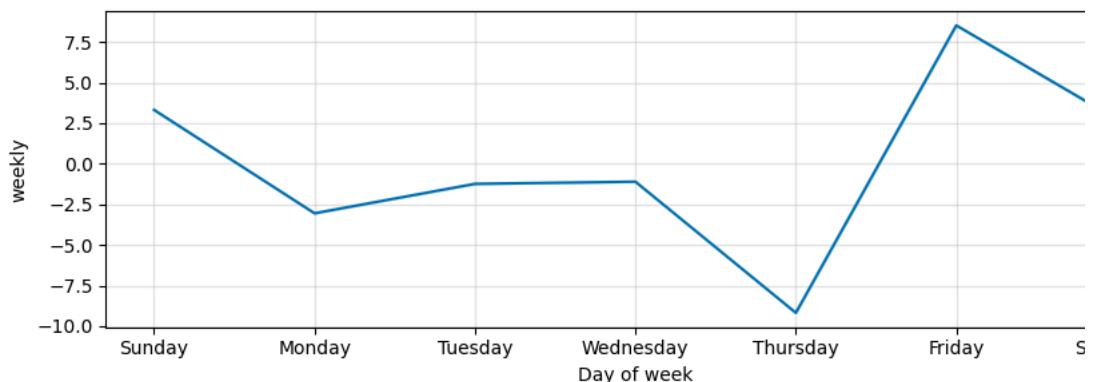
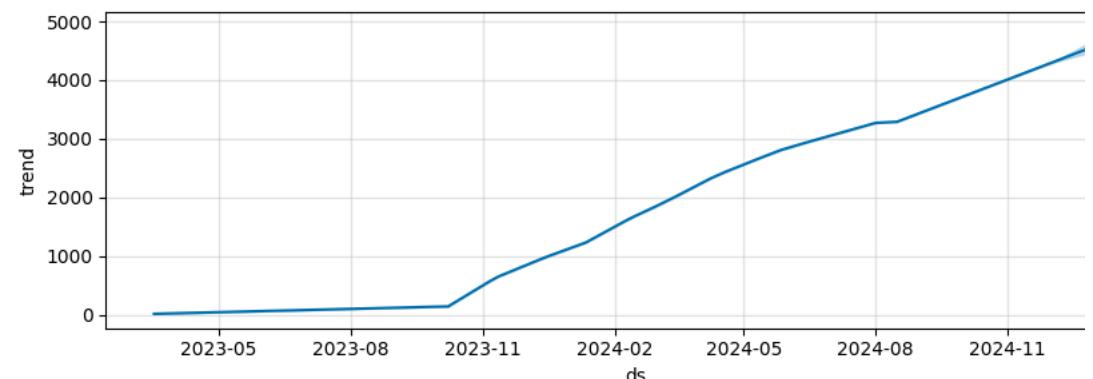
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Forecast Components of Created Issues



Timeseries Forecasting of Closed Issues using Facebook/Prophet based on |

Forecast of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

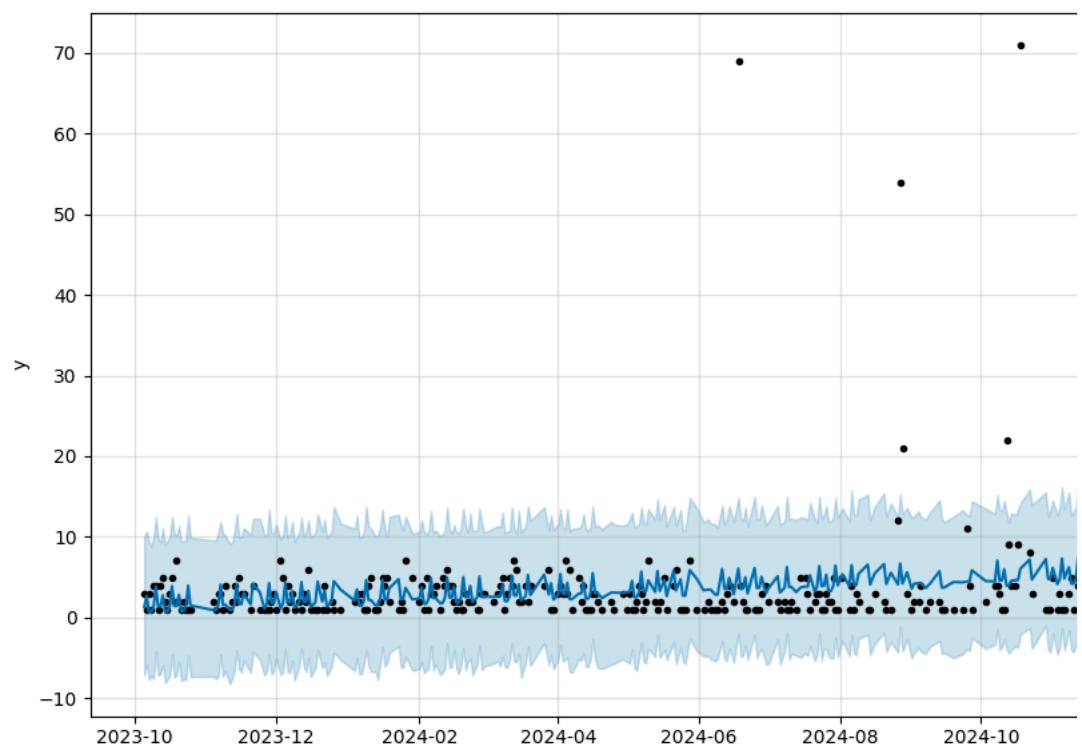
LangChainai-Langgraph

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Forecast Components of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

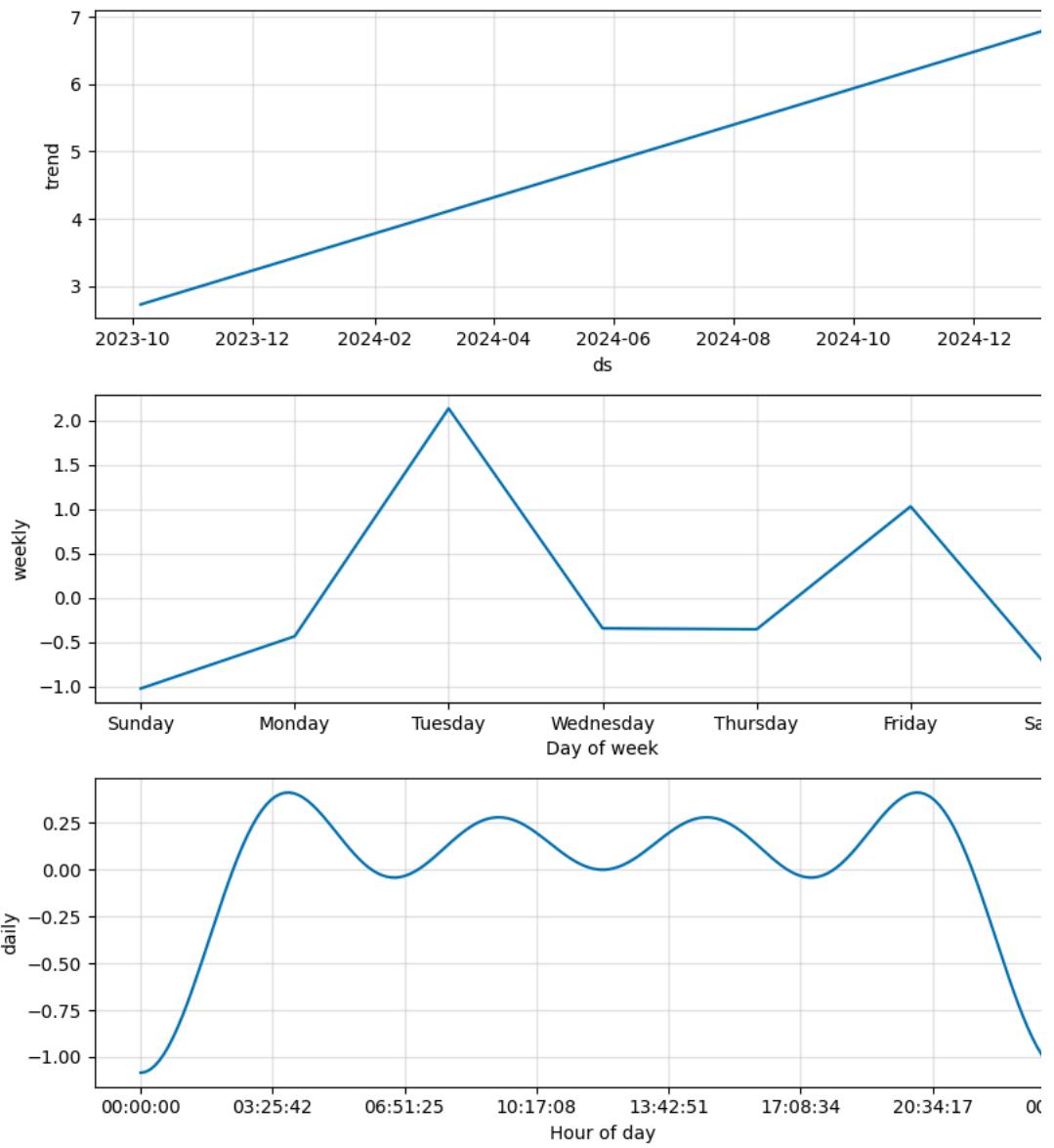
LangChainai-Langgraph

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Timeseries Forecasting of Pull Request using Facebook/Prophet based on past history
Forecast of Pull Request

Number of stars

Number of forks

LangChainai-Langchain

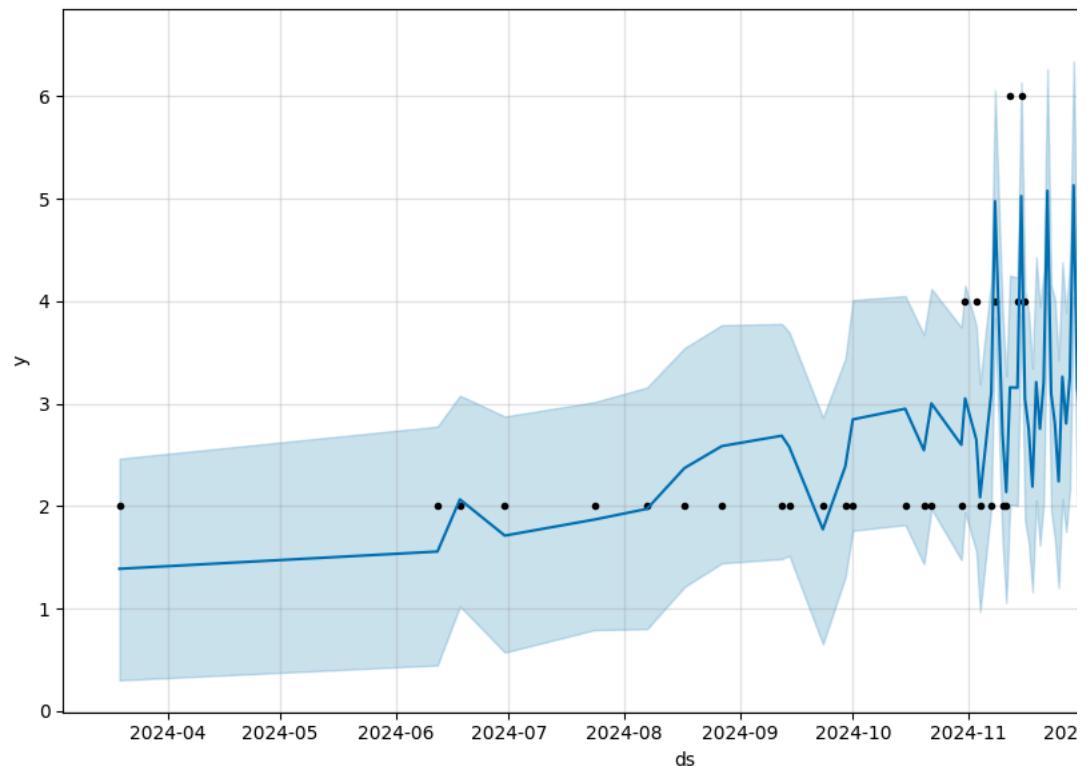
LangChainai-Langgraph

Microsoft-Autogen

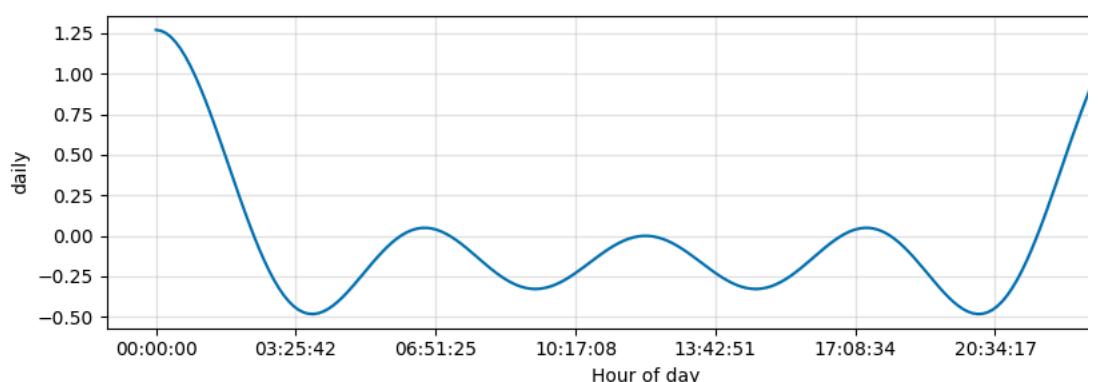
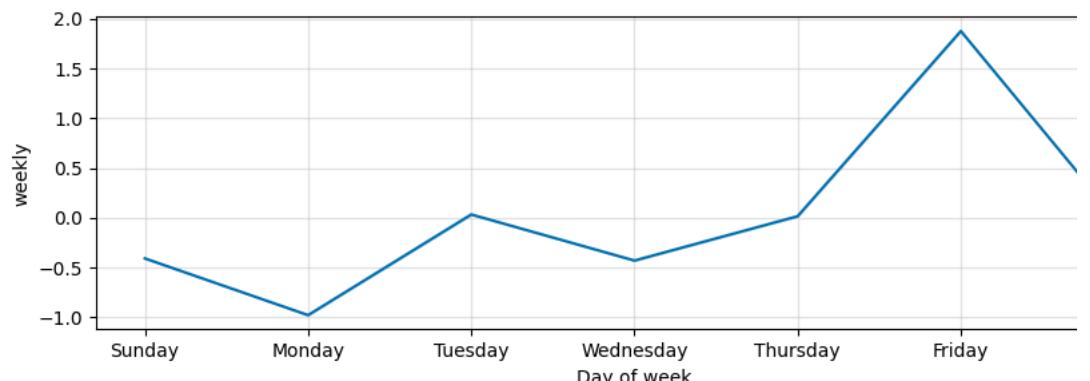
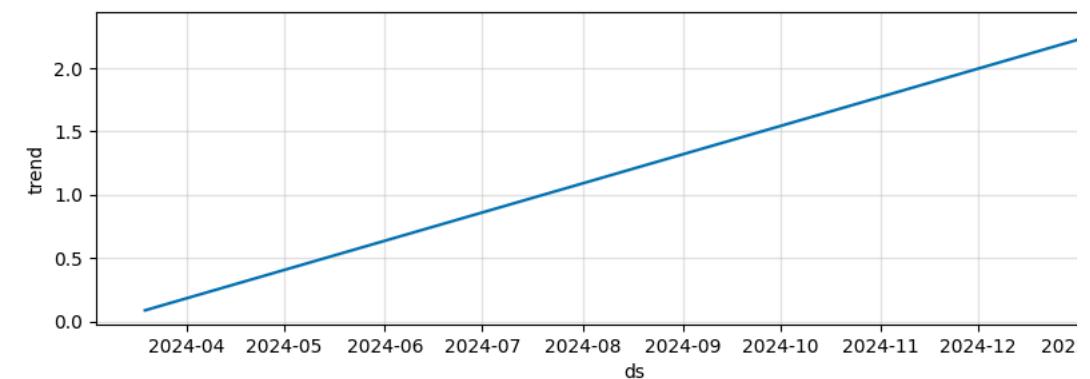
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Forecast Components of Pull Request



Timeseries Forecasting of Commits using Facebook/Prophet based on past repository metrics

Forecast of Commits

Number of stars

Number of forks

LangChainai-Langchain

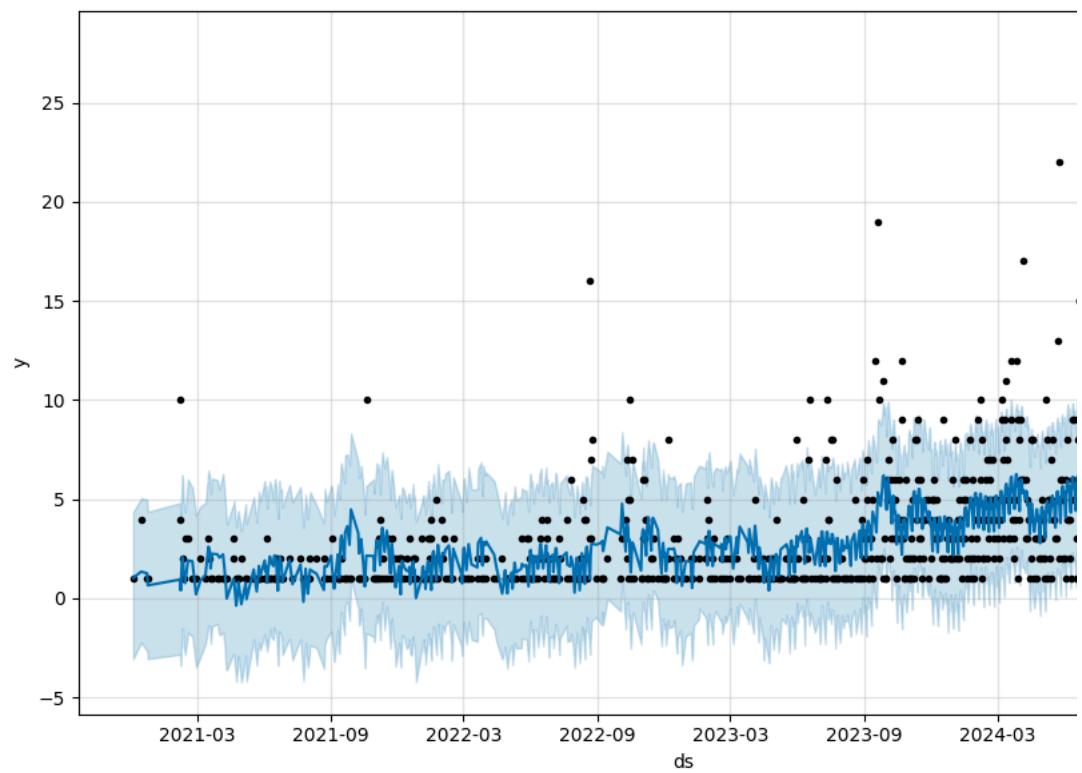
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Forecast Components of Commits

Number of stars

Number of forks

LangChainai-Langchain

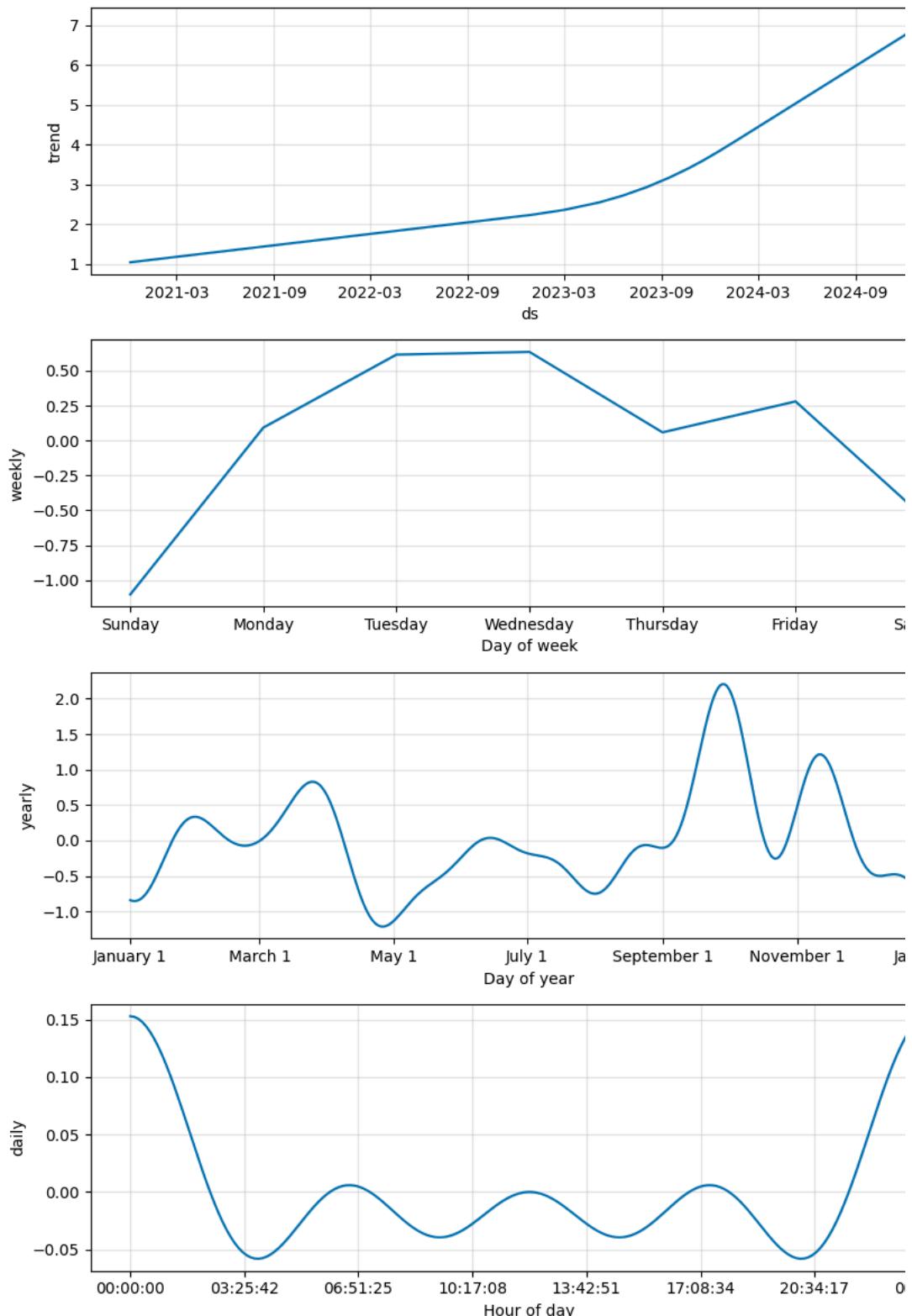
LangChainai-Langgraph

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Timeseries Forecasting of Created Issues using StatsModel based on past metrics

Observation Graph of Created Issues

Number of stars

Number of forks

LangChainai-Langchain

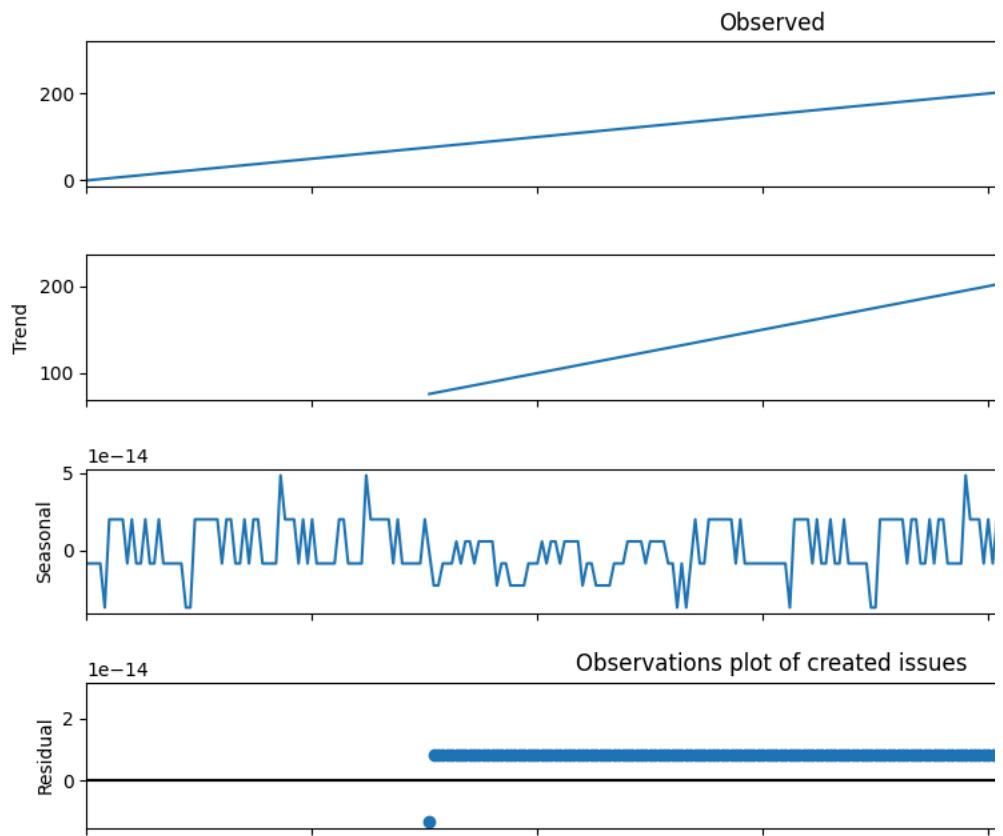
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Microsoft-Autogen

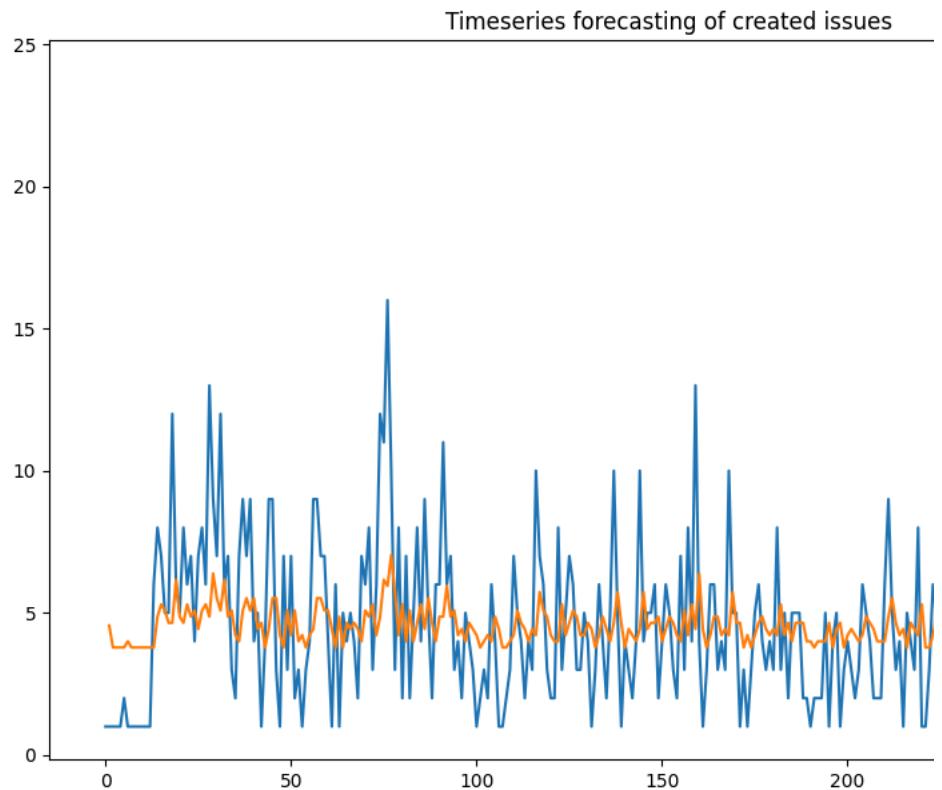
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Time Series Forecasting of Created Issues



Timeseries Forecasting of Closed Issues using StatsModel based on past metrics

Observation Graph of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

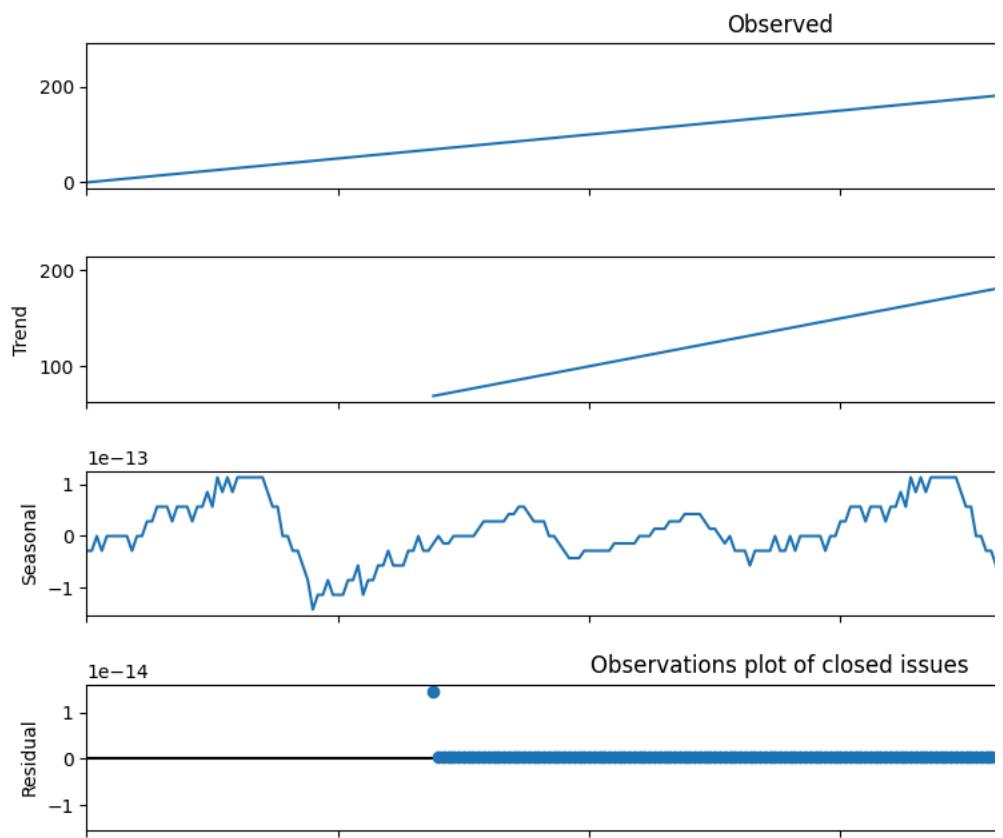
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

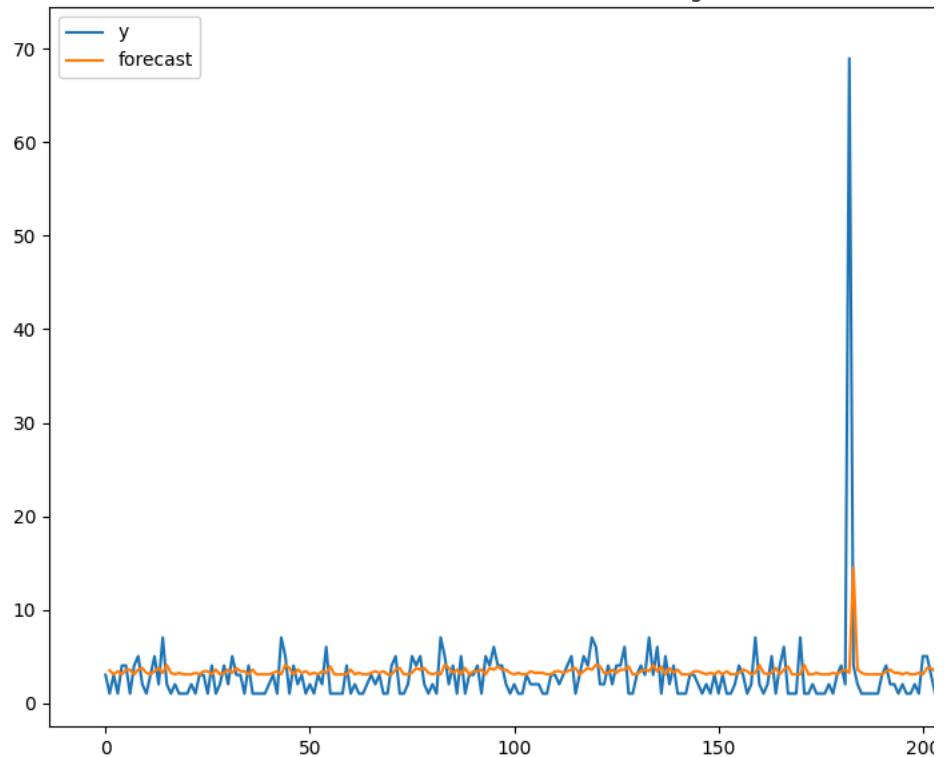
elasticsearch

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Time Series Forecasting of Closed Issues

Timeseries forecasting of closed issues



Timeseries Forecasting of Pull Request Issues using StatsModel based on p

Observation Graph of Pull Request Issues

Number of stars

Number of forks

LangChainai-Langchain

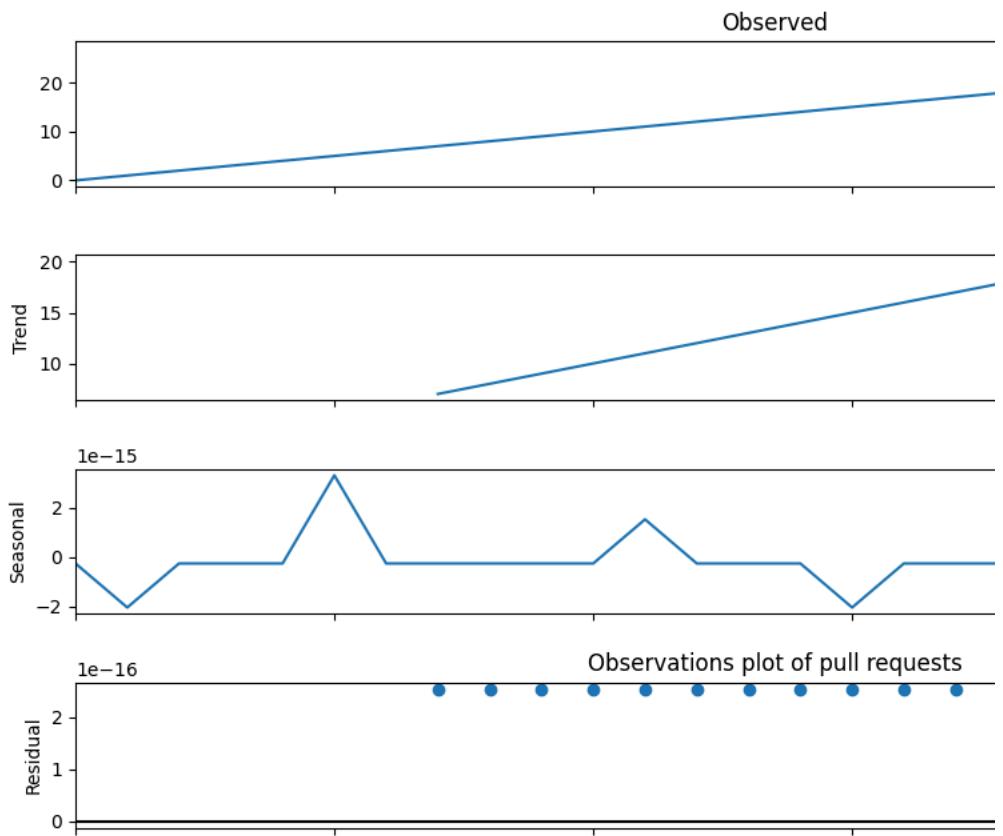
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

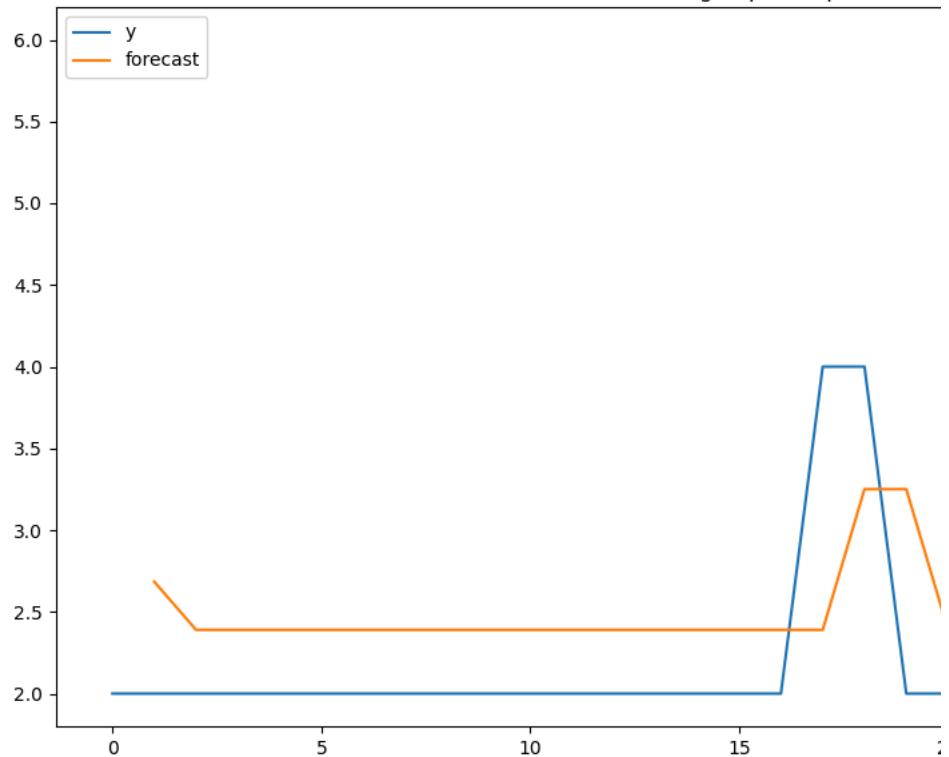
elasticsearch

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Time Series Forecasting of Pull Request Issues

Timeseries forecasting of pull requests

**Timeseries Forecasting of Commits Issues using StatsModel based on past r**

Observation Graph of Commits Issues

Number of stars

Number of forks

LangChainai-Langchain

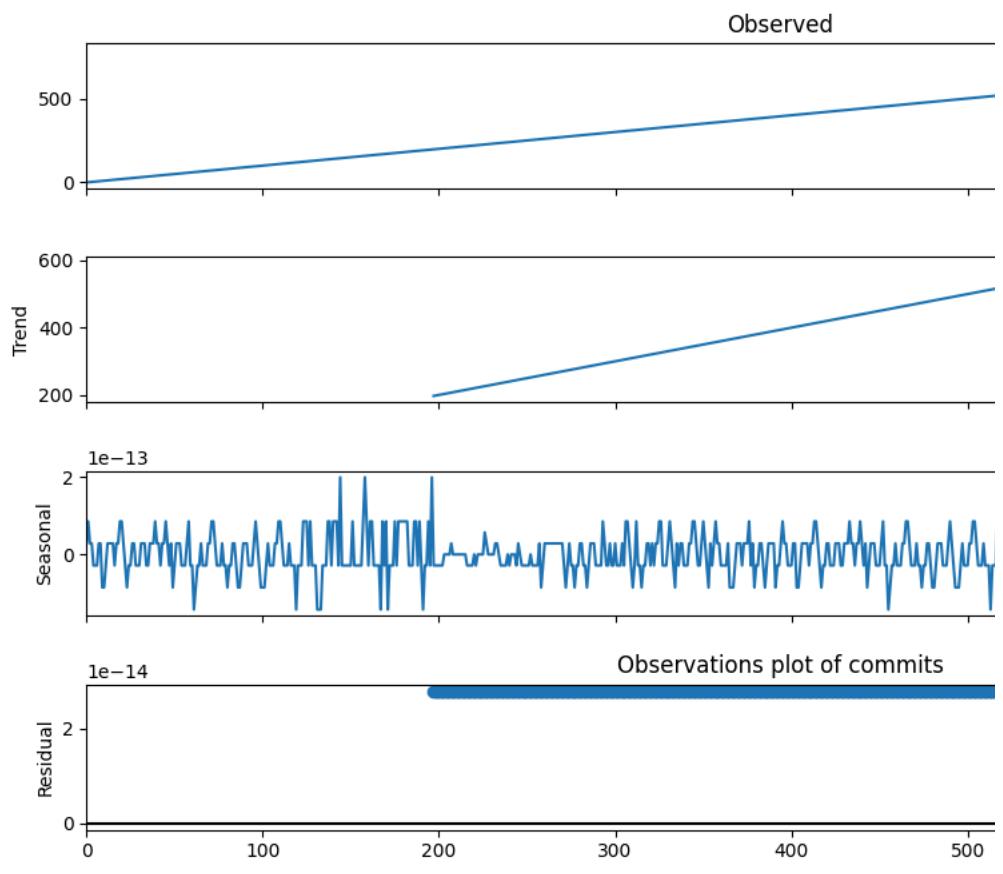
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

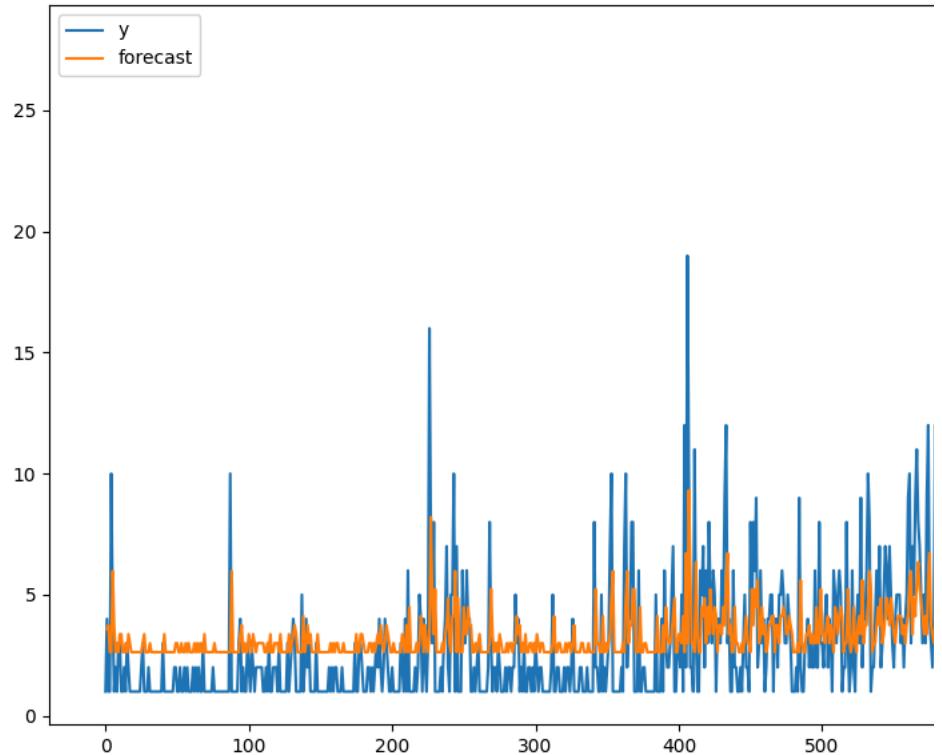
elasticsearch

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Time Series Forecasting of Commits Issues

Timeseries forecasting of commits

**Timeseries Forecasting of Releases using Tensorflow and Keras LSTM**

Model Loss for Releases

Number of stars

Number of forks

LangChainai-Langchain

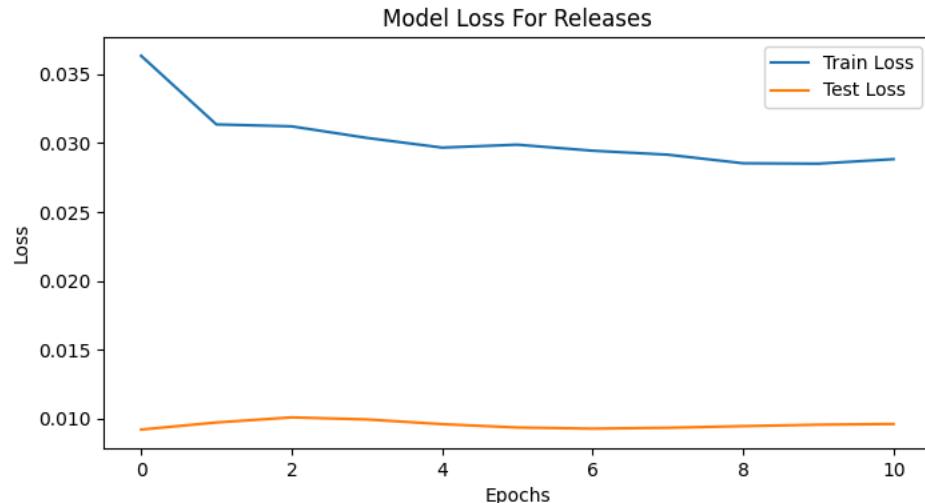
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Microsoft-Autogen

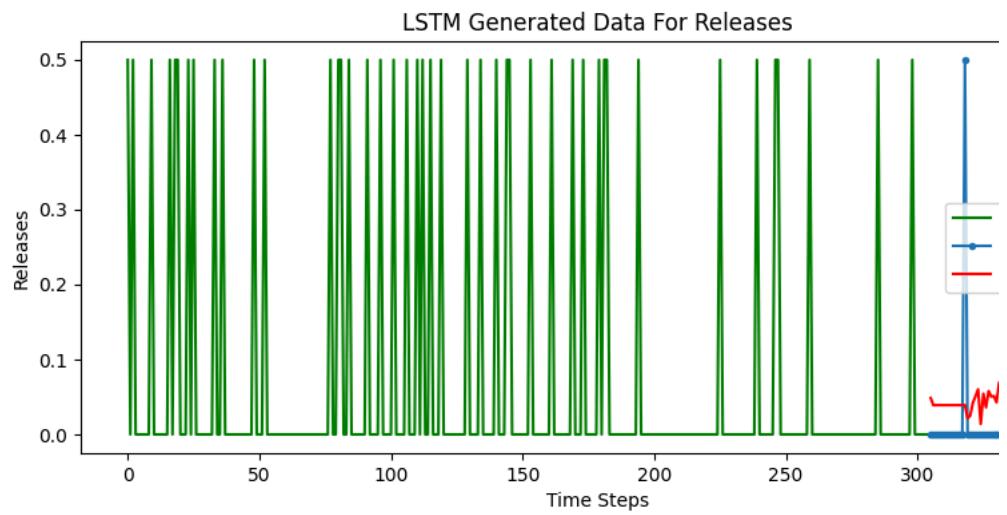
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LSTM Generated Data for Releases



Timeseries Forecasting of Release using StatsModel

Observation Graph of Release Issues

Number of stars

Number of forks

LangChainai-Langchain

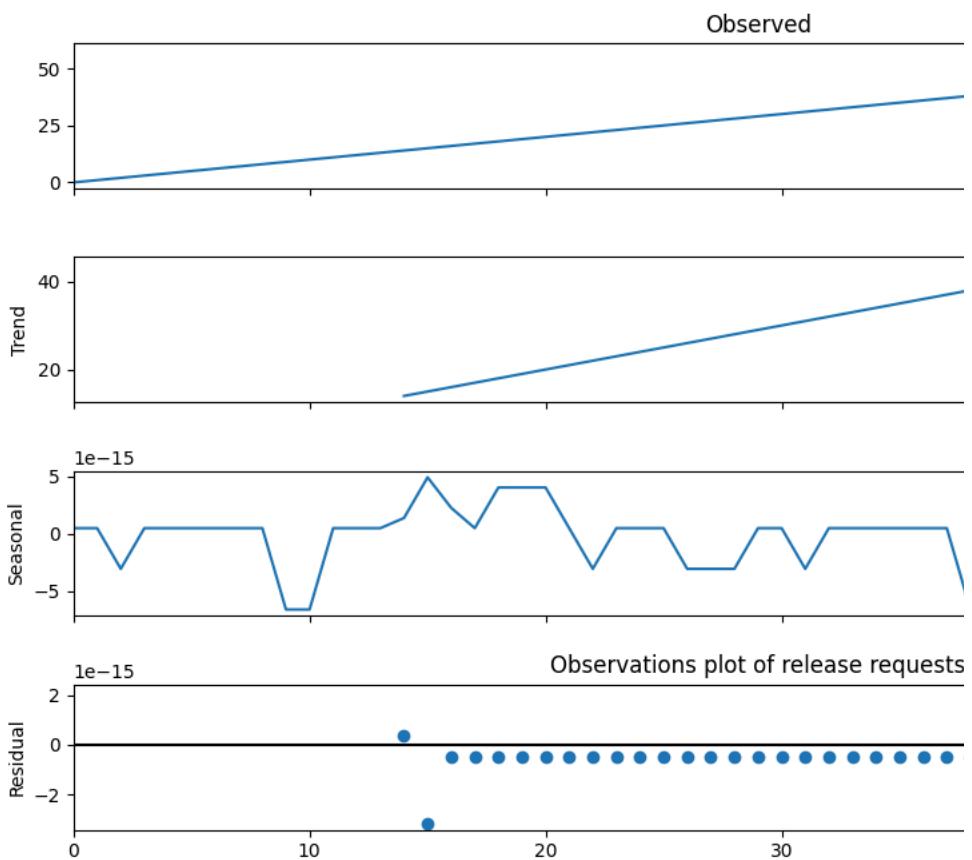
LangChainai-Langgraph

Microsoft-Autogen

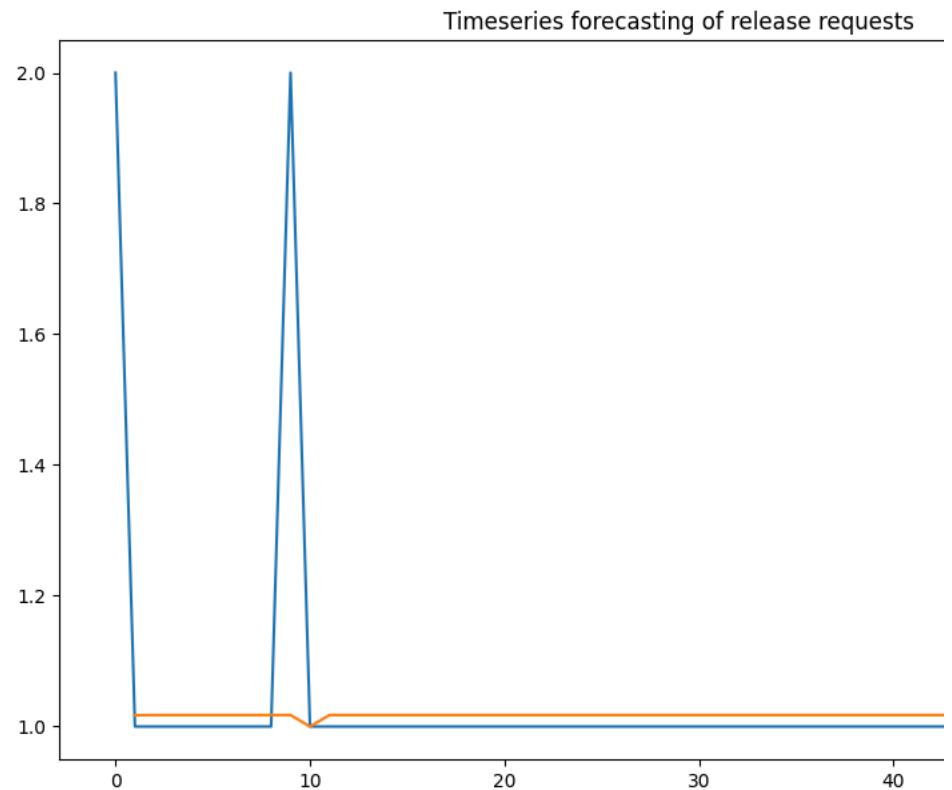
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Time Series Forecasting of Releases



Timeseries Forecasting of Releases using Facebook/Prophet

Forecast of Releases

Number of stars

Number of forks

LangChainai-Langchain

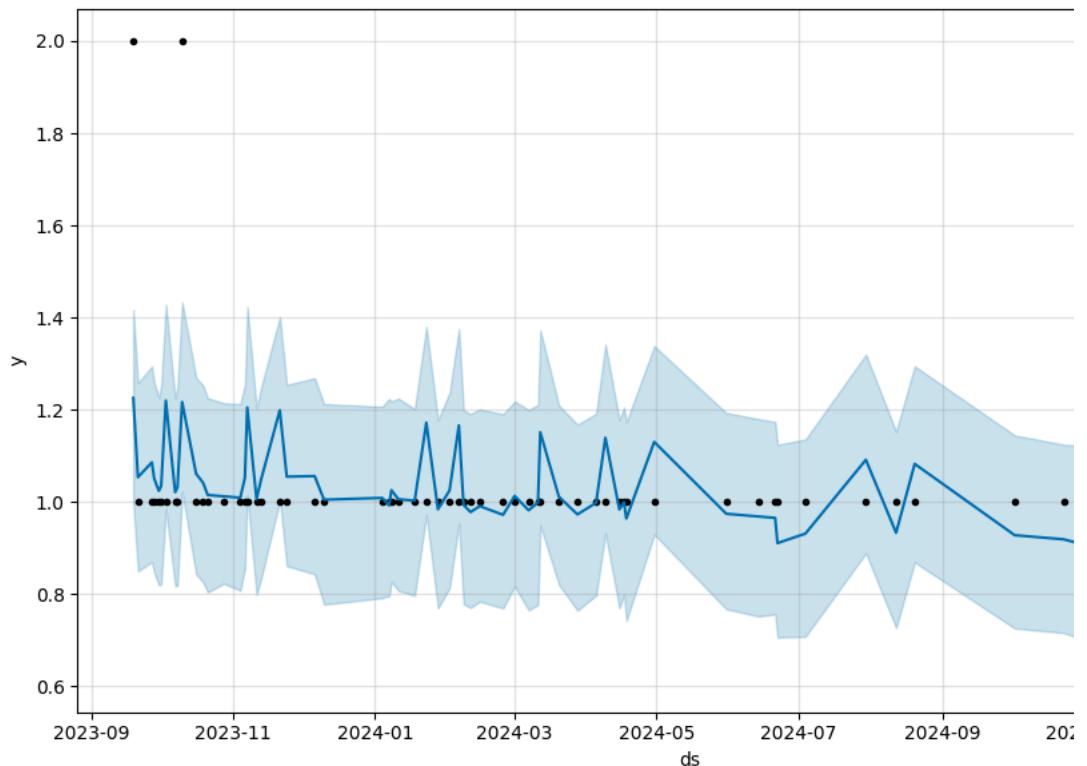
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Microsoft-Autogen

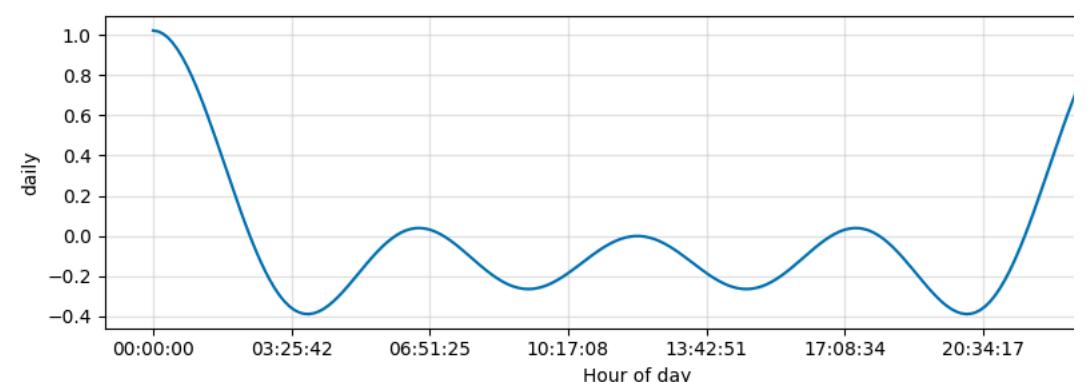
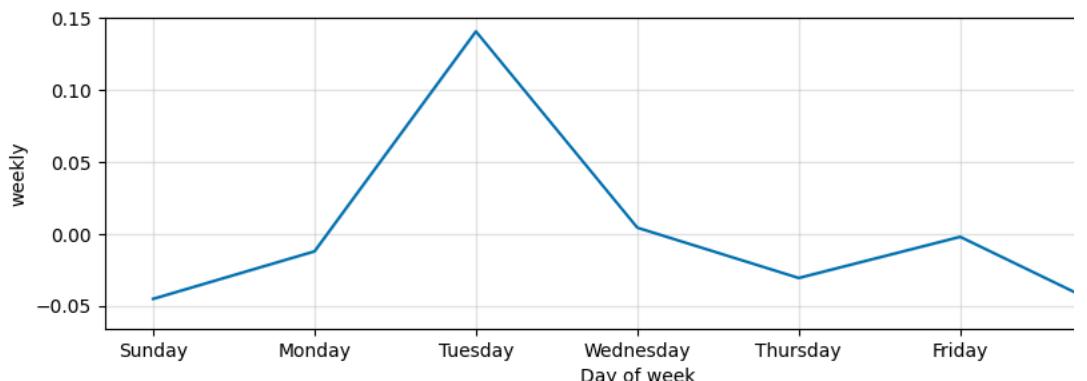
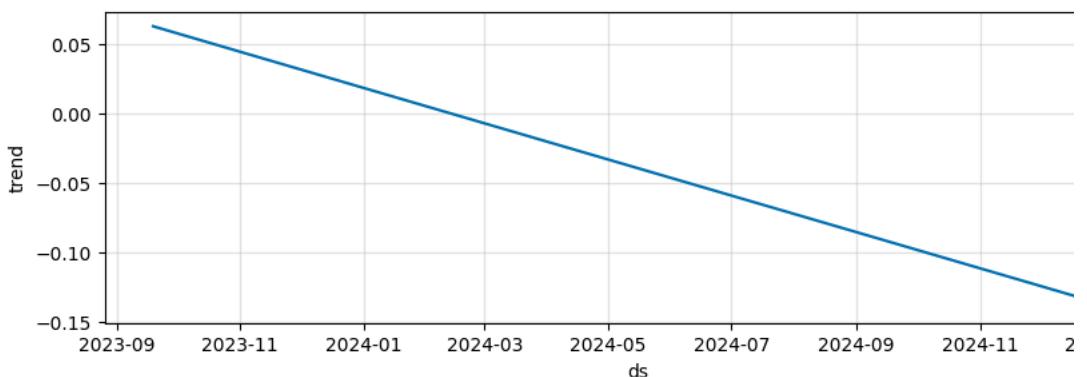
Openai-Cookbook

elasticsearch

Pymilvus



Forecast Components of Releases



Timeseries Forecasting of Contributors using Tensorflow and Keras LSTM

Model Loss for Contributors

Number of stars

Number of forks

LangChainai-Langchain

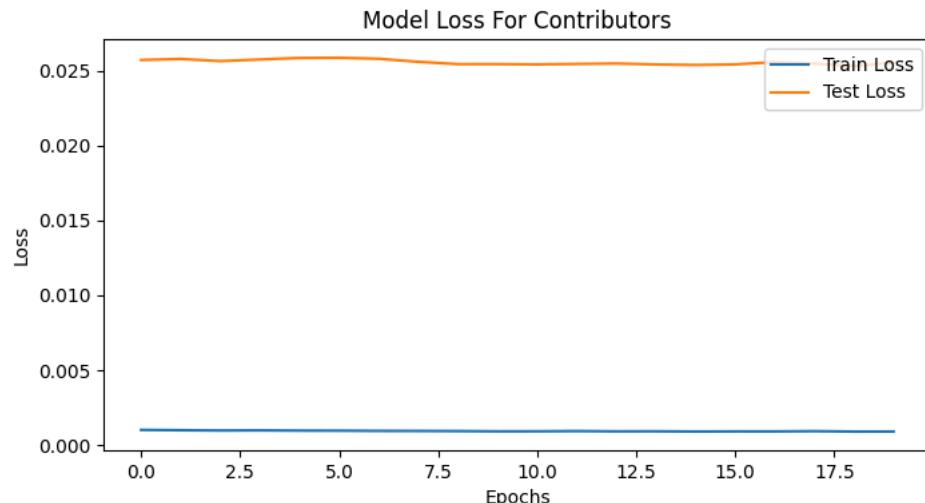
LangChainai-Langgraph

Microsoft-Autogen

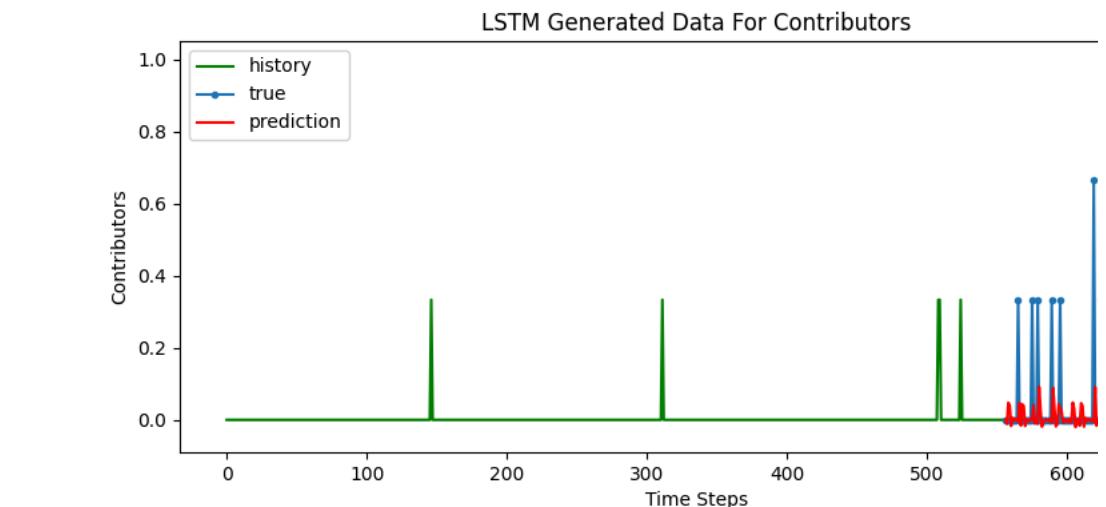
Openai-Cookbook

elasticsearch

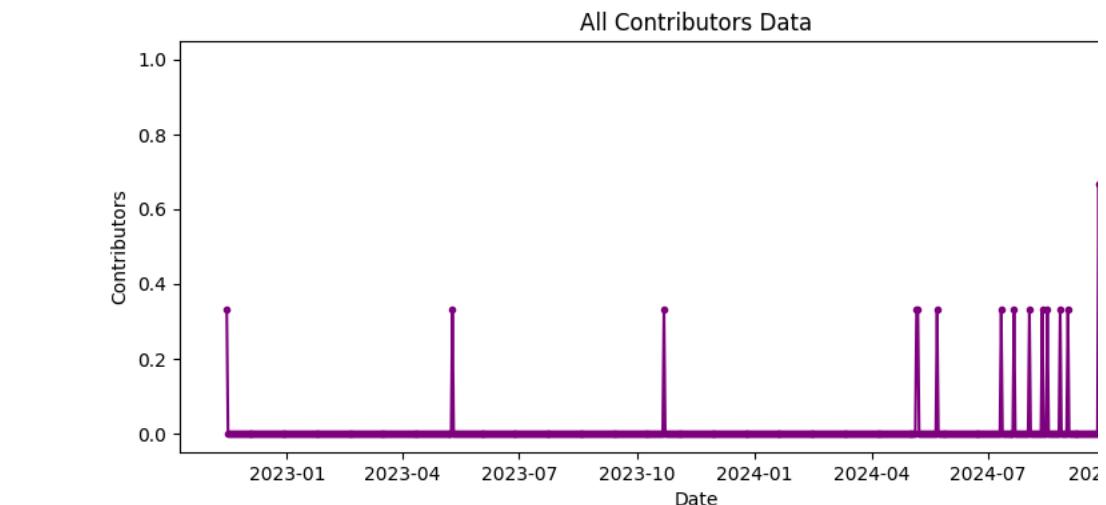
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LSTM Generated Data for Contributors



All Issues Data for Contributors



Timeseries Forecasting of Contributors using StatsModel

Observation Graph of Contributors

Number of stars

Number of forks

LangChainai-Langchain

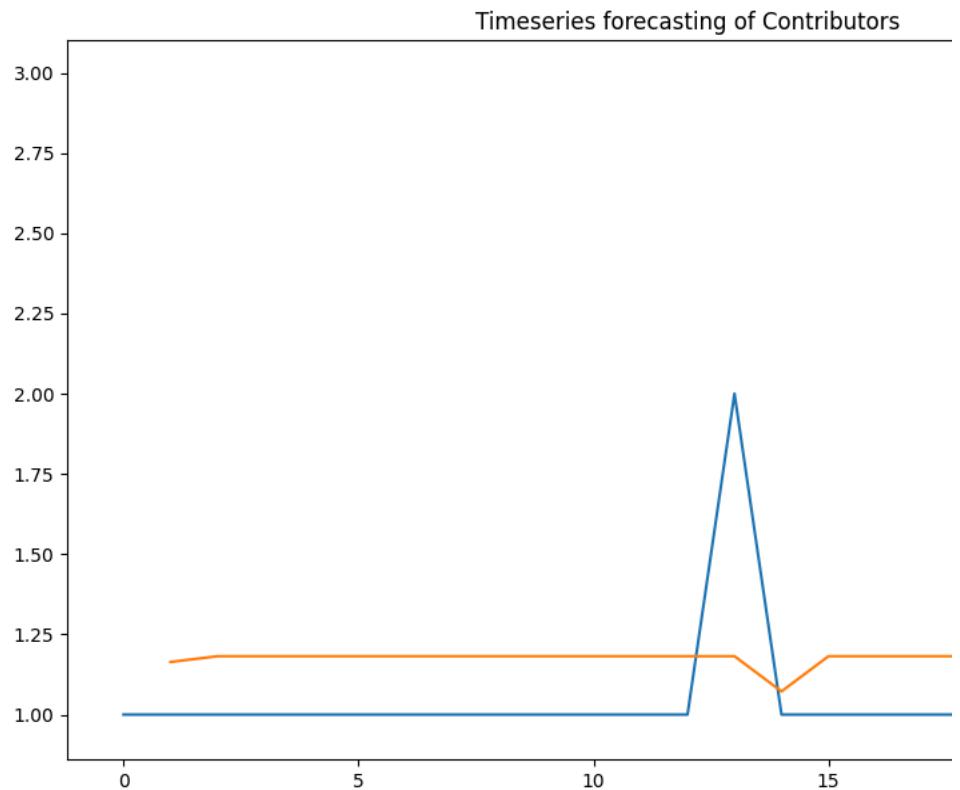
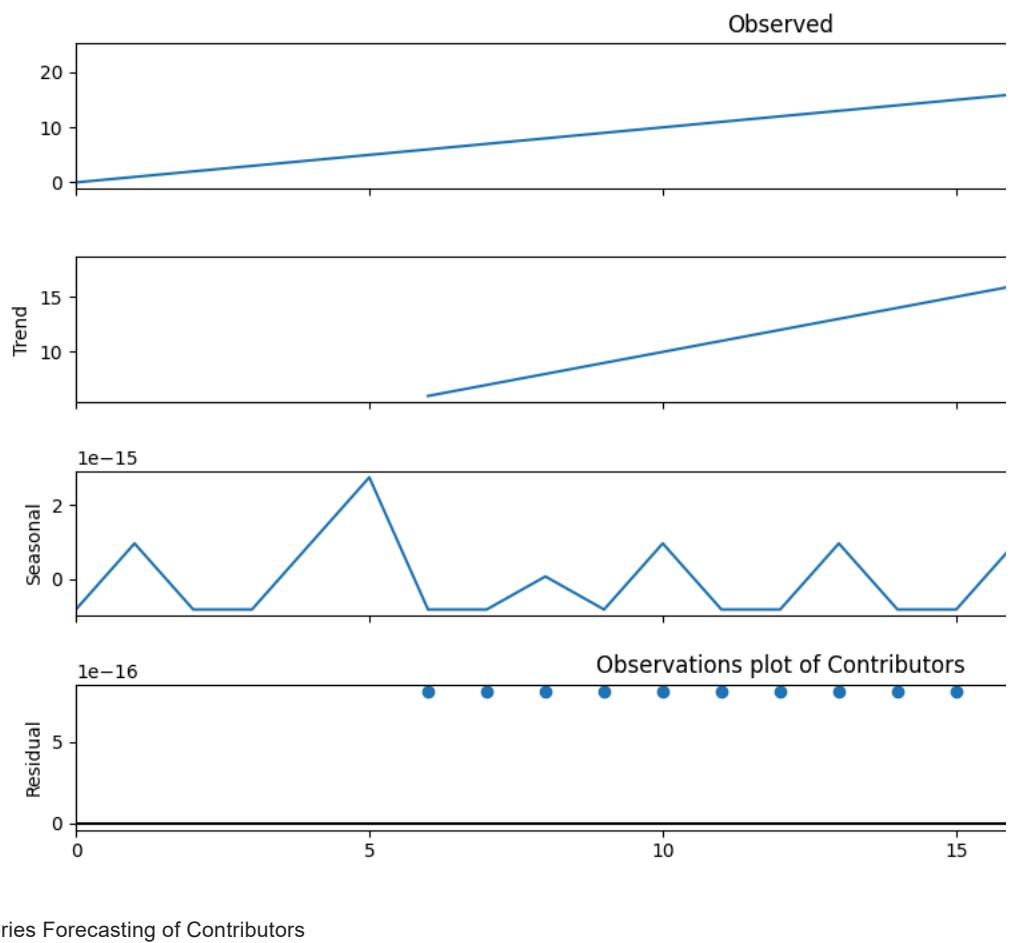
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

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Timeseries Forecasting of Contributors using Facebook/Prophet

Forecast of Contributors

Number of stars

Number of forks

LangChainai-Langchain

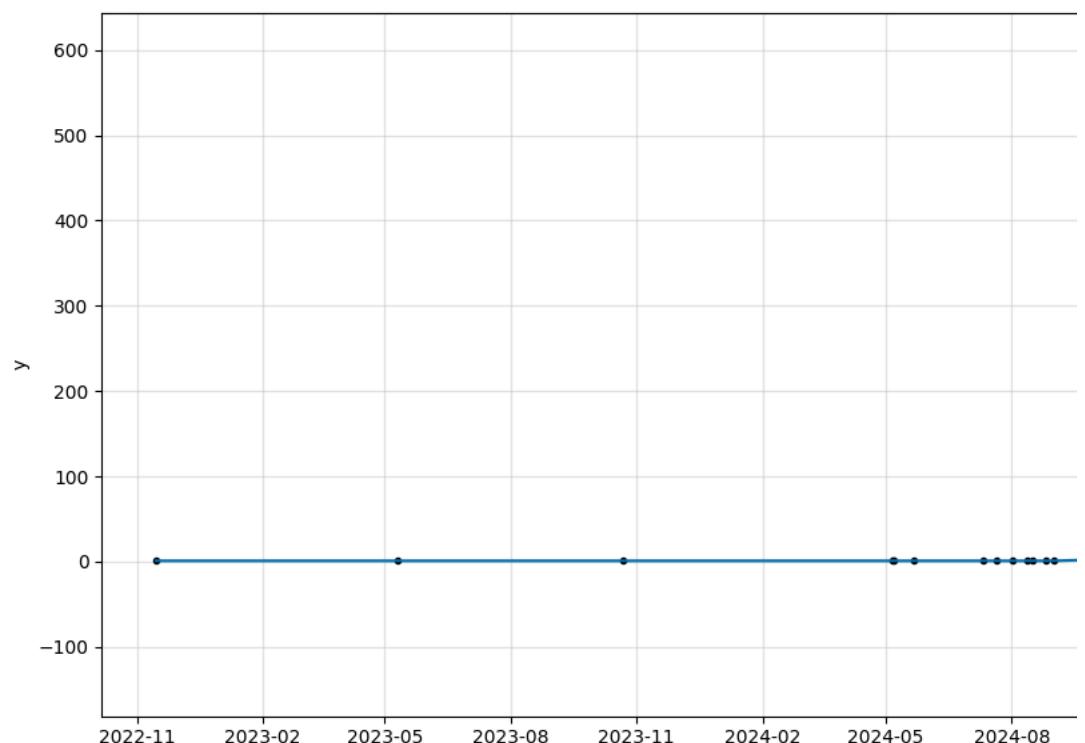
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

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Forecast Components of Contributors

Number of stars

Number of forks

LangChainai-Langchain

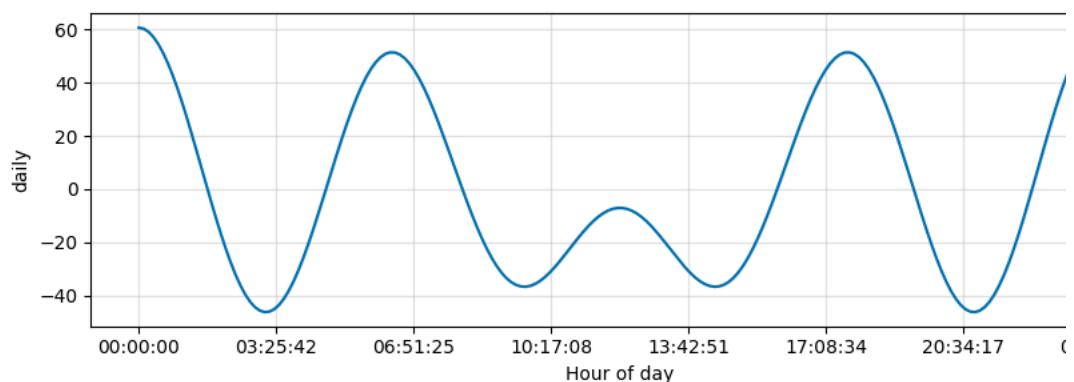
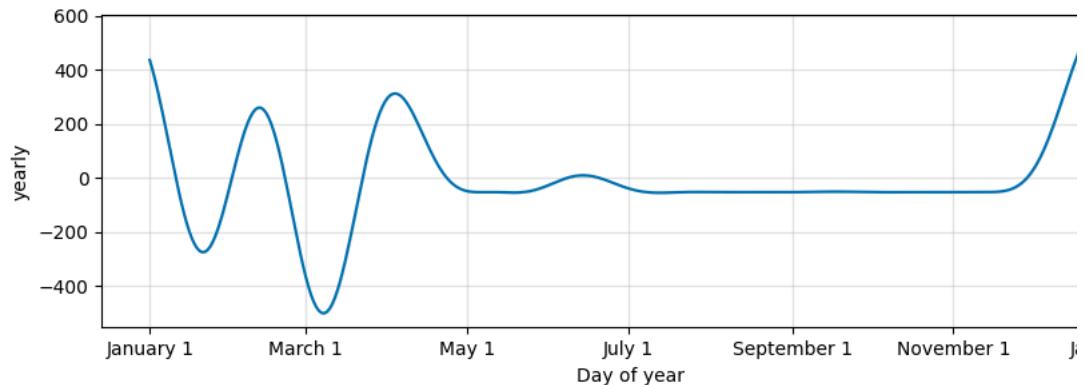
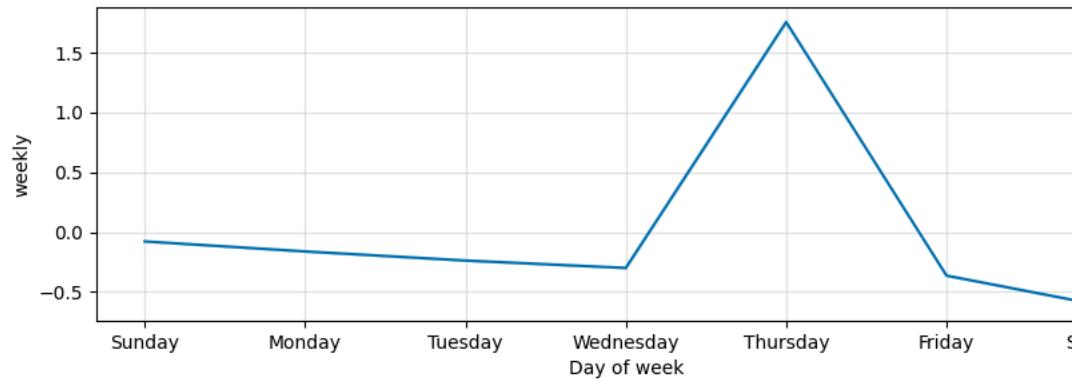
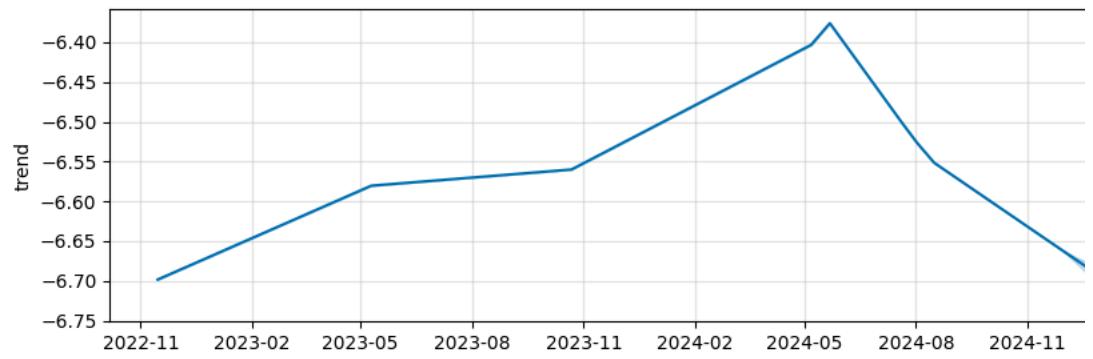
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

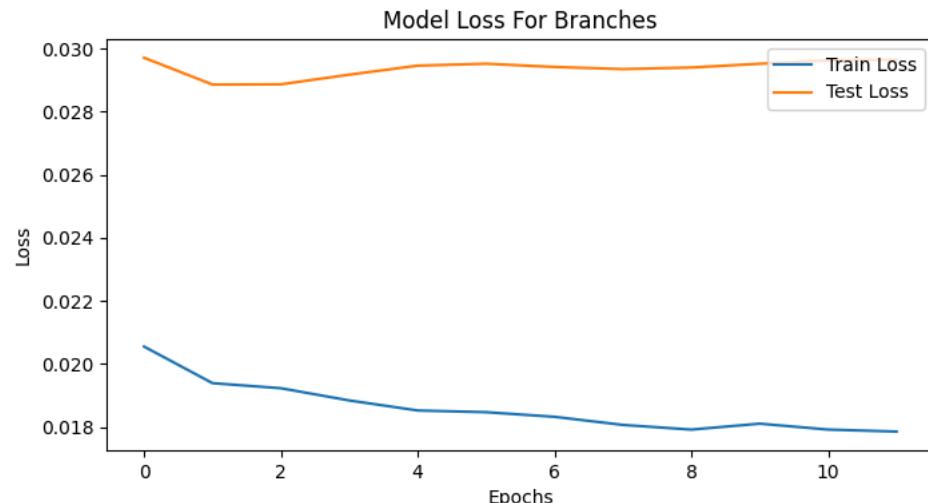
Pymilvus



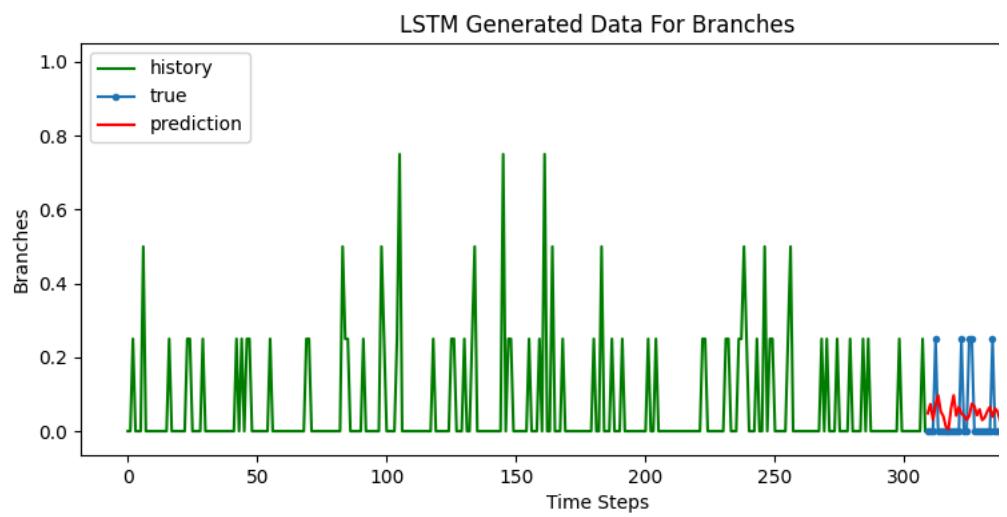
Timeseries Forecasting of Branches using Tensorflow and Keras LSTM

Model Loss for Branches

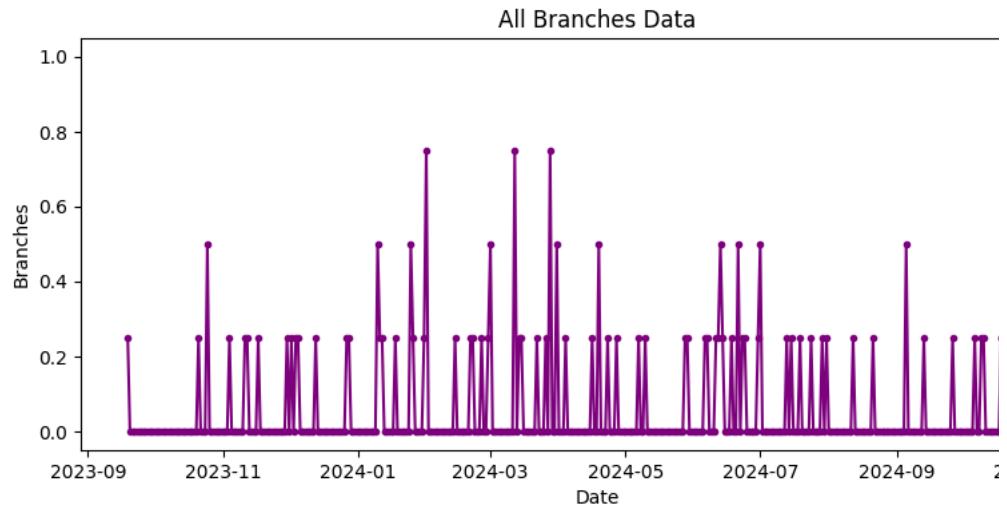
- Number of stars
- Number of forks
- LangChainai-Langchain
- LangChainai-Langgraph
- Microsoft-Autogen**
- Openai-Cookbook
- elasticsearch
- Pymilvus



LSTM Generated Data for Branches



All Issues Data for Branches



Timeseries Forecasting of Branches using StatsModel

Observation Graph of Branches

Number of stars

Number of forks

LangChainai-Langchain

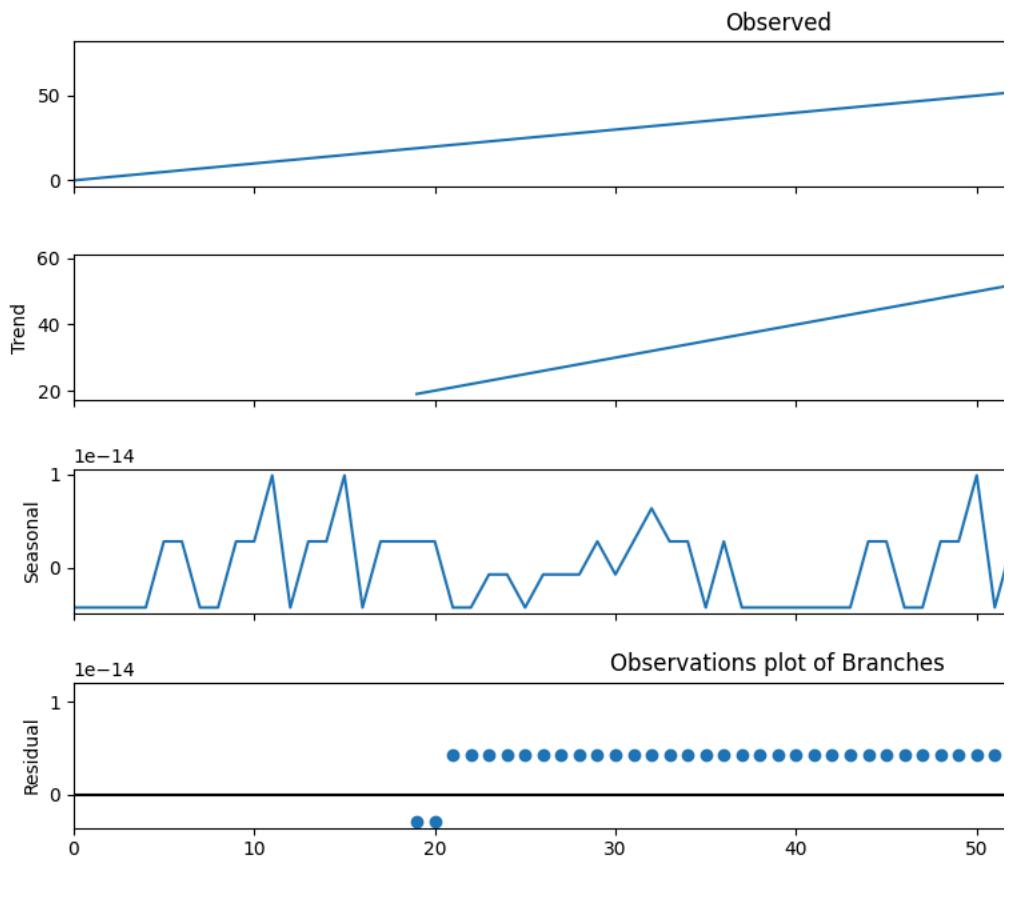
LangChainai-Langgraph

Microsoft-Autogen

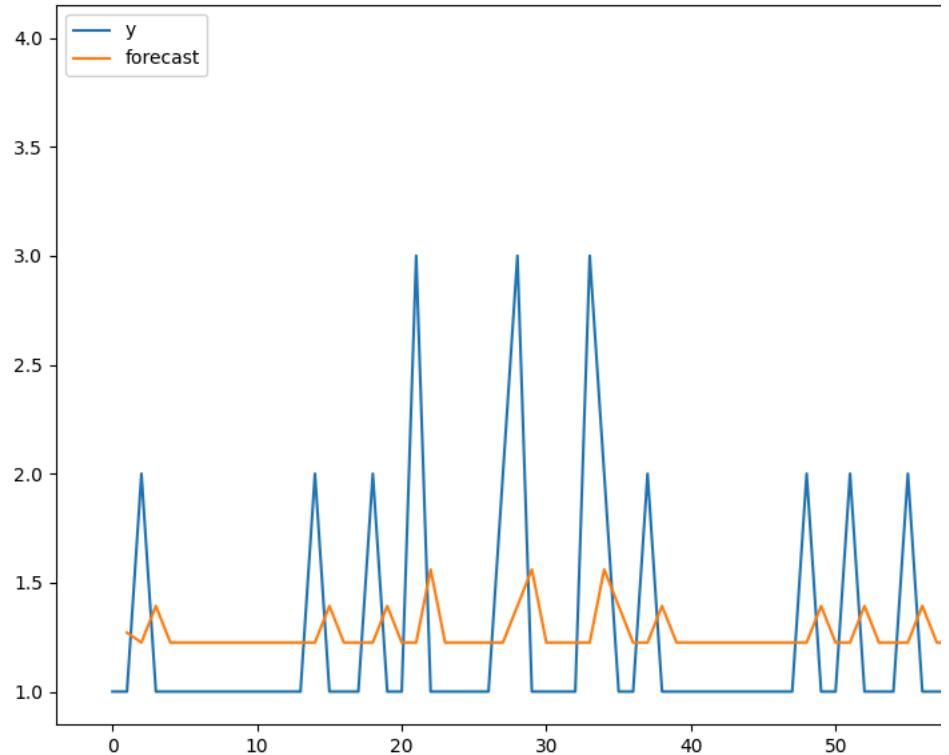
Openai-Cookbook

elasticsearch

Pymilvus



Timeseries forecasting of Branches

**Timeseries Forecasting of Branches using Facebook/Prophet**

Forecast of Branches

Number of stars

Number of forks

LangChainai-Langchain

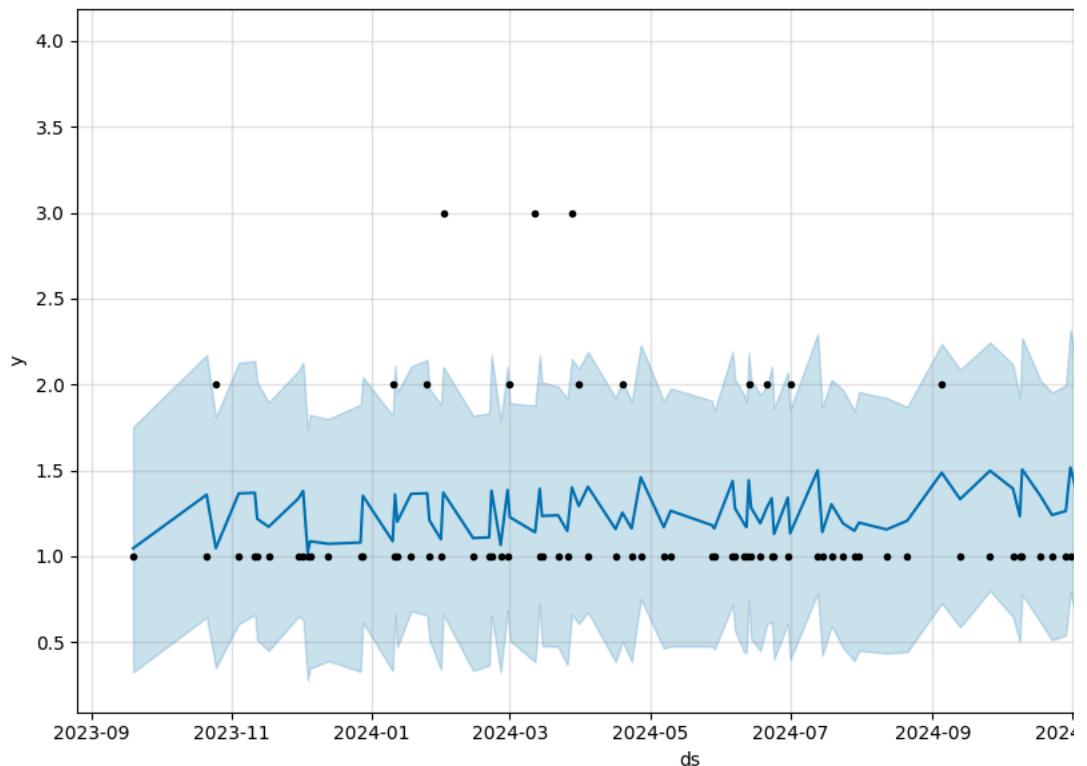
LangChainai-Langgraph

Microsoft-Autogen

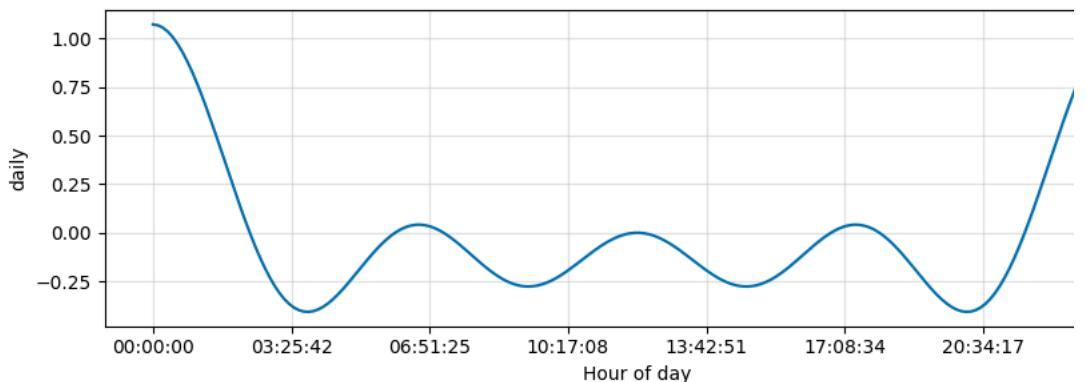
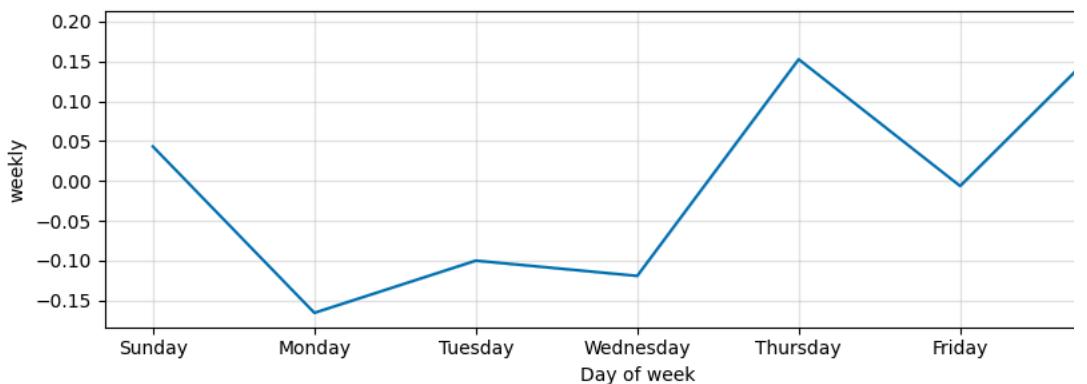
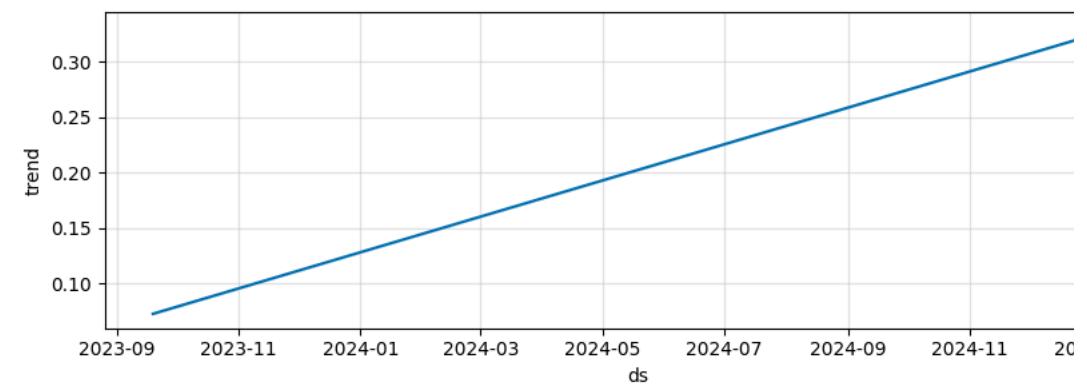
Openai-Cookbook

elasticsearch

Pymilvus



Forecast Components of Branches



Timeseries Forecasting

Number of stars

Number of forks

LangChainai-Langchain

LangChainai-Langgraph

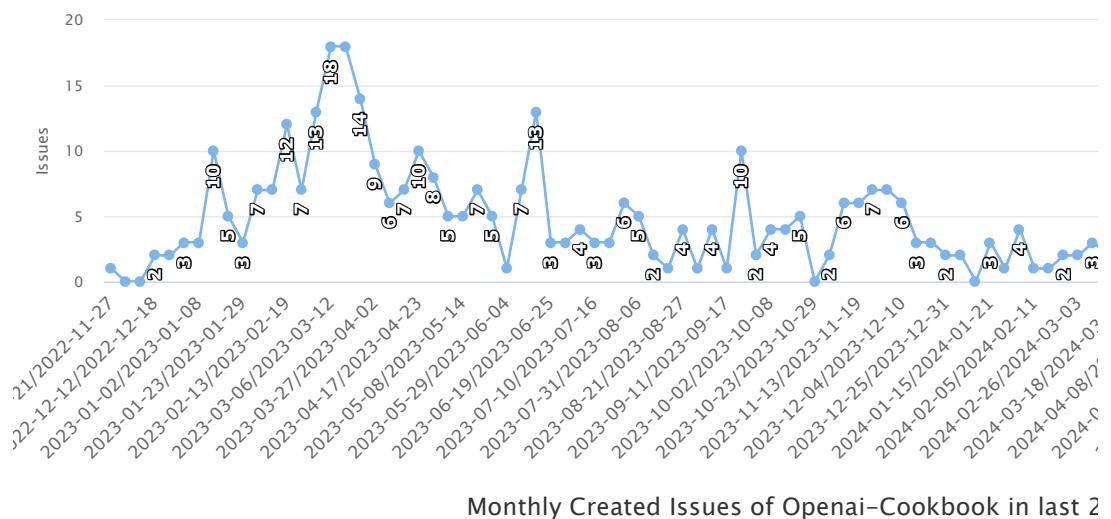
Microsoft-Autogen

Openai-Cookbook

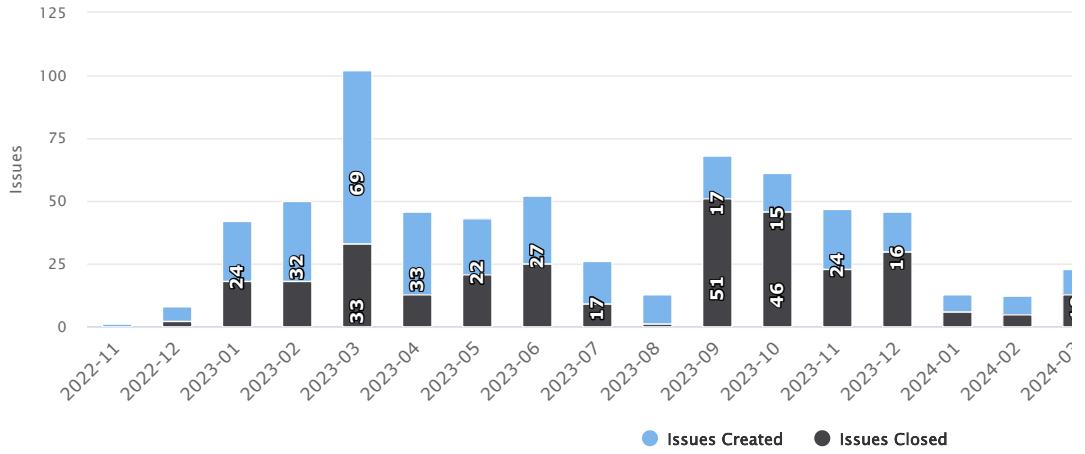
elasticsearch

Pymilvus

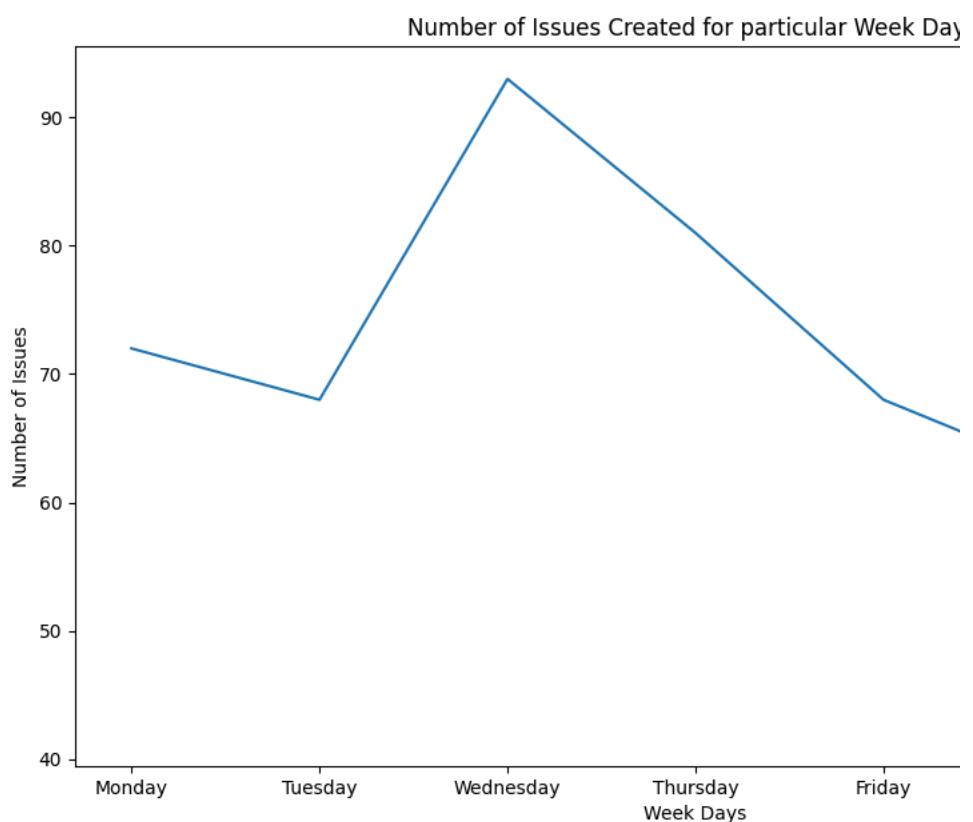
Issues of Openai-Cookbook in last 2 years



Created and Closed Issues of Openai-Cookbook in last



The day of the week maximum number of issues created



The day of the week maximum number of issues Closed

Number of stars

Number of forks

LangChainai-Langchain

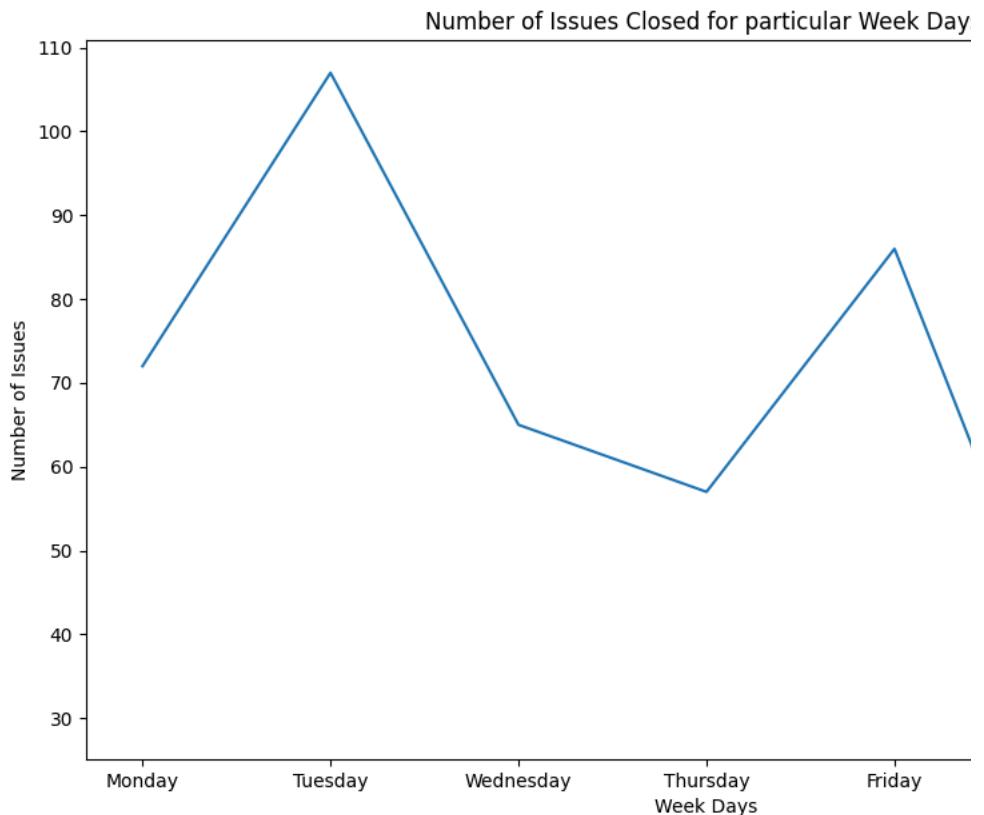
LangChainai-Langgraph

Microsoft-Autogen

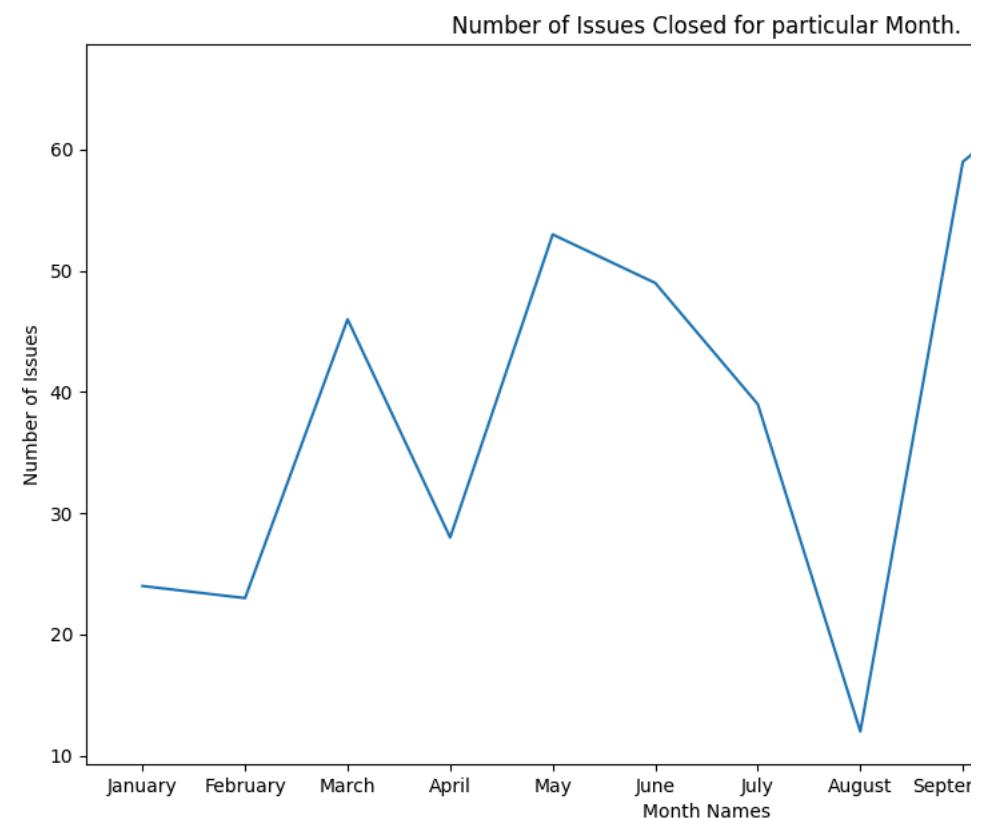
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The month of the year that has maximum number of issues closed



Timeseries Forecasting of Created Issues using Tensorflow and Keras LSTM

Model Loss for Created Issues

Number of stars

Number of forks

LangChainai-Langchain

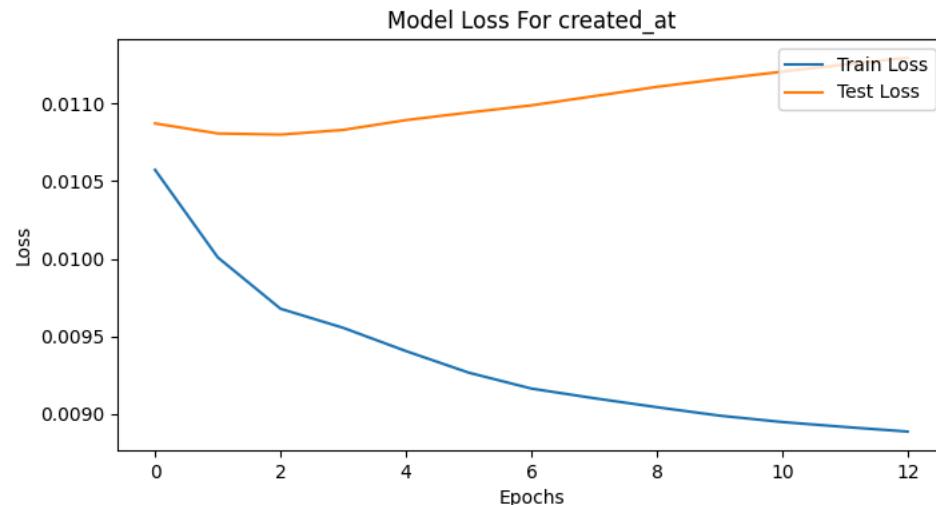
LangChainai-Langgraph

Microsoft-Autogen

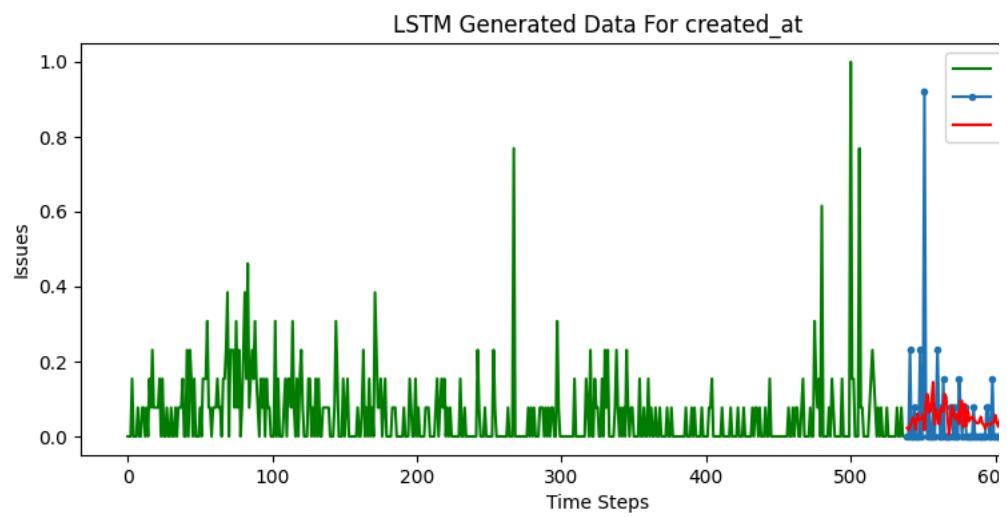
Openai-Cookbook

elasticsearch

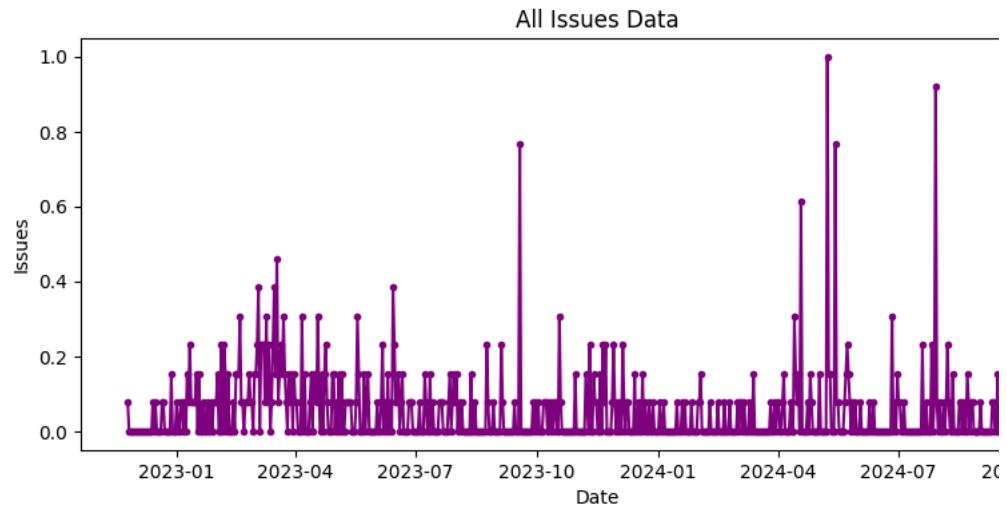
Pymilvus



LSTM Generated Data for Created Issues



All Issues Data for Created Issues



Timeseries Forecasting of Closed Issues using Tensorflow and Keras LSTM |

Model Loss for Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

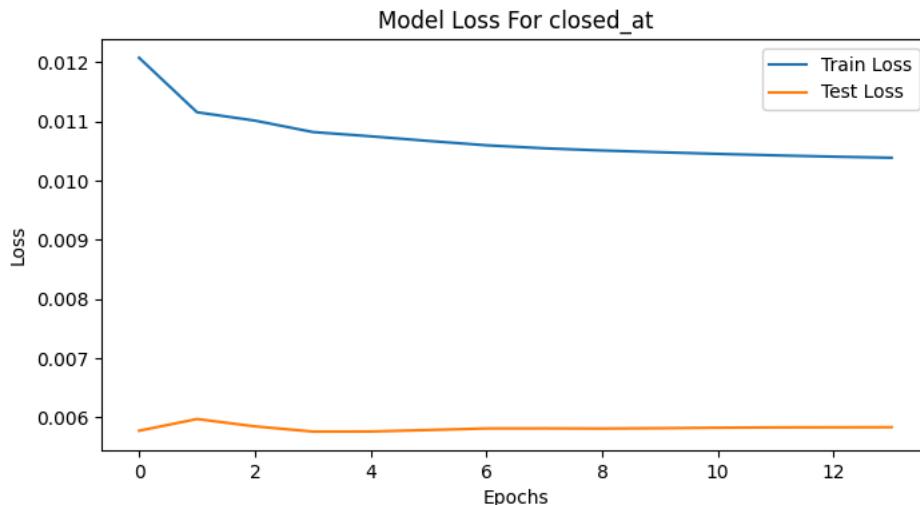
LangChainai-Langgraph

Microsoft-Autogen

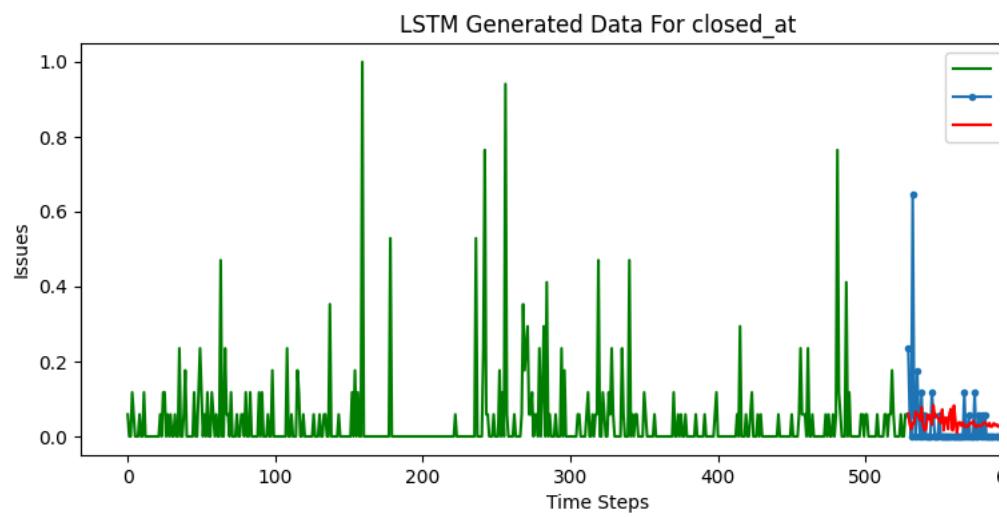
Openai-Cookbook

elasticsearch

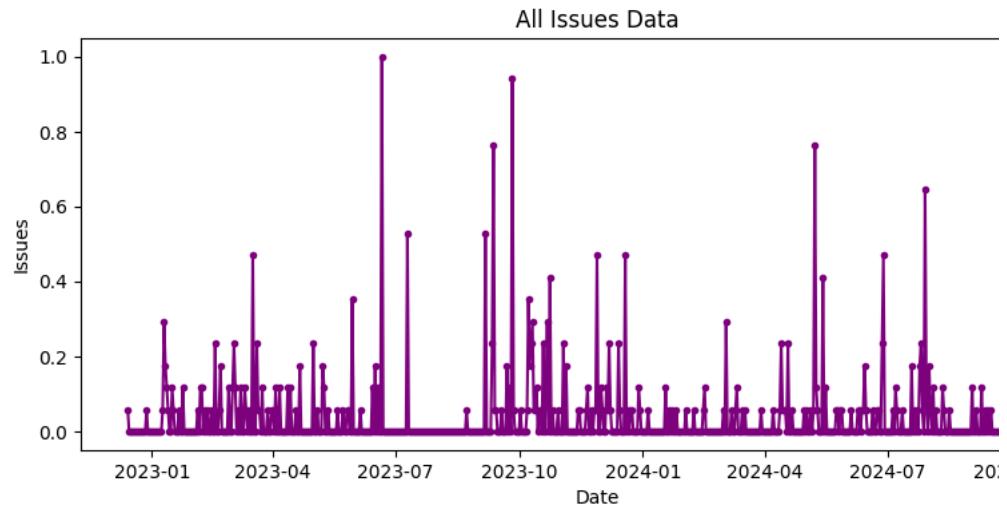
Pymilvus



LSTM Generated Data for Closed Issues



All Issues Data for Closed Issues



Timeseries Forecasting of Pull Requests using Tensorflow and Keras LSTM t

Model Loss for Pull Requests

Number of stars

Number of forks

LangChainai-Langchain

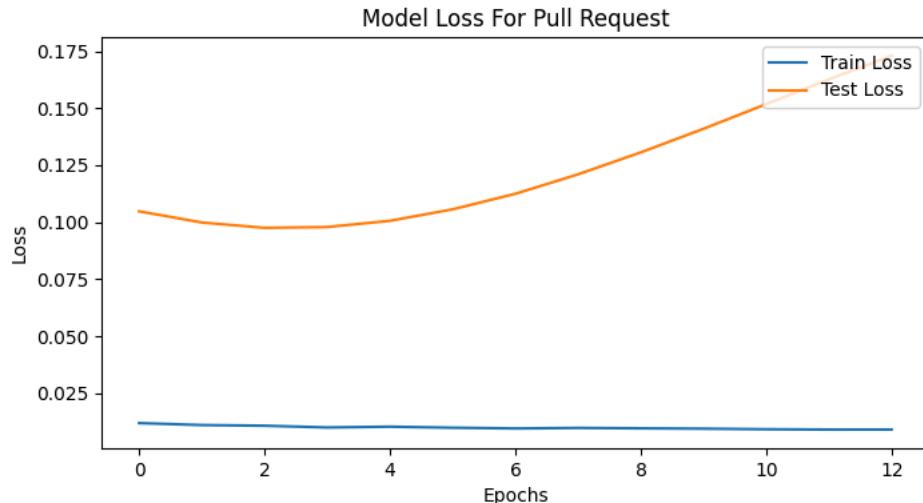
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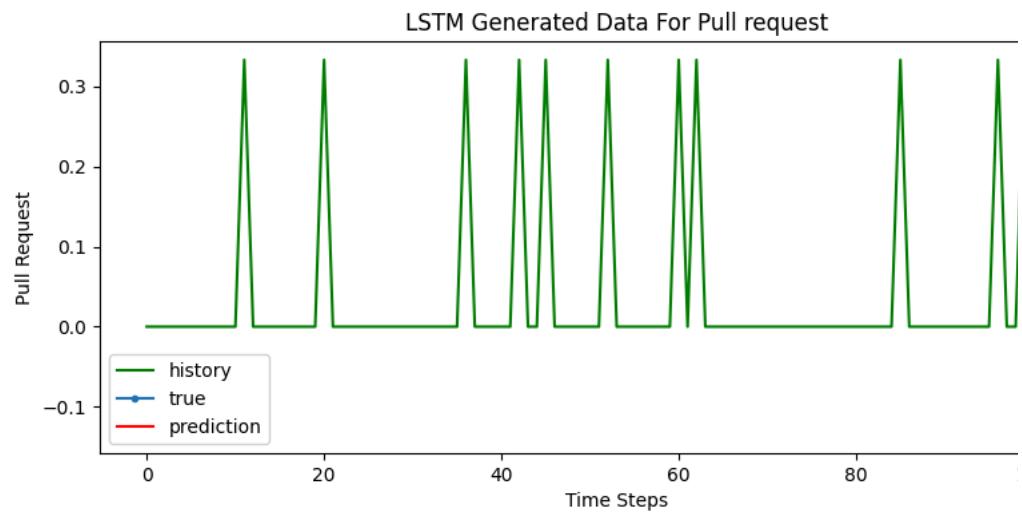
Openai-Cookbook

elasticsearch

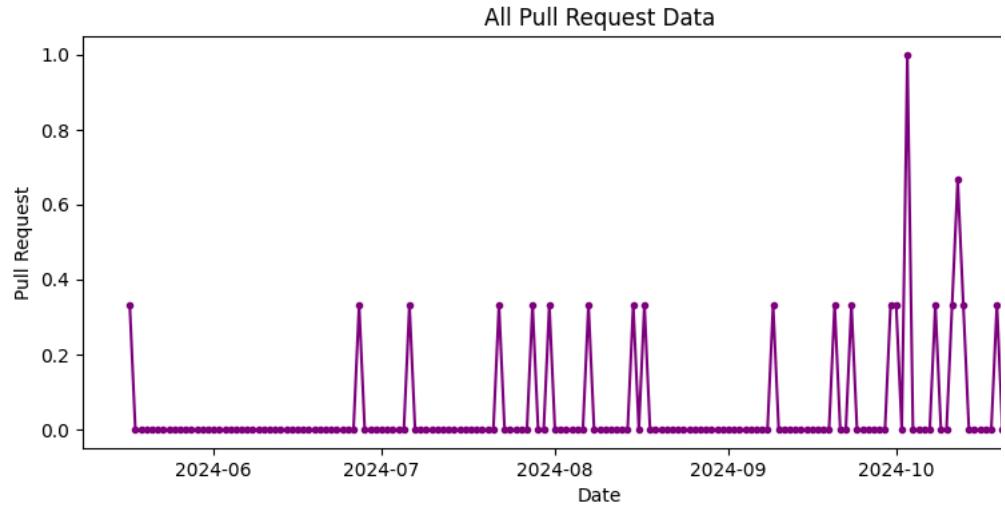
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LSTM Generated Data for Pull Requests



All Issues Data for Pull Requests



Timeseries Forecasting of Commits using Tensorflow and Keras LSTM based

Model Loss for Commits

Number of stars

Number of forks

LangChainai-Langchain

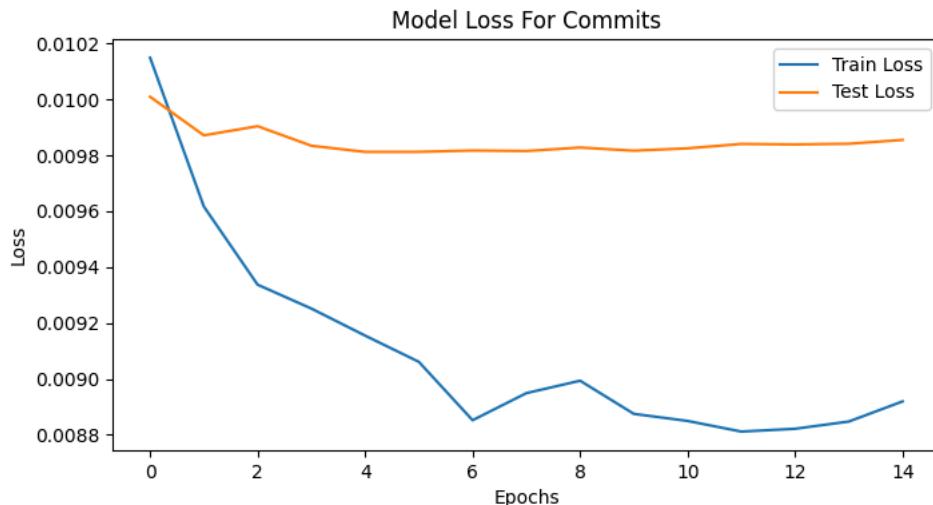
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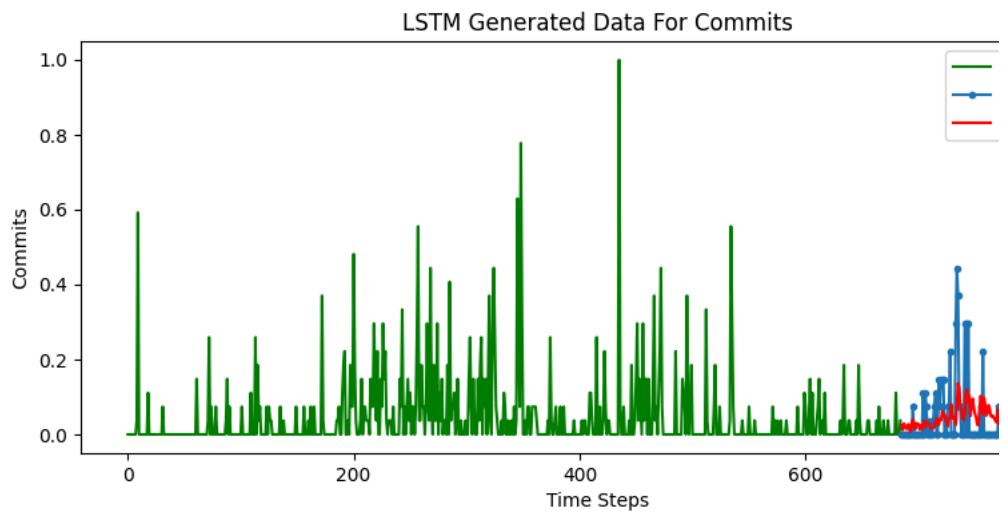
Openai-Cookbook

elasticsearch

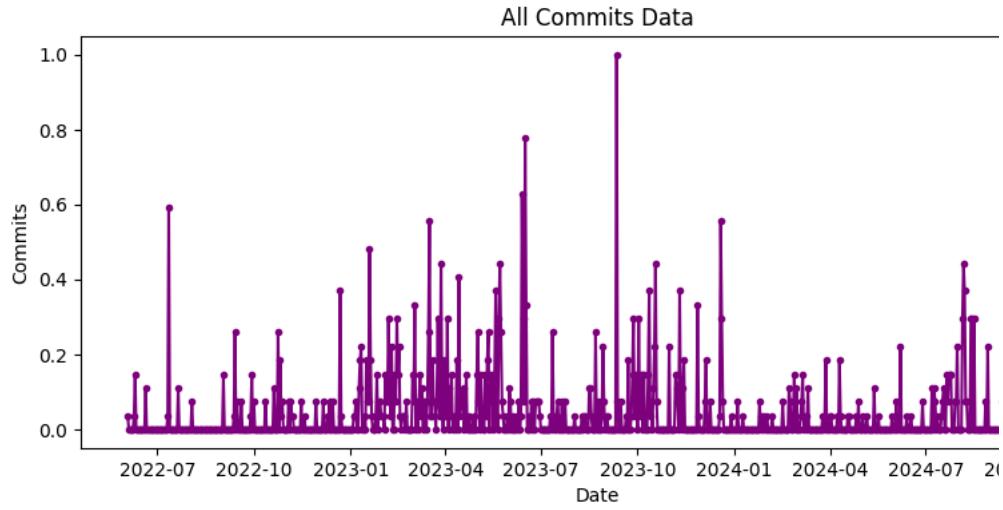
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LSTM Generated Data for Commits



All Issues Data for Commits



Timeseries Forecasting of Created Issues using Facebook/Prophet based on Forecast of Created Issues

Number of stars

Number of forks

LangChainai-Langchain

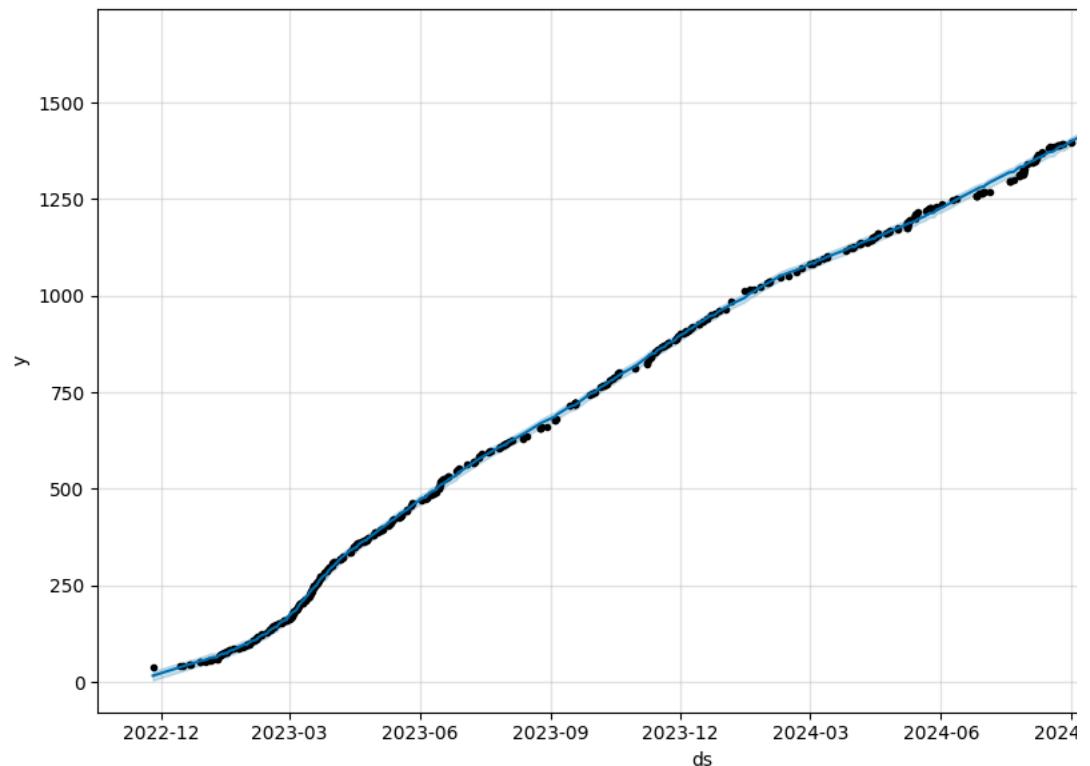
LangChainai-Langgraph

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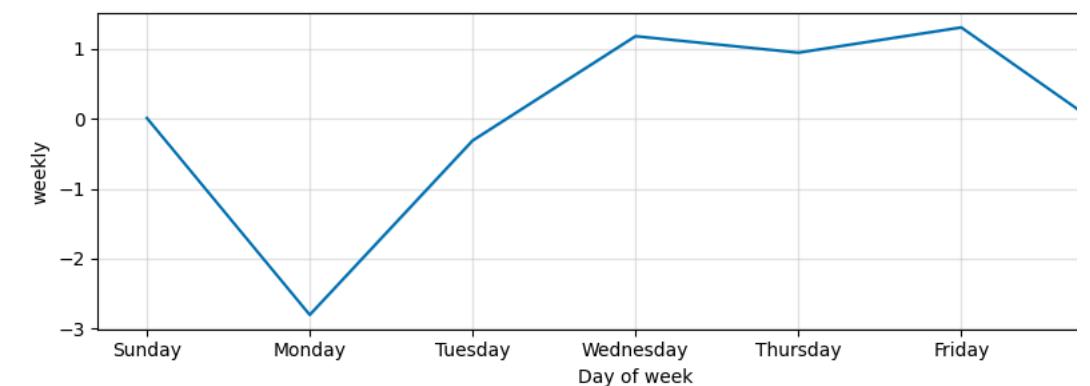
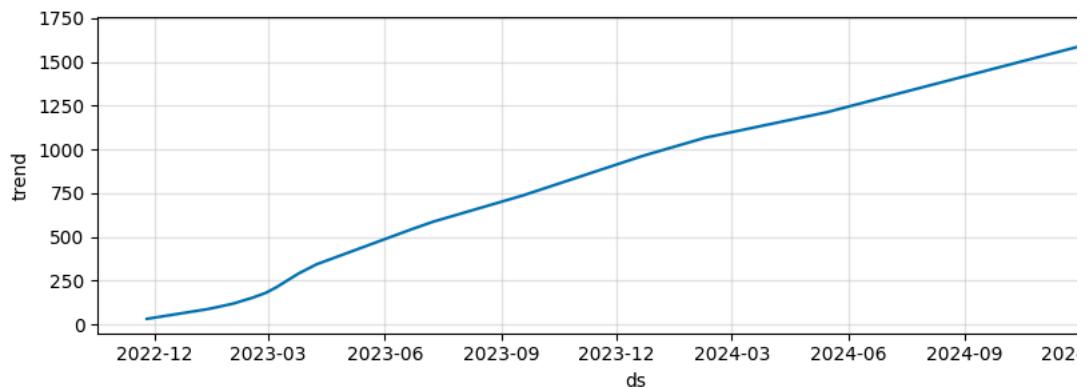
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Forecast Components of Created Issues



Timeseries Forecasting of Closed Issues using Facebook/Prophet based on |

Forecast of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

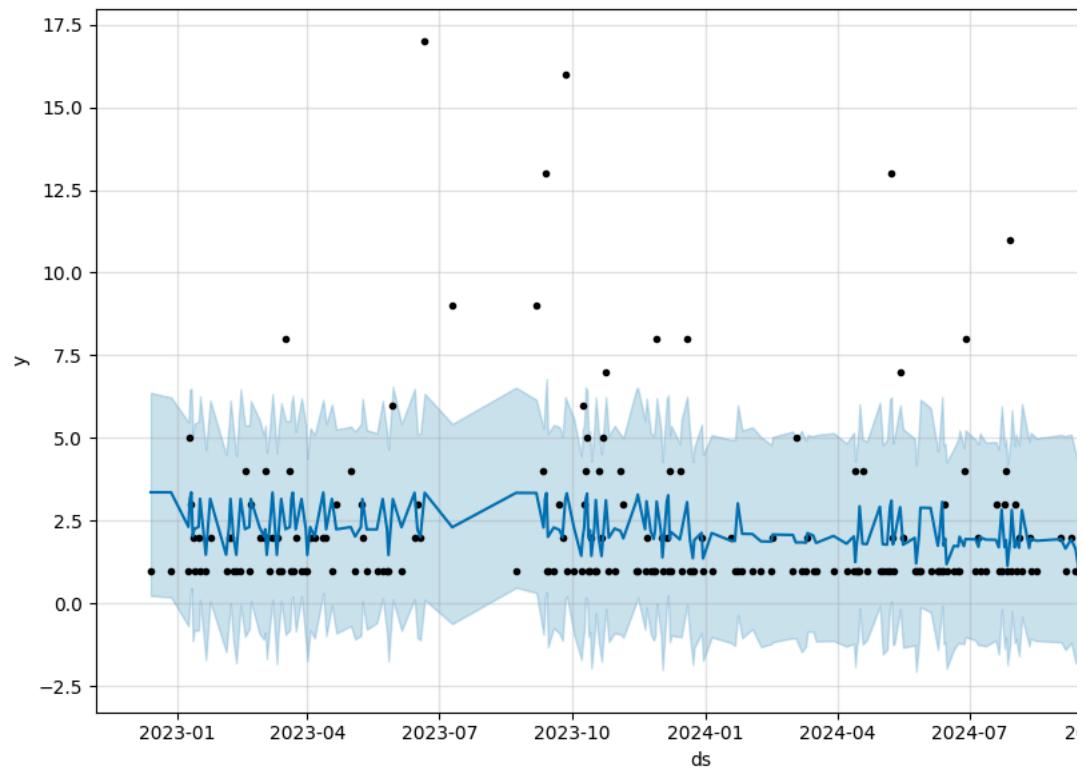
LangChainai-Langgraph

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Forecast Components of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

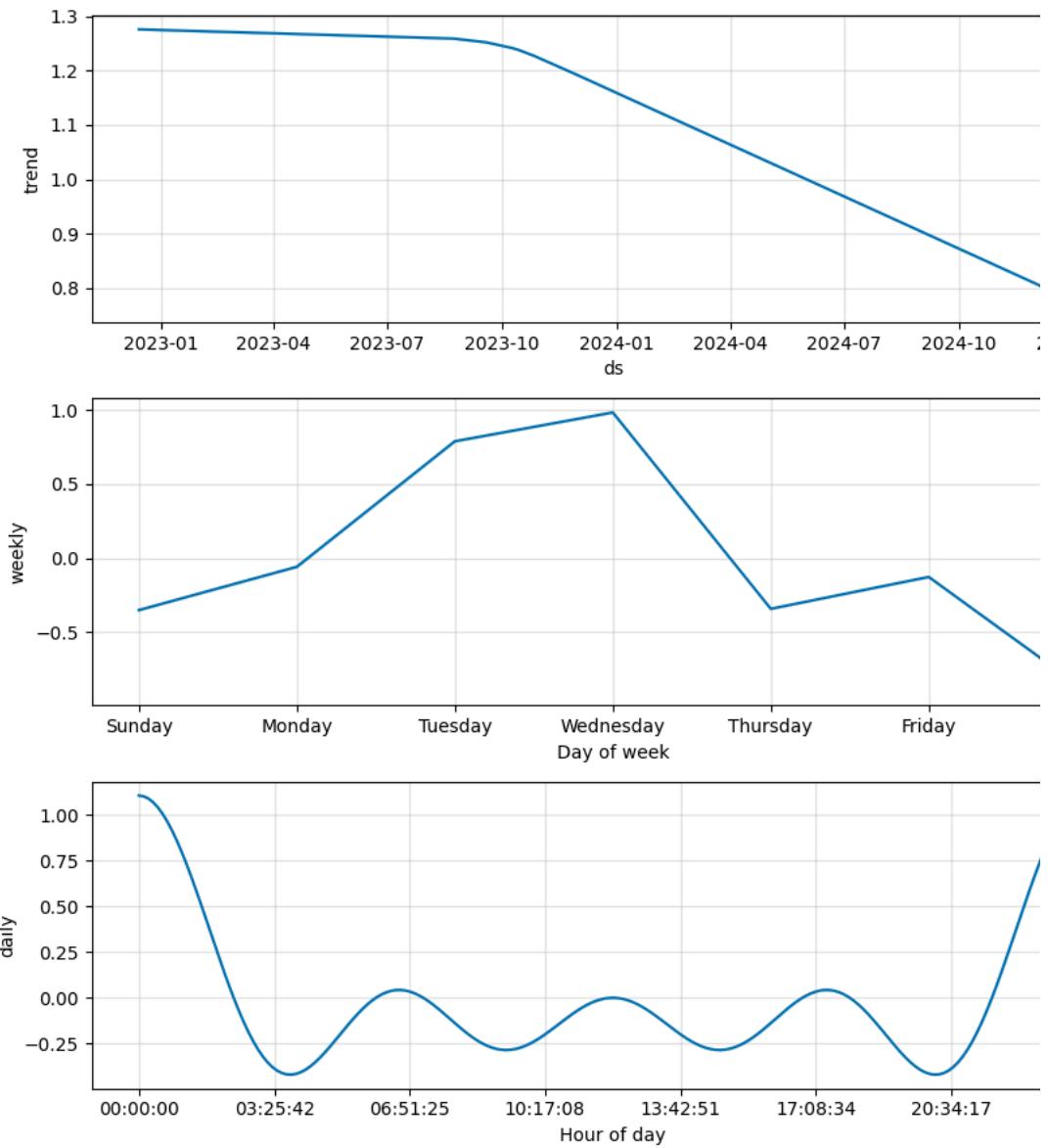
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Timeseries Forecasting of Pull Request using Facebook/Prophet based on past
Forecast of Pull Request

Number of stars

Number of forks

LangChainai-Langchain

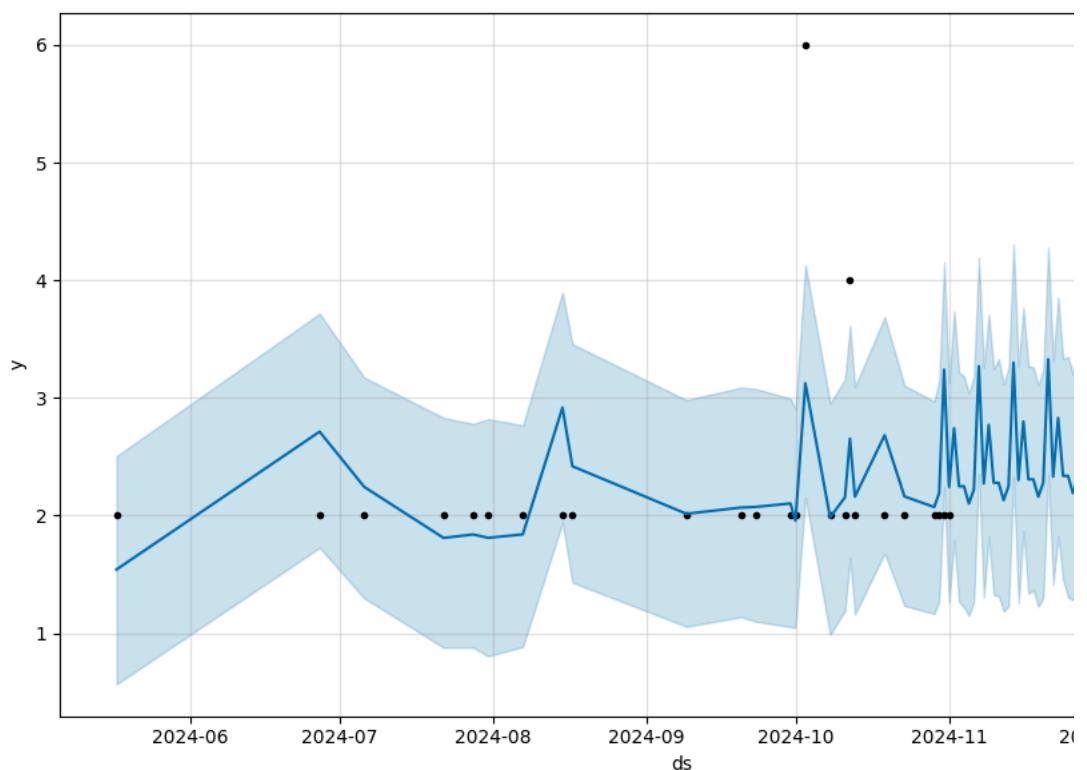
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Microsoft-Autogen

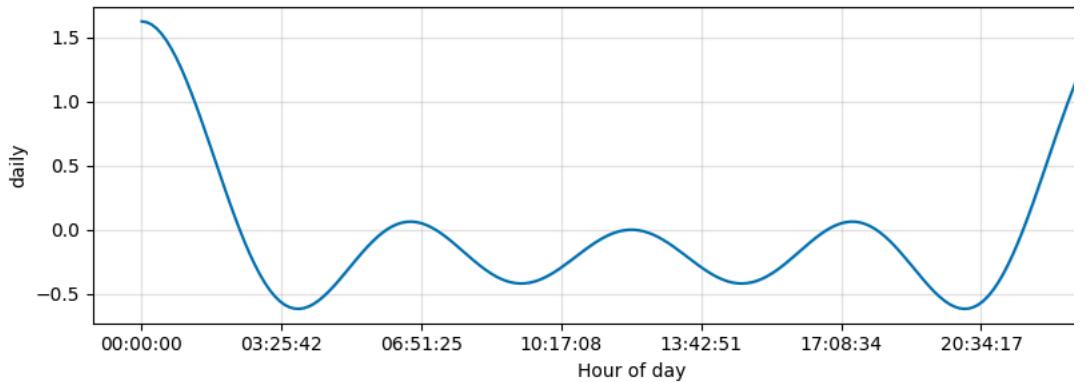
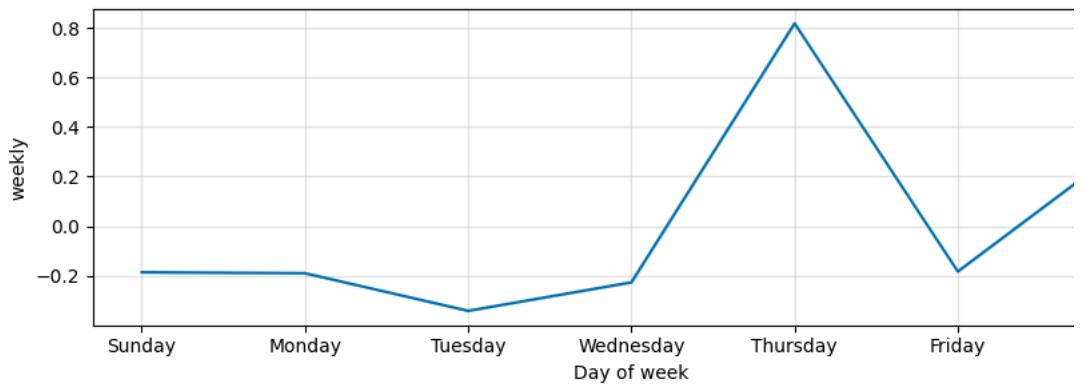
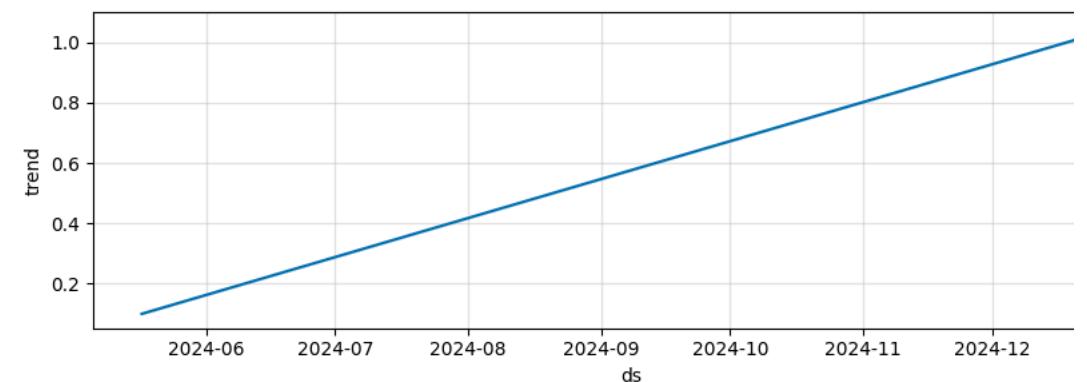
Openai-Cookbook

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Forecast Components of Pull Request



Timeseries Forecasting of Commits using Facebook/Prophet based on past r

Forecast of Commits

Number of stars

Number of forks

LangChainai-Langchain

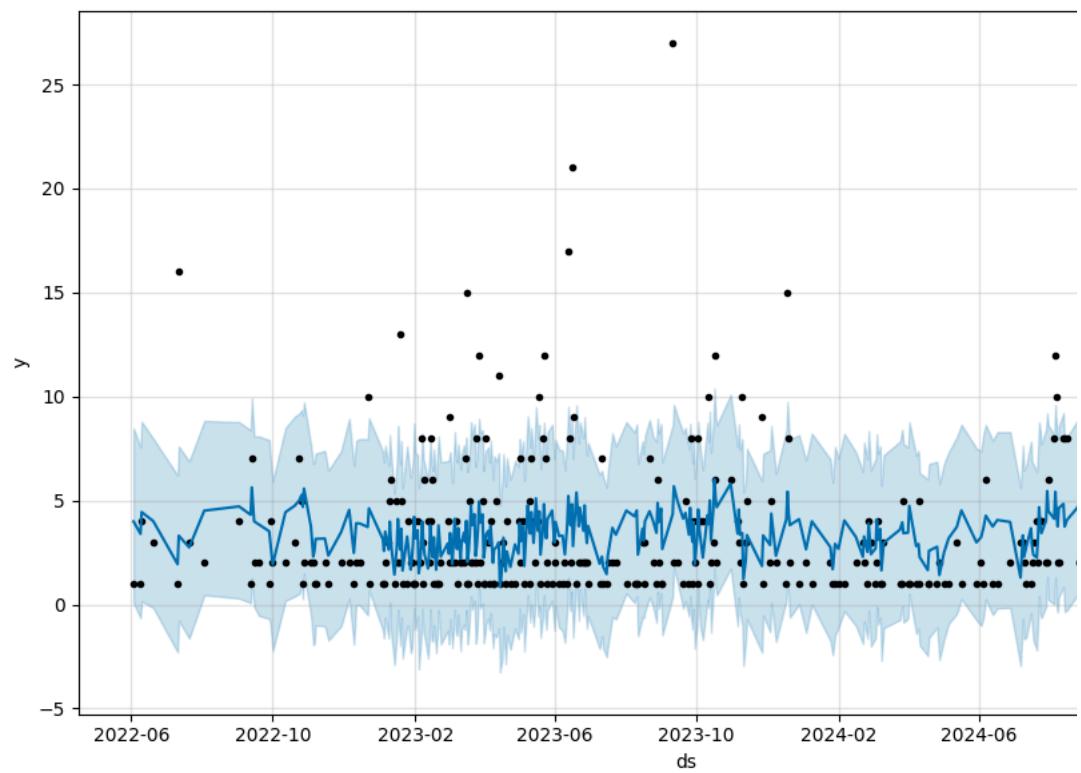
LangChainai-Langgraph

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Forecast Components of Commits

Number of stars

Number of forks

LangChainai-Langchain

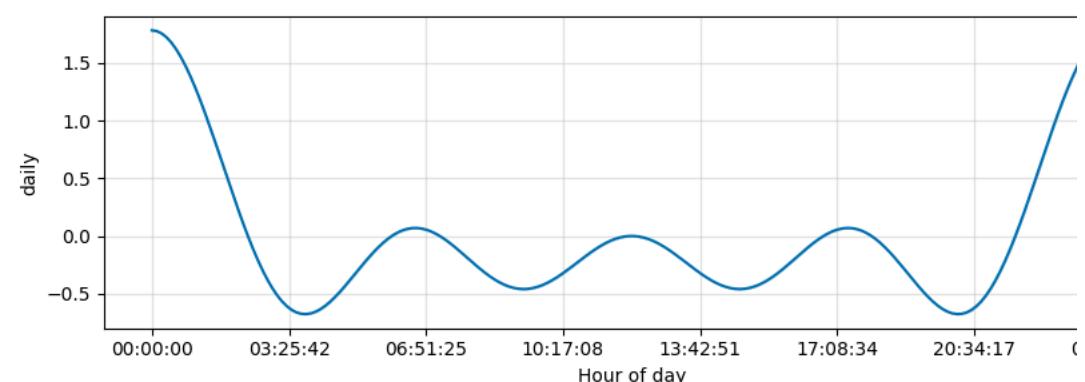
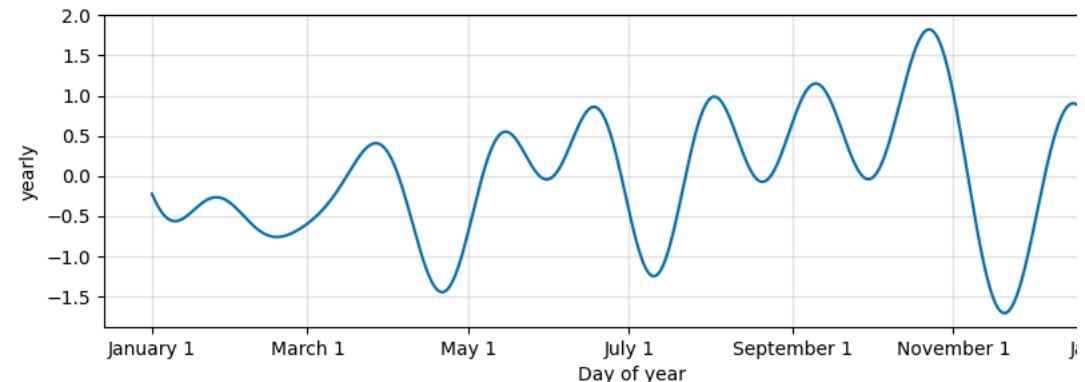
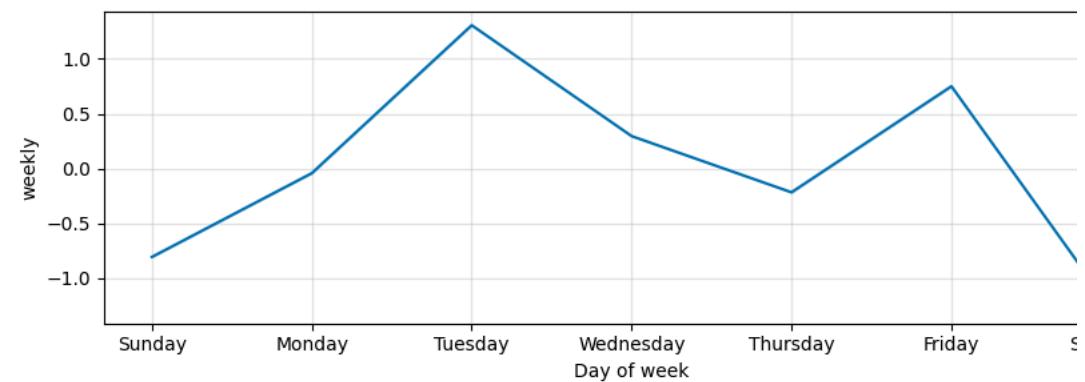
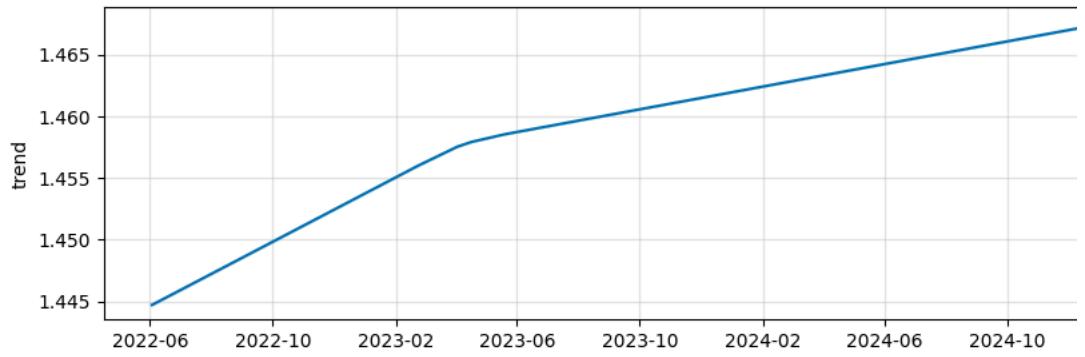
LangChainai-Langgraph

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Timeseries Forecasting of Created Issues using StatsModel based on past metrics

Observation Graph of Created Issues

Number of stars

Number of forks

LangChainai-Langchain

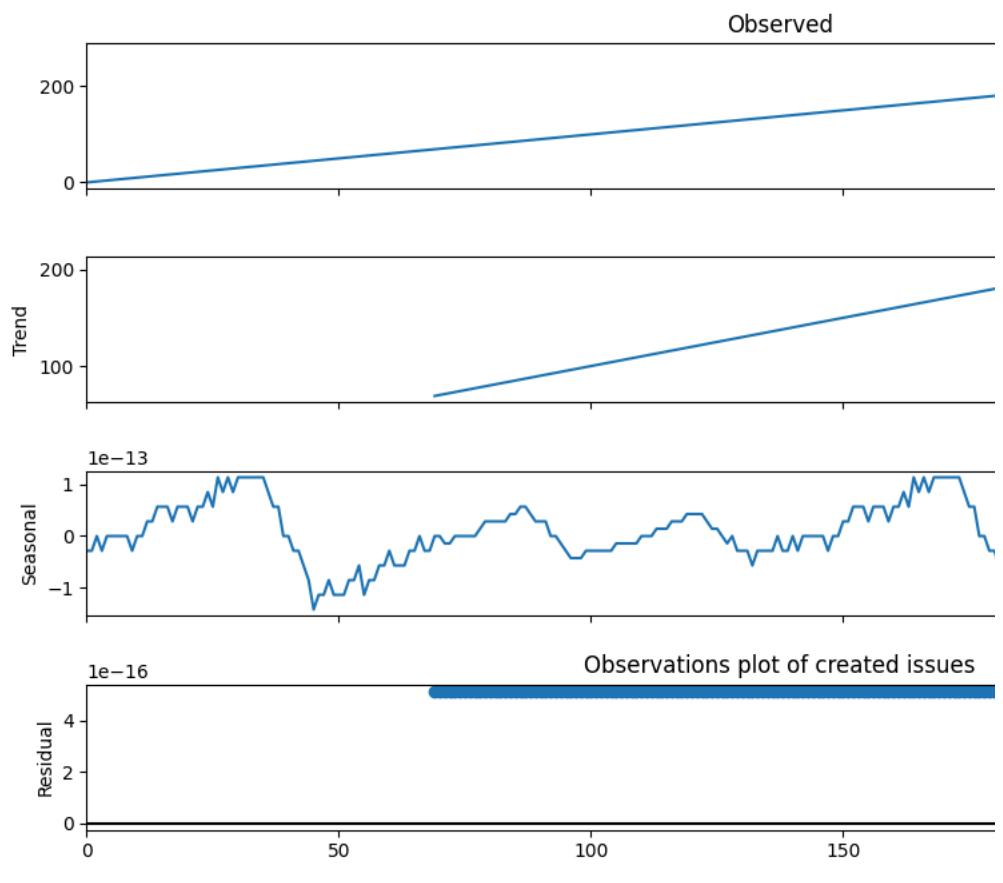
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

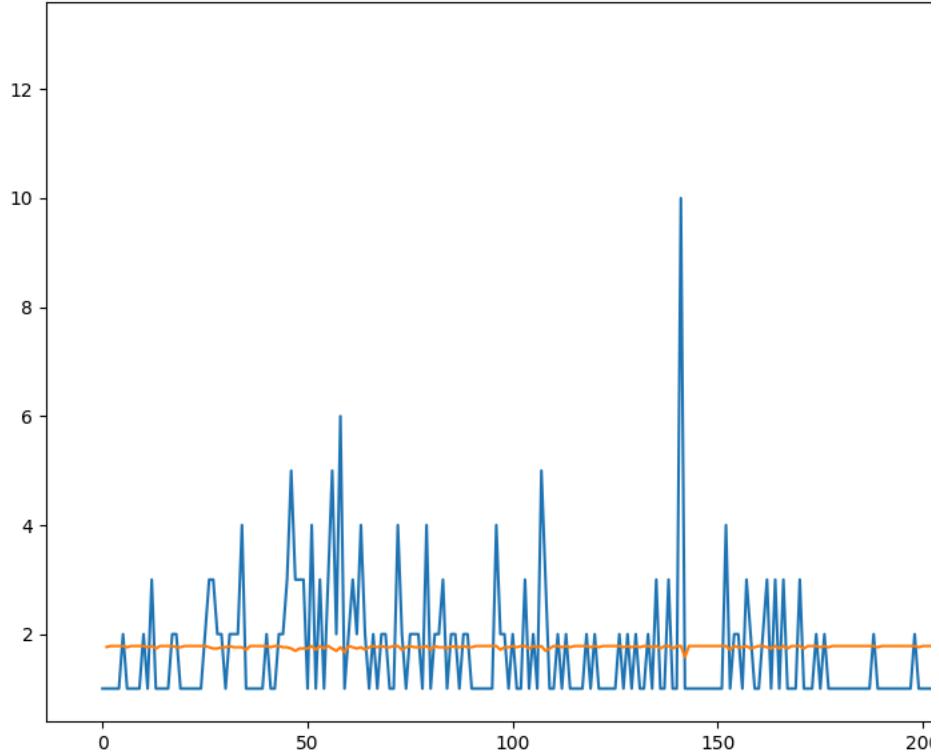
elasticsearch

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Time Series Forecasting of Created Issues

Timeseries forecasting of created issues

**Timeseries Forecasting of Closed Issues using StatsModel based on past metrics**

Observation Graph of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

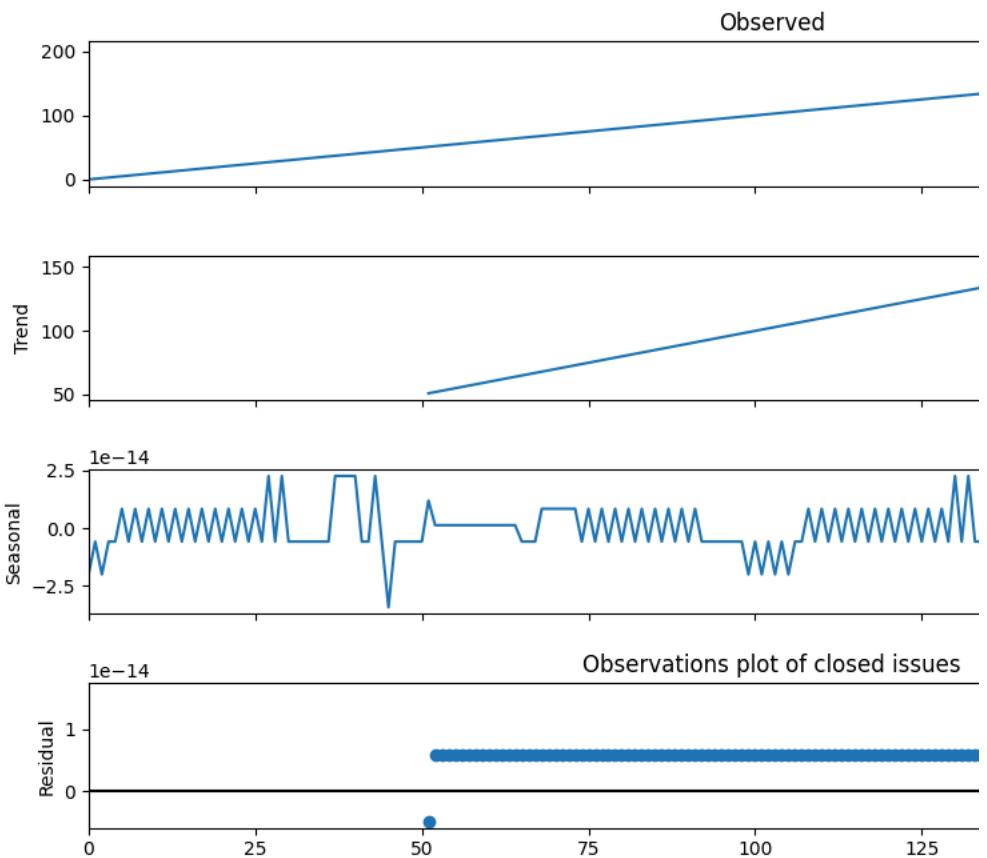
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

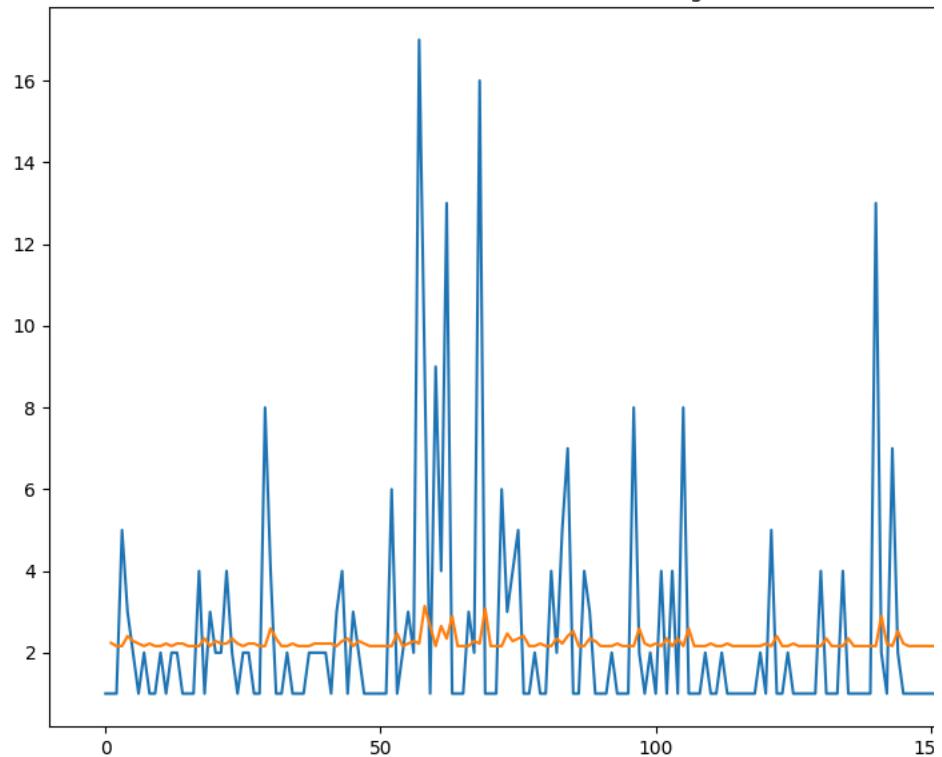
elasticsearch

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Time Series Forecasting of Closed Issues

Observations plot of closed issues



Timeseries Forecasting of Pull Request Issues using StatsModel based on past data

Observation Graph of Pull Request Issues

Number of stars

Number of forks

LangChainai-Langchain

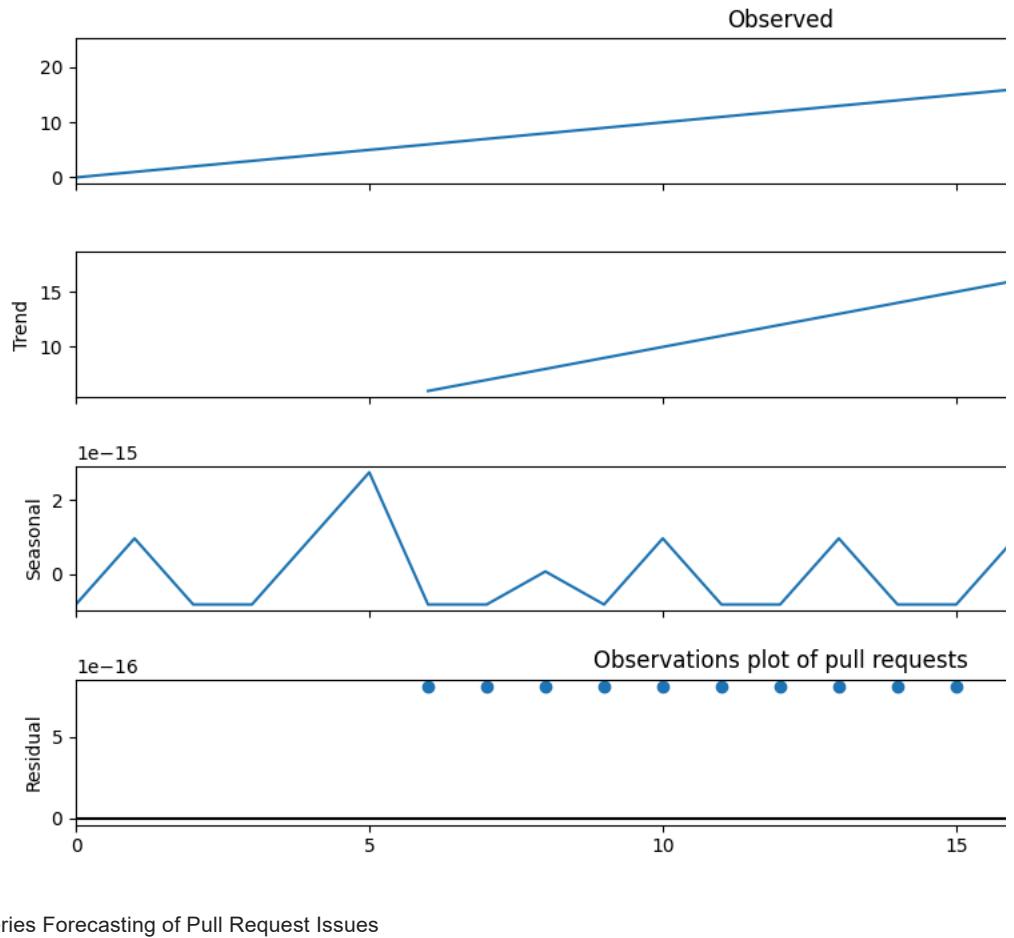
LangChainai-Langgraph

Microsoft-Autogen

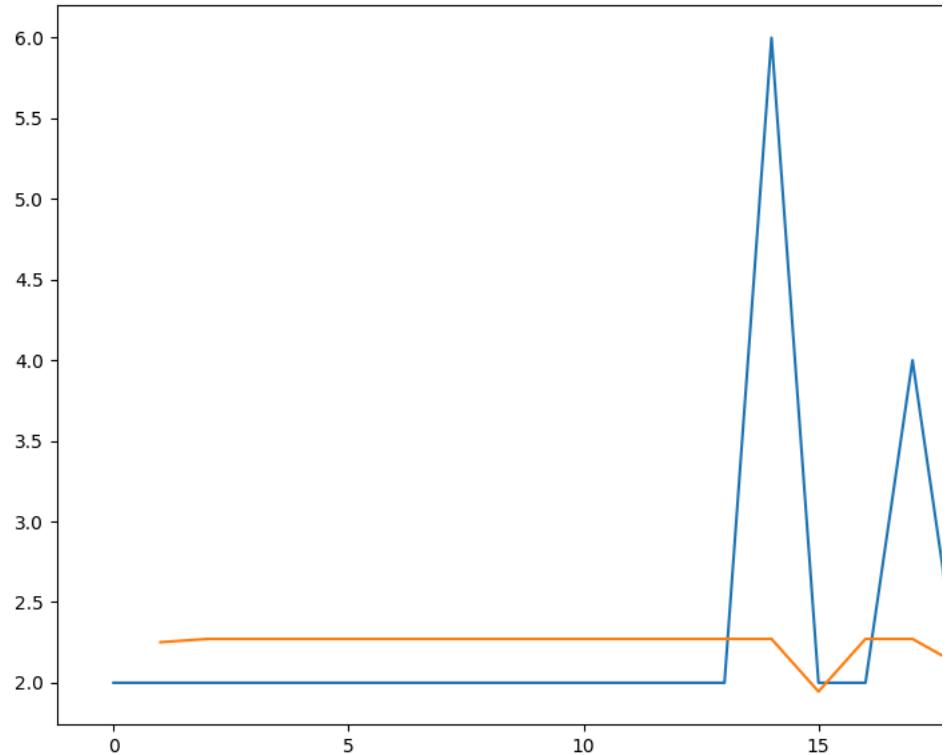
Openai-Cookbook

elasticsearch

Pymilvus



Timeseries forecasting of pull requests



Timeseries Forecasting of Commits Issues using StatsModel based on past r

Observation Graph of Commits Issues

Number of stars

Number of forks

LangChainai-Langchain

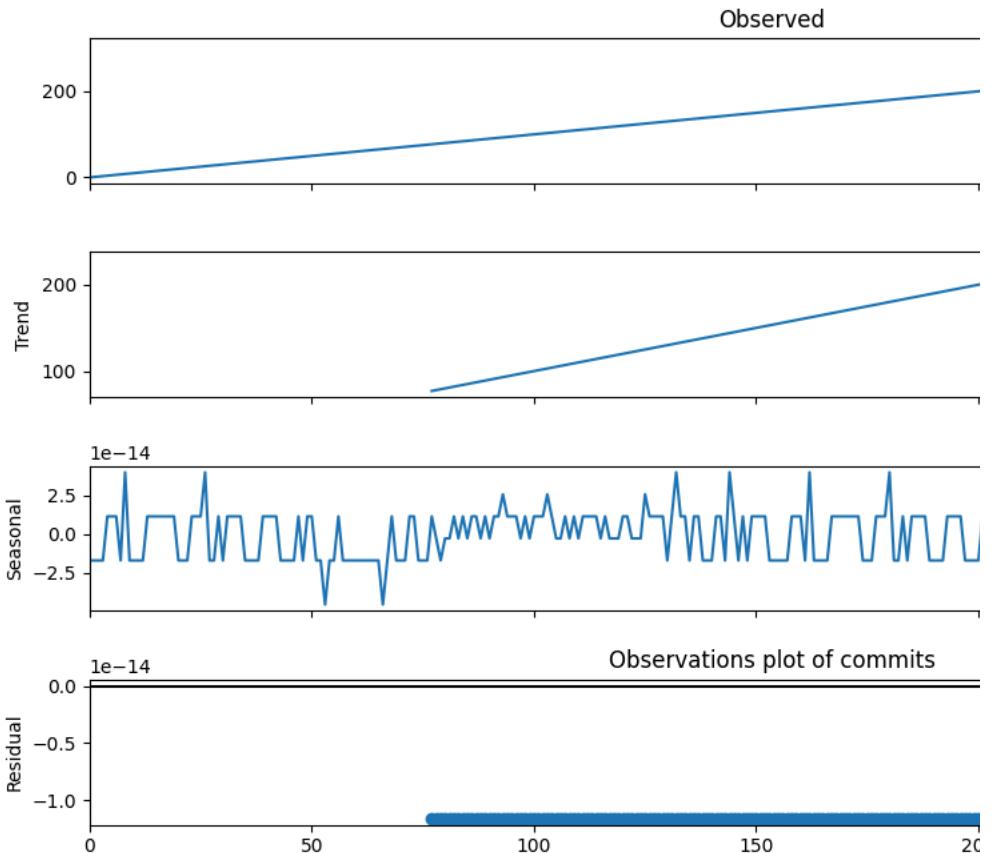
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

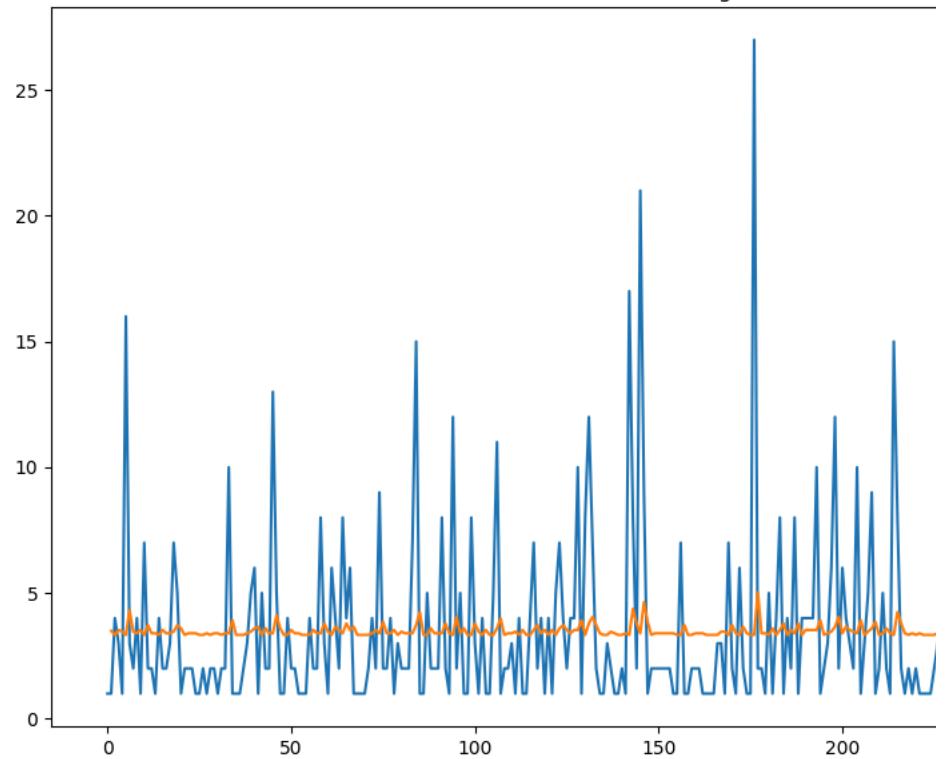
elasticsearch

Pymilvus



Time Series Forecasting of Commits Issues

Timeseries forecasting of commits

**Timeseries Forecasting of Release using Tensorflow and Keras LSTM**

No Release Data available for the repository

Timeseries Forecasting of Release using StatsModel

No Release Data available for the repository

Timeseries Forecasting of Release using Facebook/Prophet

Number of stars

Number of forks

LangChainai-Langchain

LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

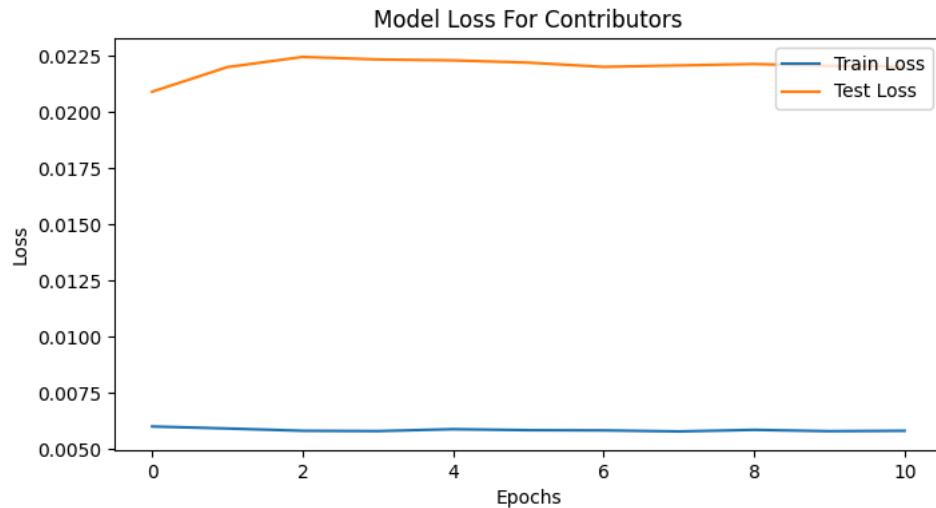
elasticsearch

Pymilvus

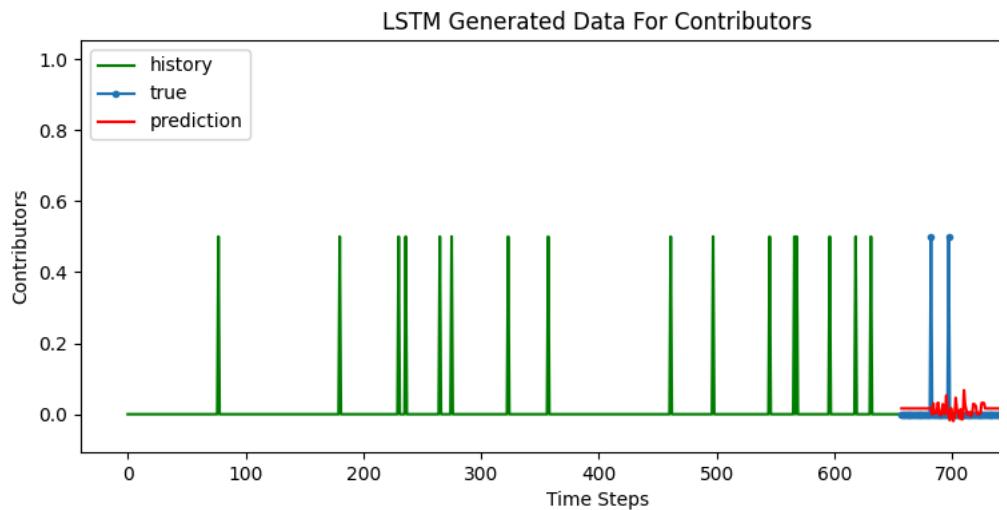
No Release Data available for the repository

Timeseries Forecasting of Contributors using Tensorflow and Keras LSTM

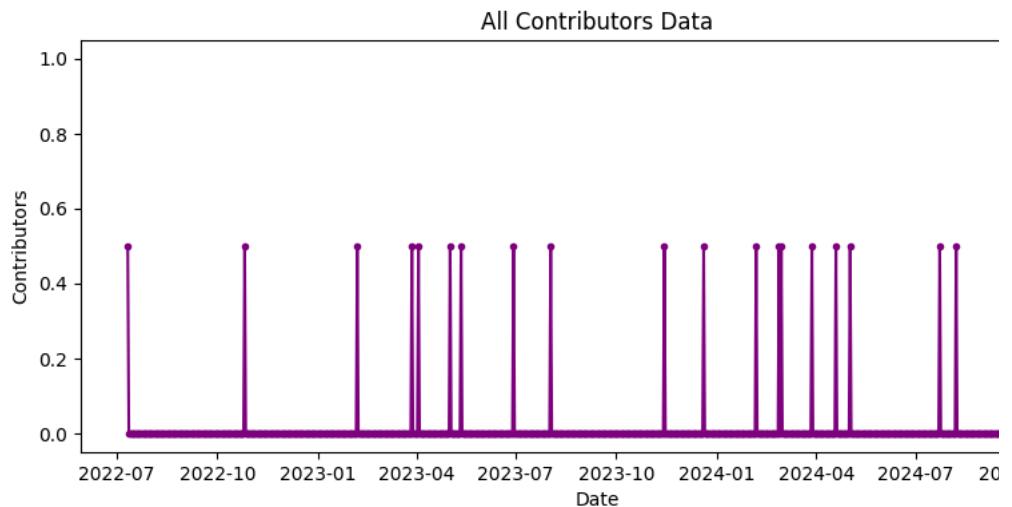
Model Loss for Contributors



LSTM Generated Data for Contributors



All Issues Data for Contributors



Timeseries Forecasting of Contributors using StatsModel

Observation Graph of Contributors

Observed

Number of stars

Number of forks

LangChainai-Langchain

LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

Pymilvus

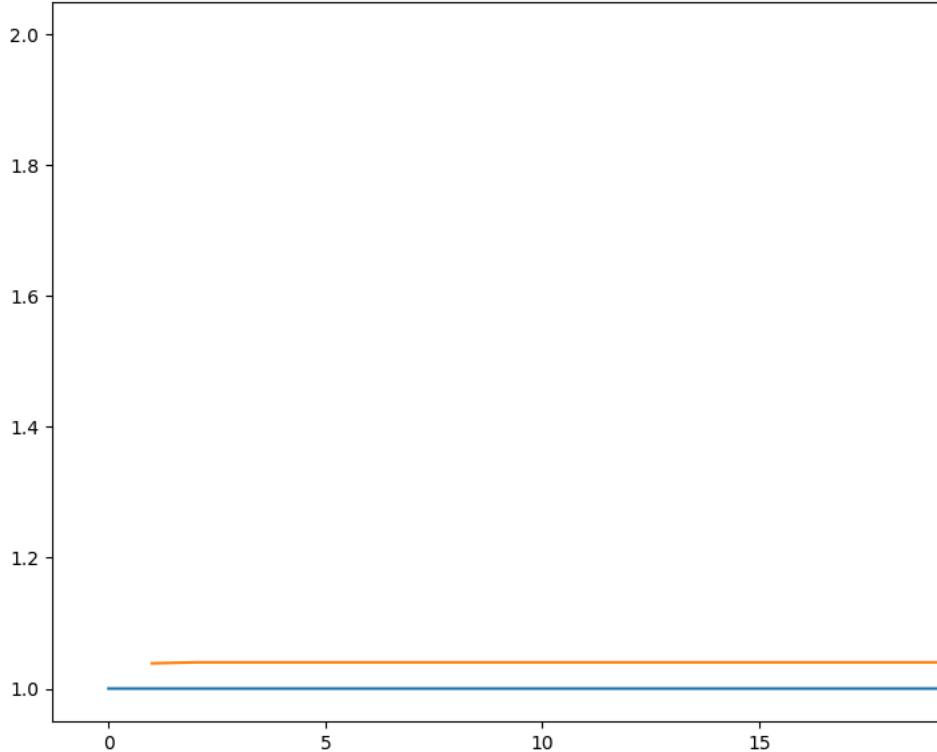
Trend

Seasonal

Observations plot of Contributors

Time Series Forecasting of Contributors

Timeseries forecasting of Contributors



Timeseries Forecasting of Contributors using Facebook/Prophet

Forecast of Contributors

Number of stars

Number of forks

LangChainai-Langchain

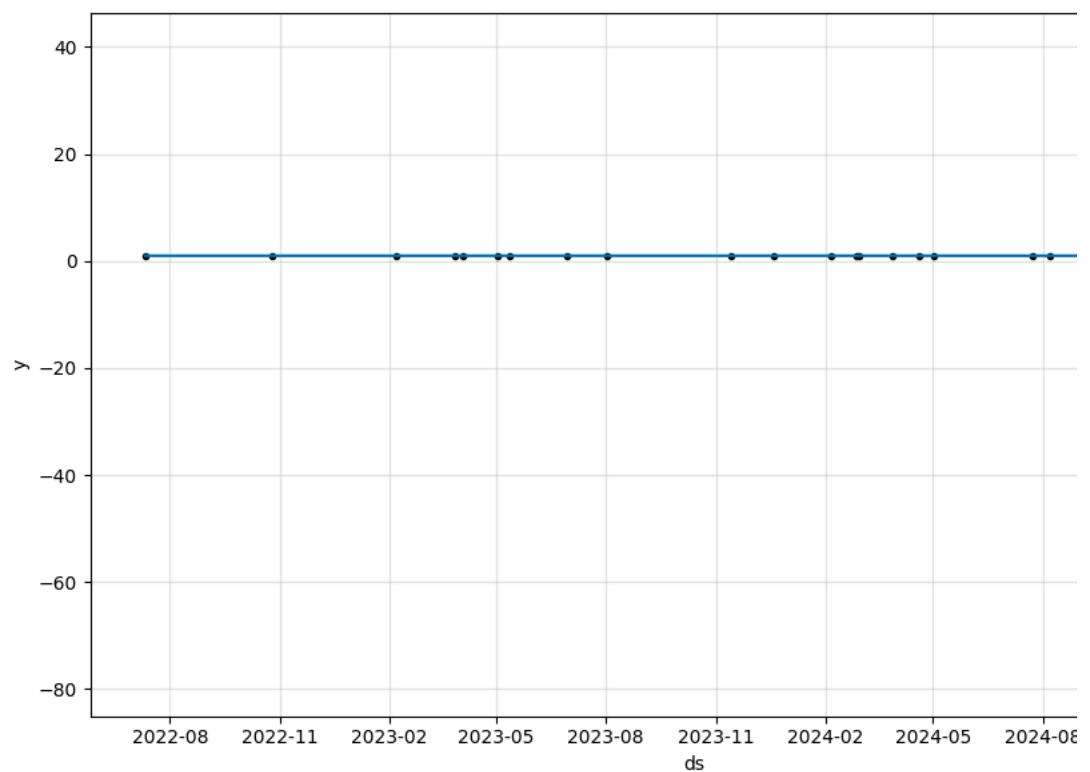
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

Pymilvus



Forecast Components of Contributors

Number of stars

Number of forks

LangChainai-Langchain

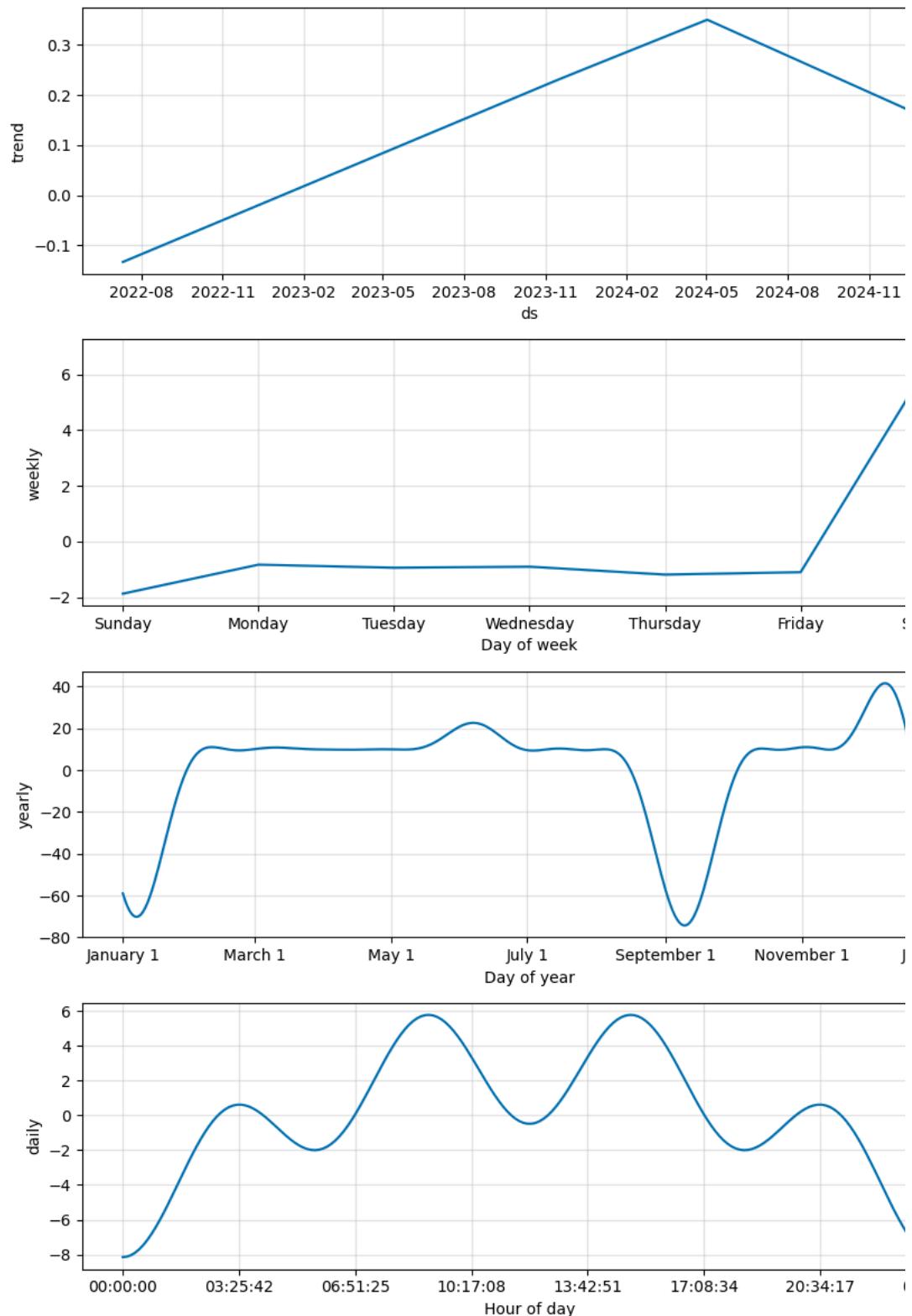
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

Pymilvus



Timeseries Forecasting of Branches using Tensorflow and Keras LSTM

Model Loss for Branches

Number of stars

Number of forks

LangChainai-Langchain

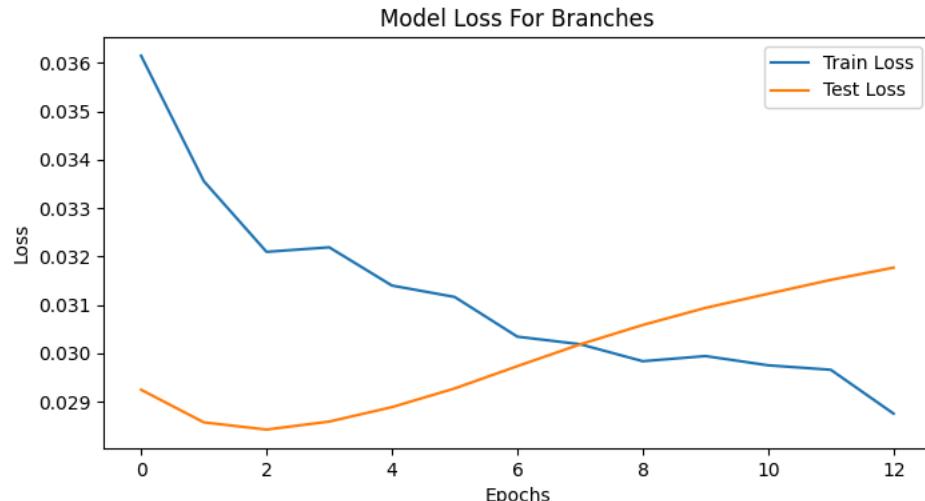
LangChainai-Langgraph

Microsoft-Autogen

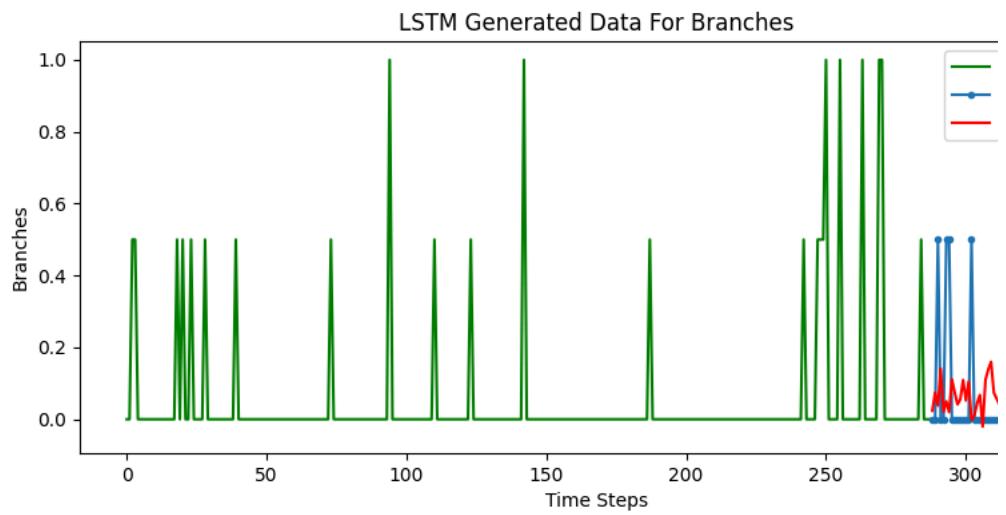
Openai-Cookbook

elasticsearch

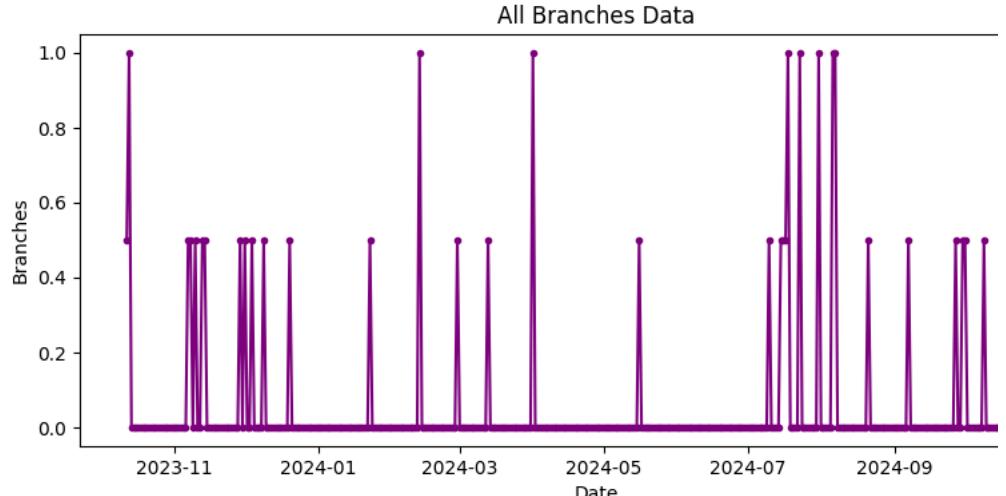
Pymilvus



LSTM Generated Data for Branches



All Issues Data for Branches



Number of stars

Number of forks

LangChainai-Langchain

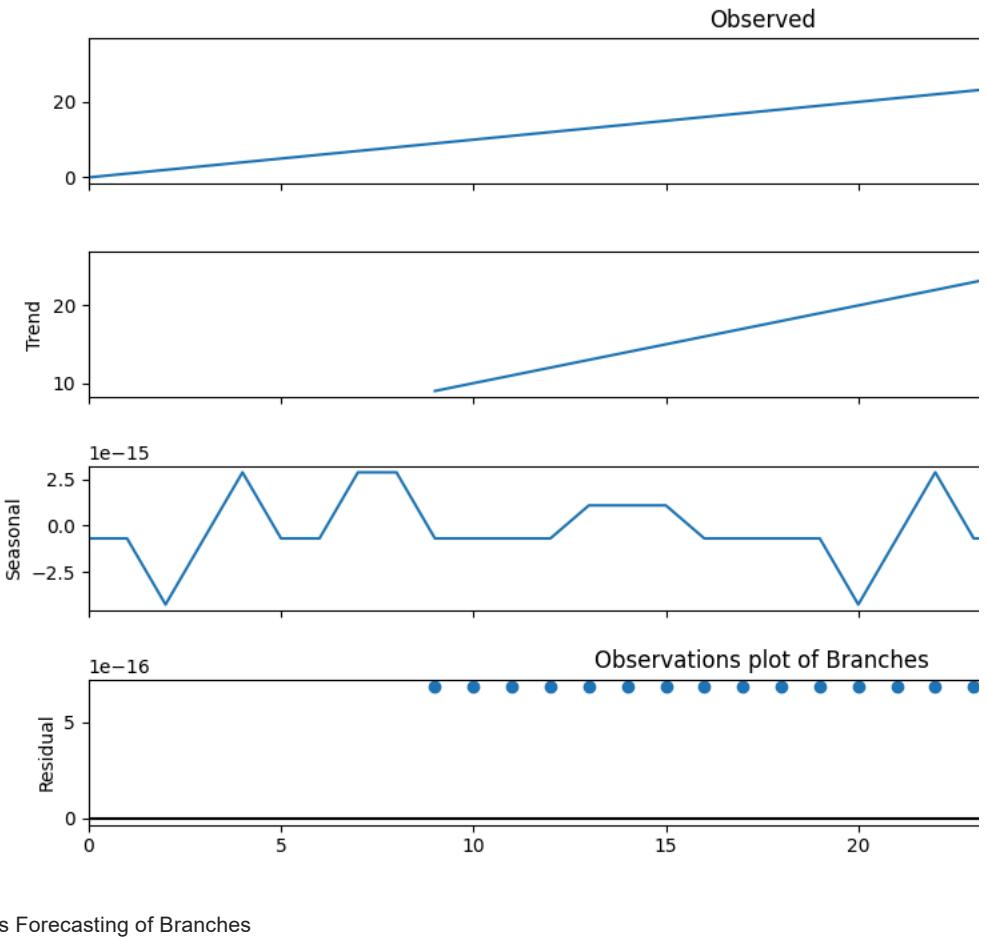
LangChainai-Langgraph

Microsoft-Autogen

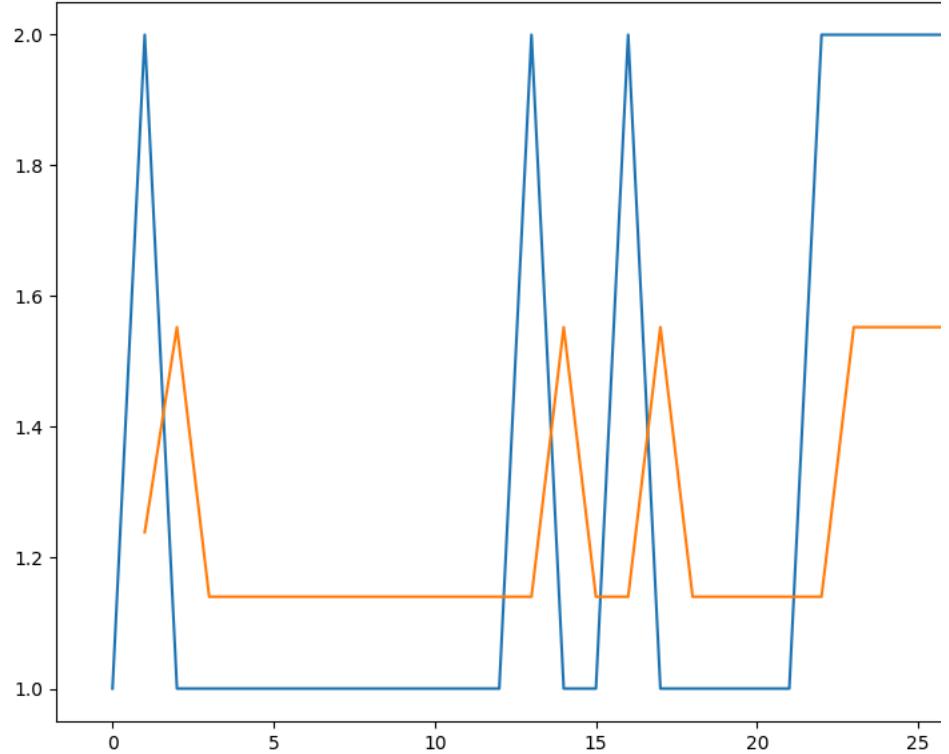
Openai-Cookbook

elasticsearch

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Timeseries forecasting of Branches

**Timeseries Forecasting of Branches using Facebook/Prophet**

Forecast of Branches

Number of stars

Number of forks

LangChainai-Langchain

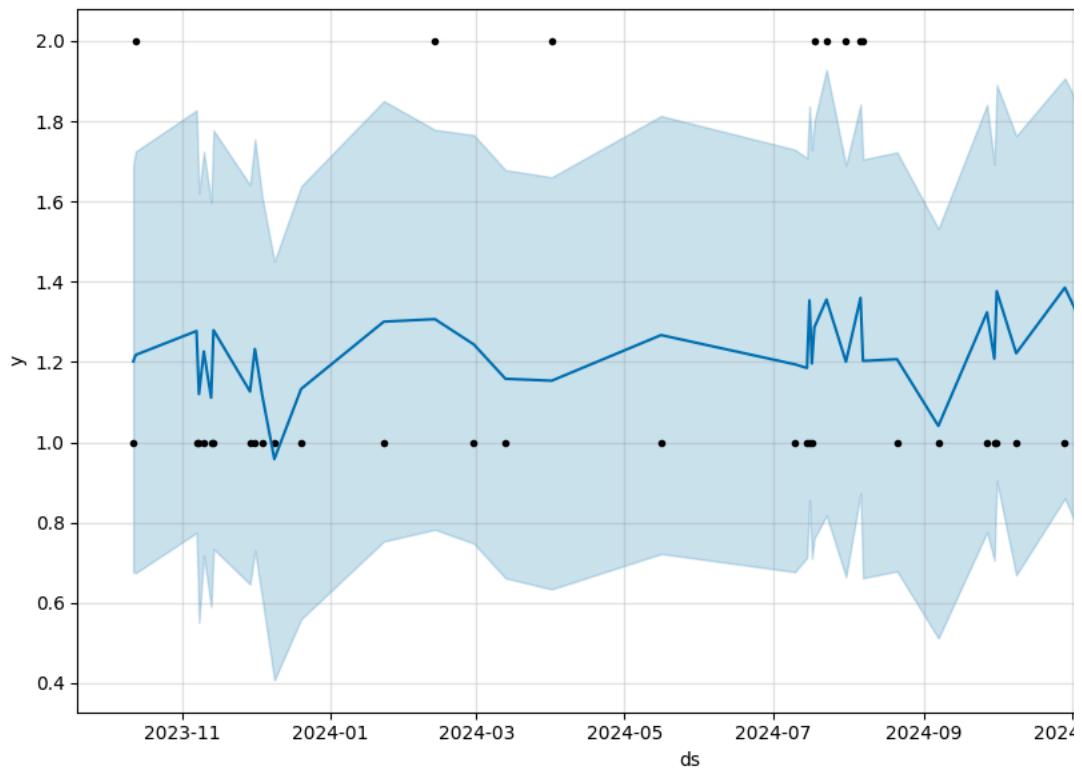
LangChainai-Langgraph

Microsoft-Autogen

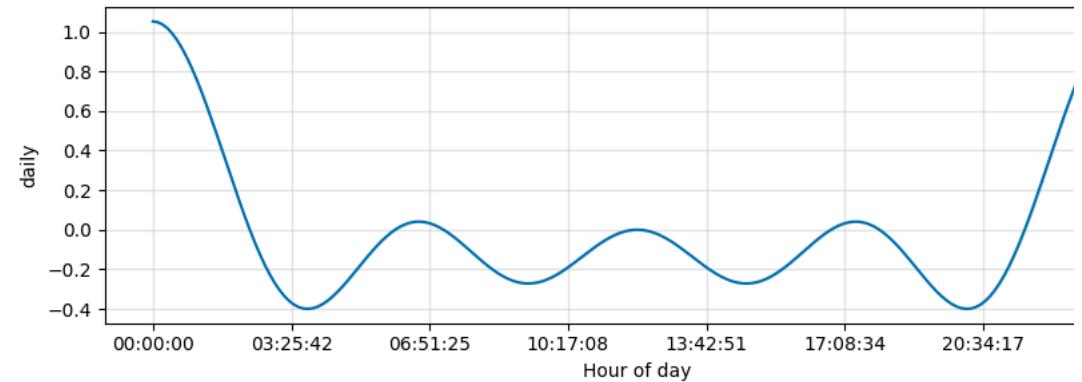
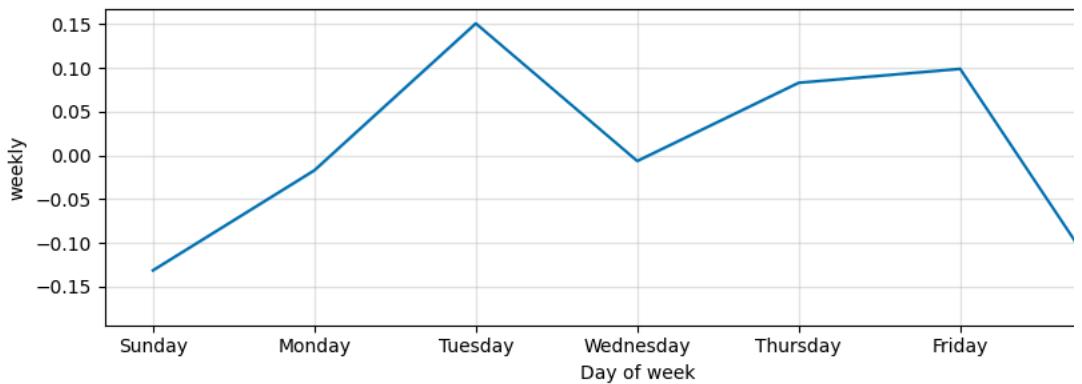
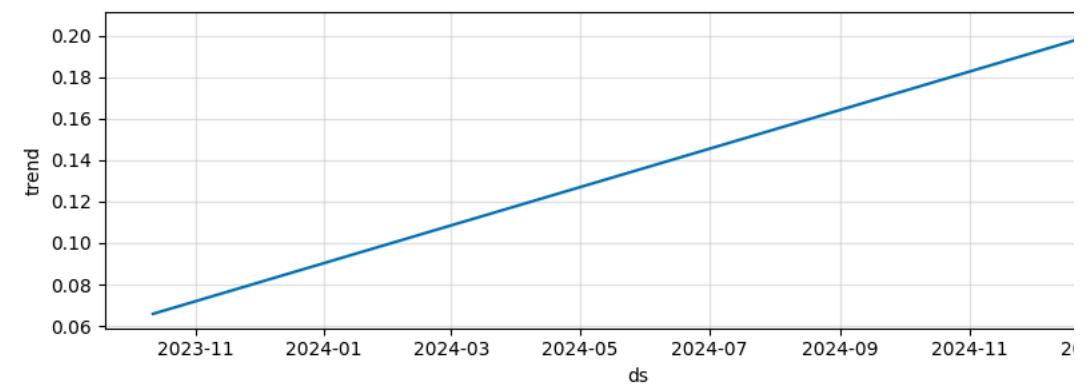
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elasticsearch

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Forecast Components of Branches



Timeseries Forecasting

Number of stars

Number of forks

LangChainai-Langchain

LangChainai-Langgraph

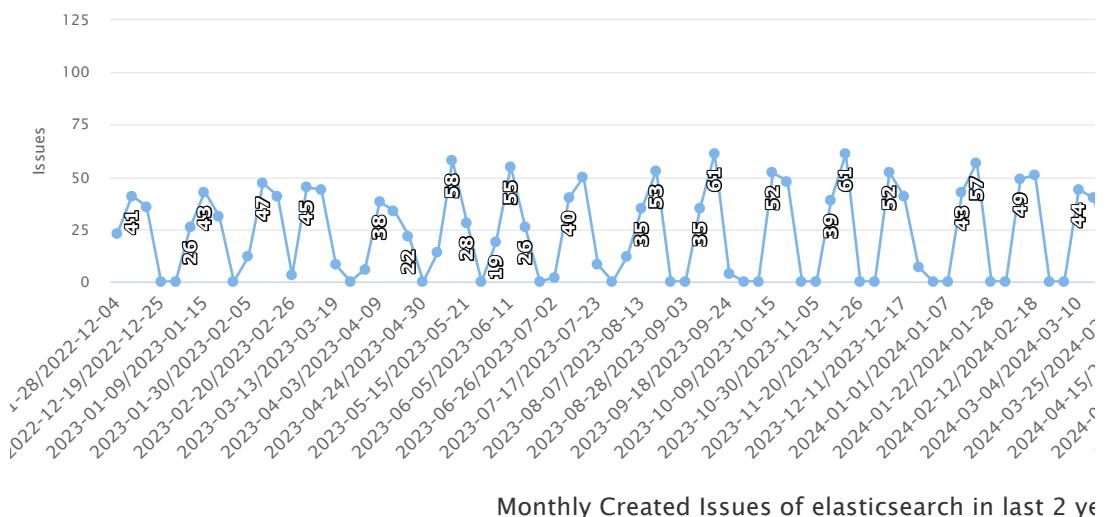
Microsoft-Autogen

Openai-Cookbook

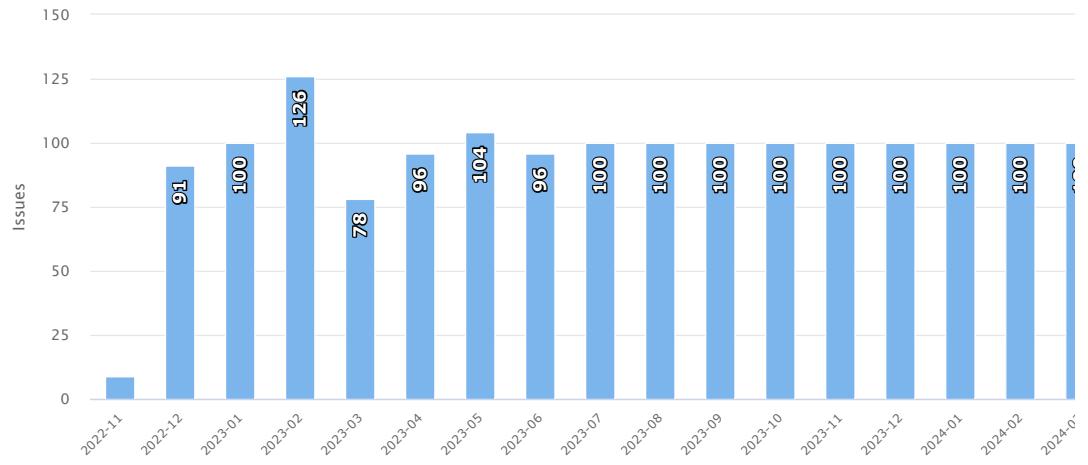
elasticsearch

Pymilvus

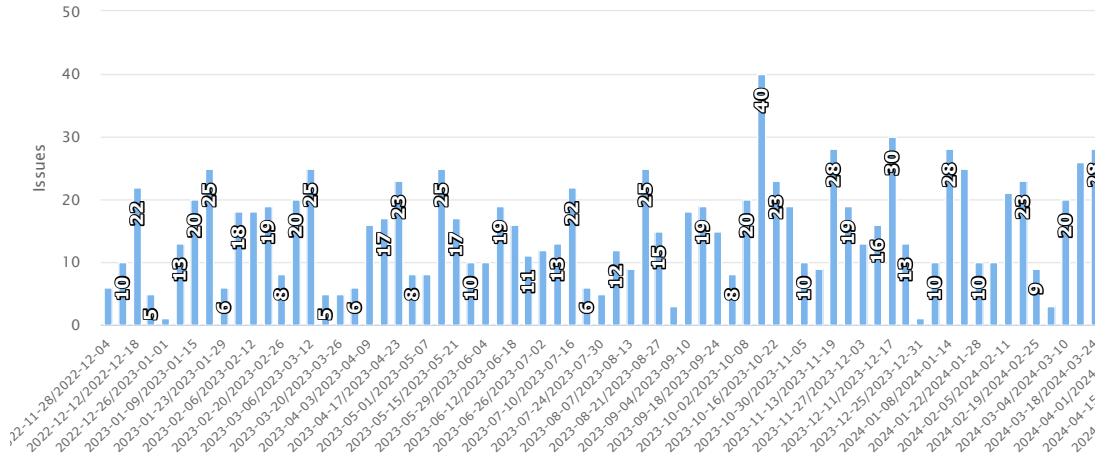
Issues of elasticsearch in last 2 years



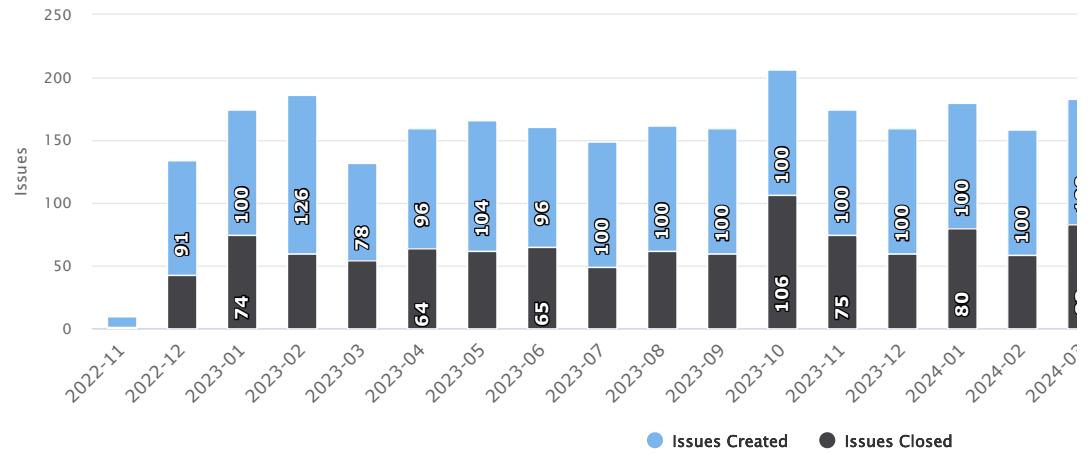
Monthly Created Issues of elasticsearch in last 2 years



Weekly Closed Issues of elasticsearch in last 2 years



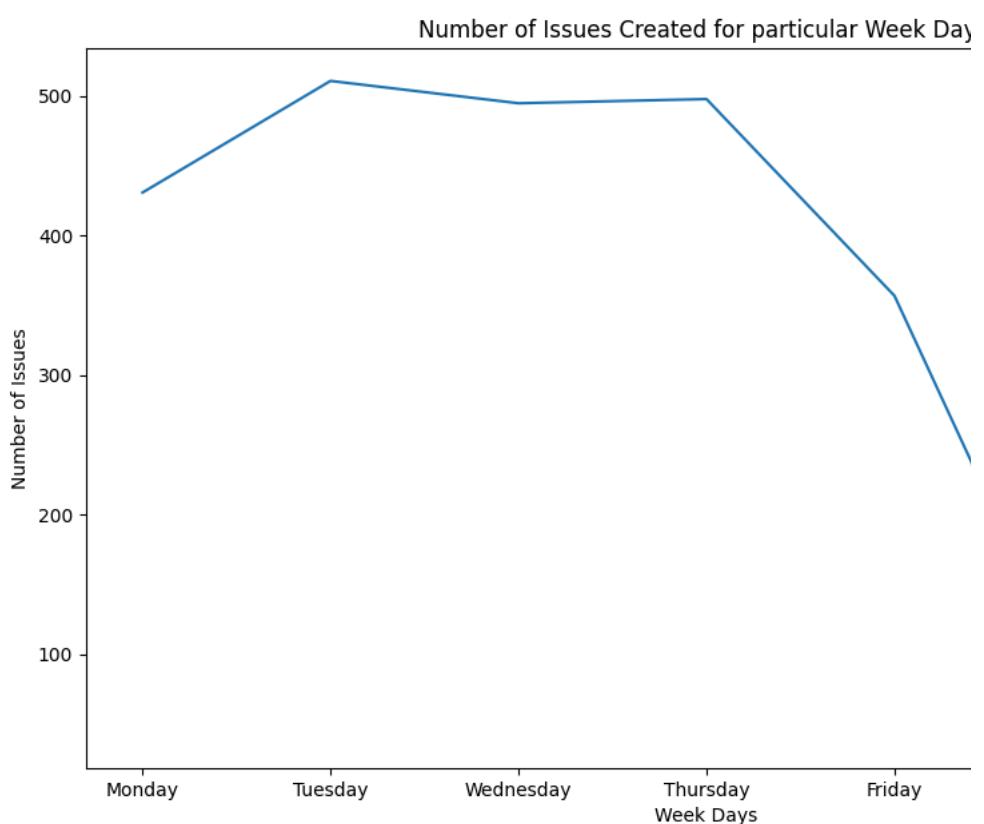
Created and Closed Issues of elasticsearch in last 2 years



The day of the week maximum number of issues created

elasticsearch

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The day of the week maximum number of issues Closed

Number of stars

Number of forks

LangChainai-Langchain

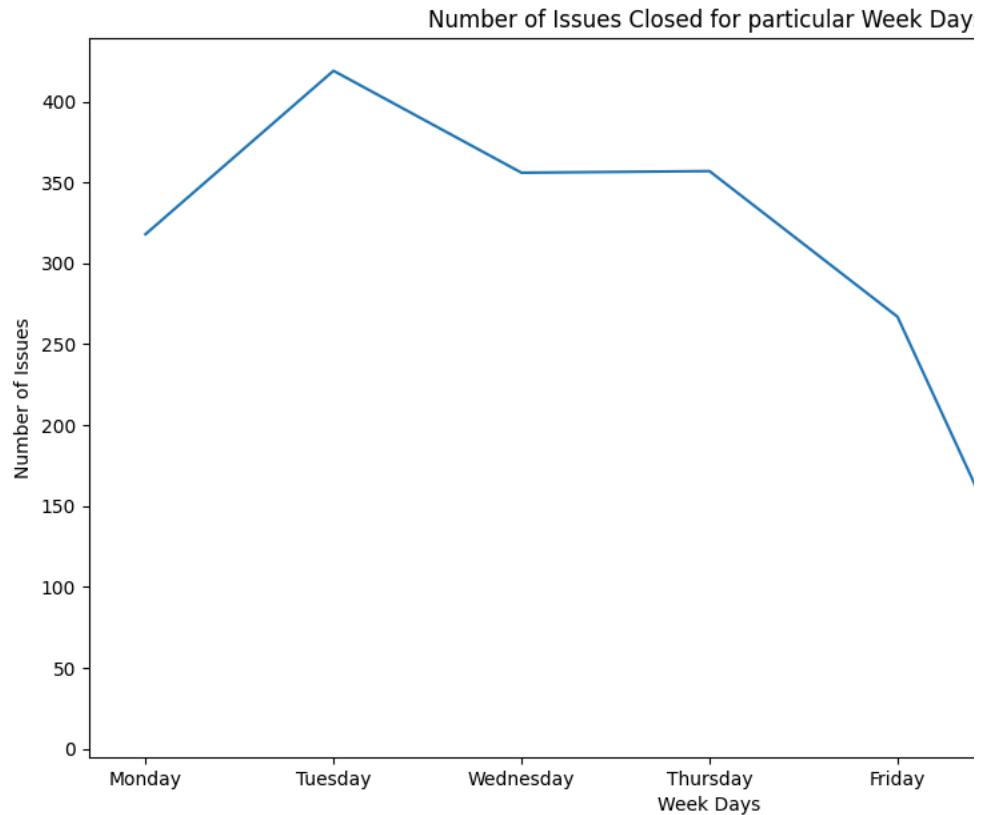
LangChainai-Langgraph

Microsoft-Autogen

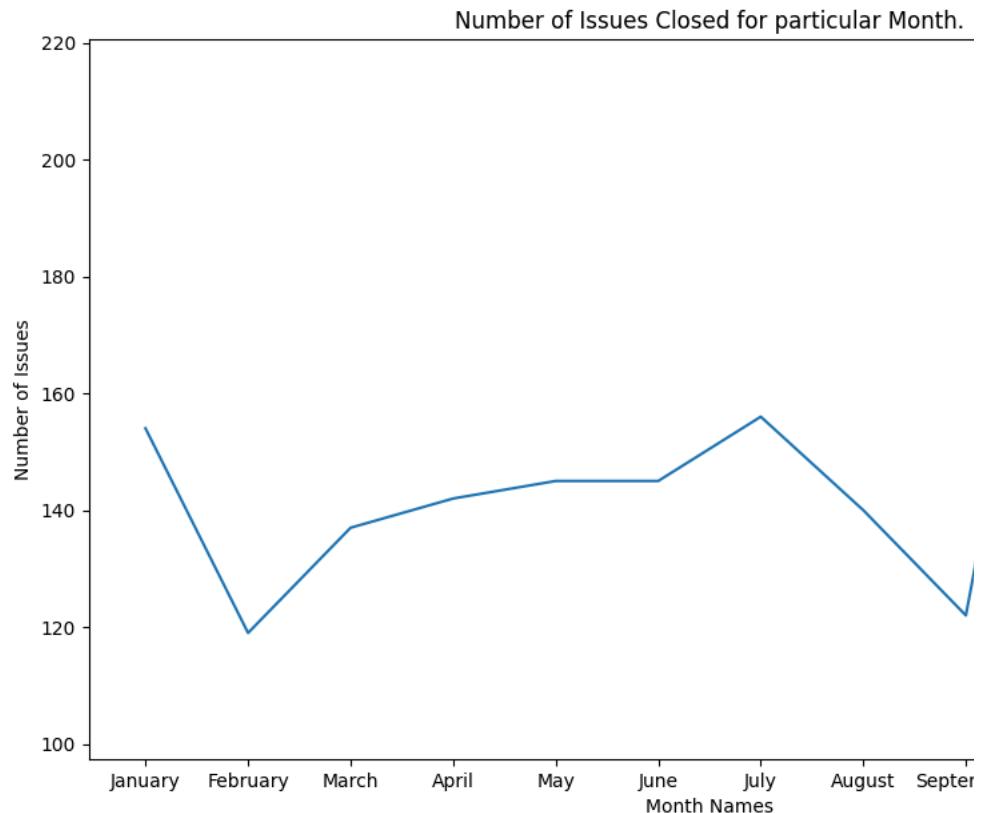
Openai-Cookbook

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The month of the year that has maximum number of issues closed



Timeseries Forecasting of Created Issues using Tensorflow and Keras LSTM

Model Loss for Created Issues

Number of stars

Number of forks

LangChainai-Langchain

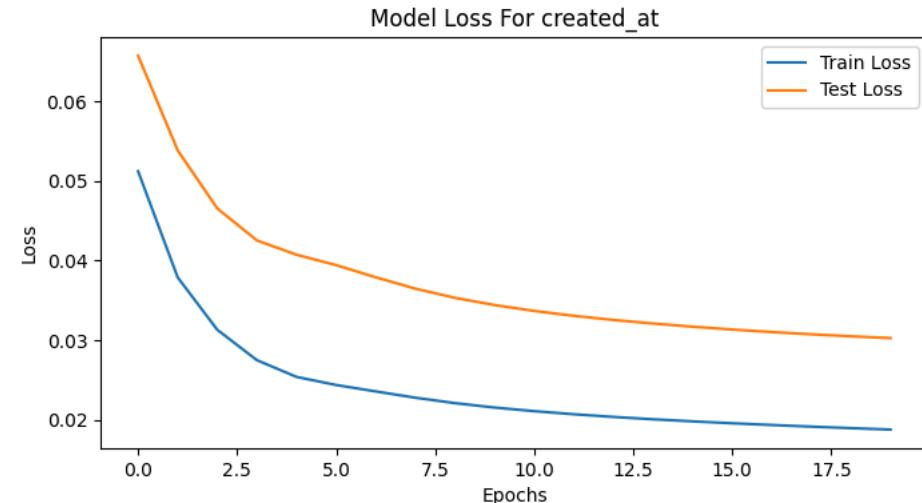
LangChainai-Langgraph

Microsoft-Autogen

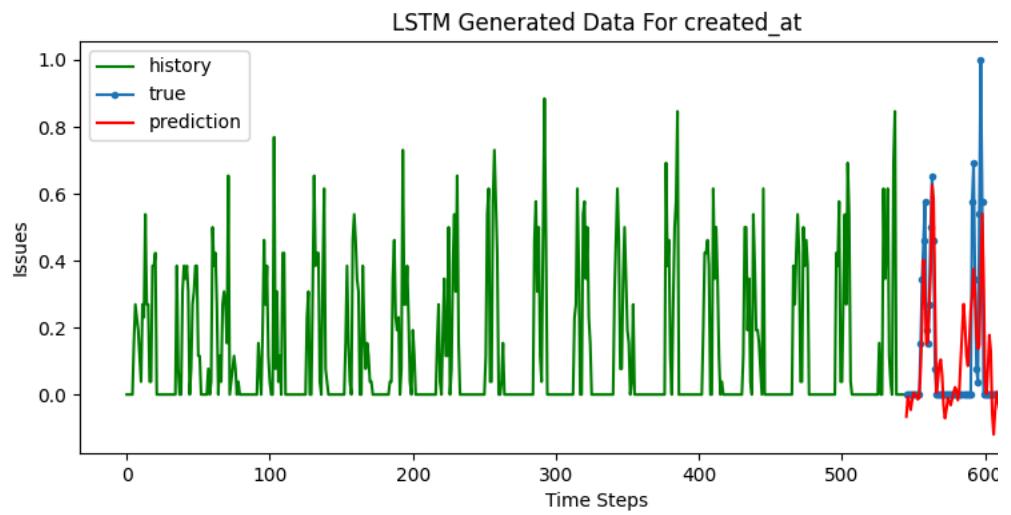
Openai-Cookbook

elasticsearch

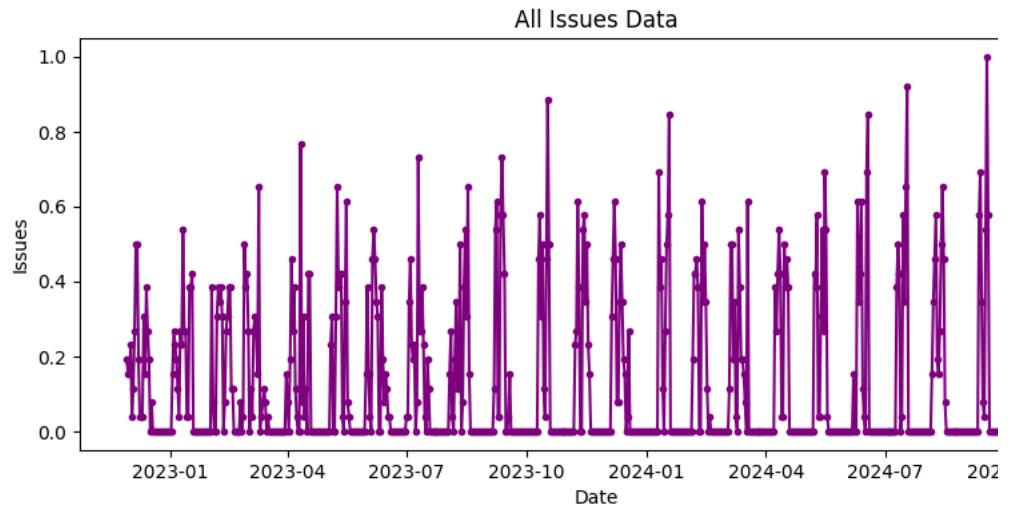
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LSTM Generated Data for Created Issues



All Issues Data for Created Issues



Timeseries Forecasting of Closed Issues using Tensorflow and Keras LSTM |

Model Loss for Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

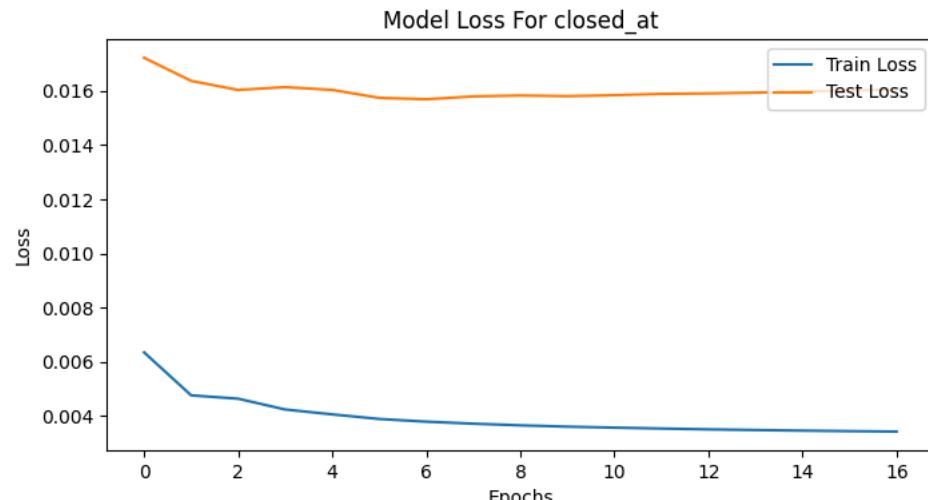
LangChainai-Langgraph

Microsoft-Autogen

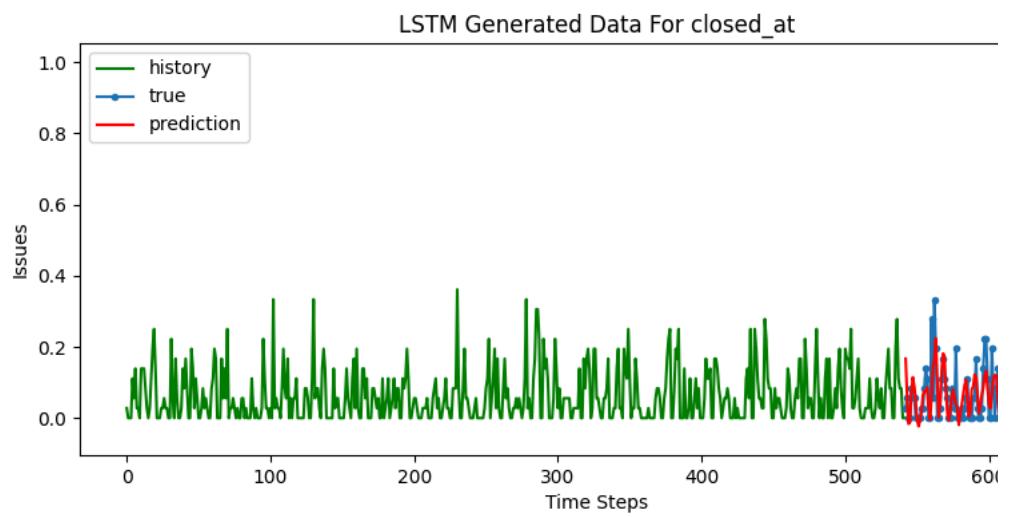
Openai-Cookbook

elasticsearch

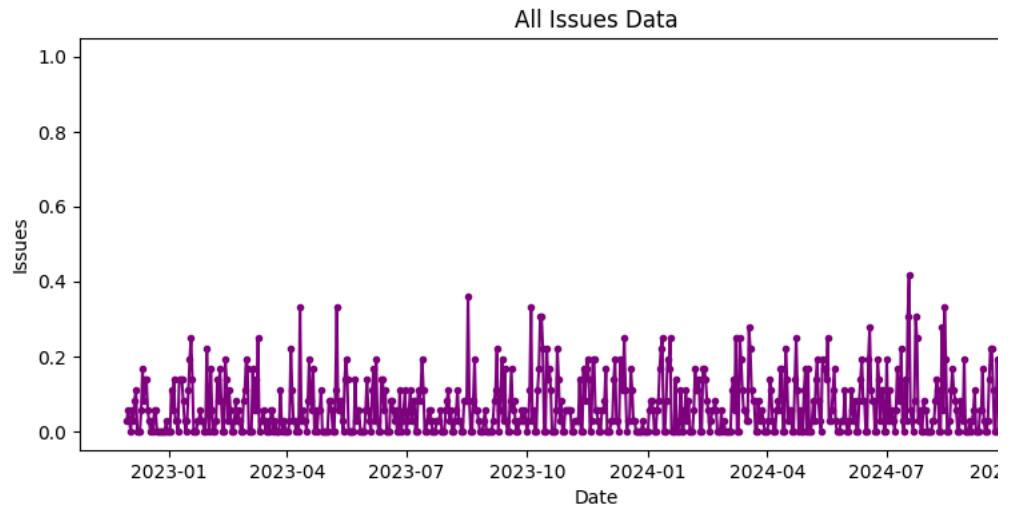
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LSTM Generated Data for Closed Issues



All Issues Data for Closed Issues



Timeseries Forecasting of Pull Requests using Tensorflow and Keras LSTM t

Model Loss for Pull Requests

Number of stars

Number of forks

LangChainai-Langchain

LangChainai-Langgraph

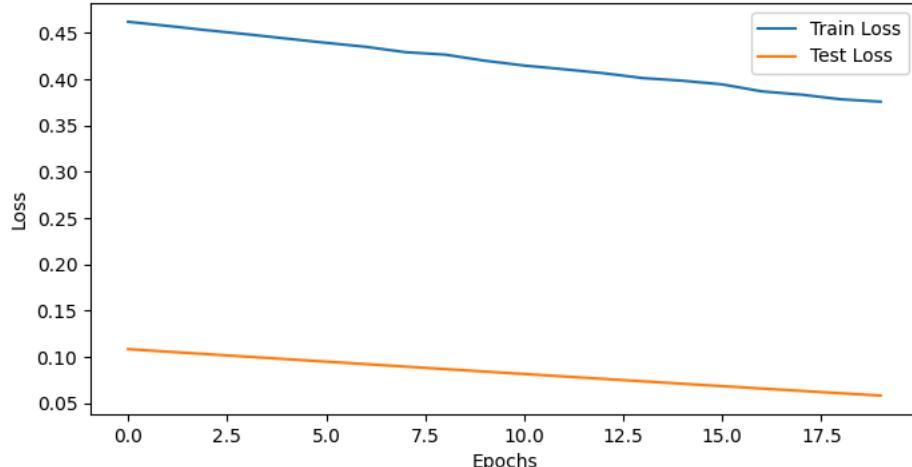
Microsoft-Autogen

Openai-Cookbook

elasticsearch

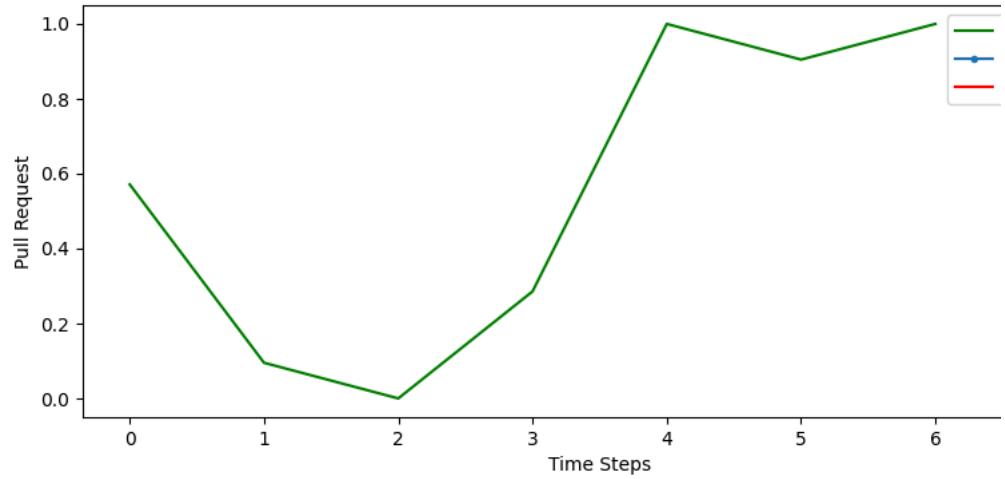
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Model Loss For Pull Request



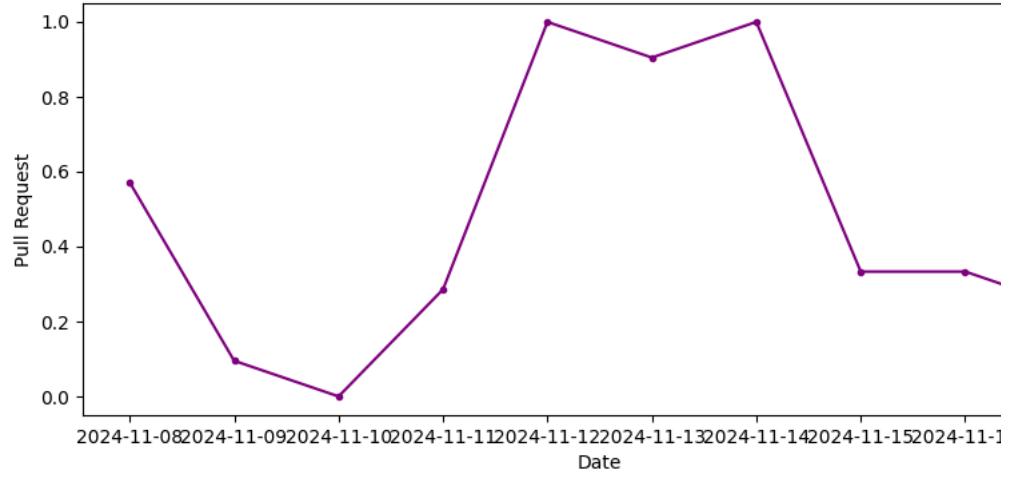
LSTM Generated Data for Pull Requests

LSTM Generated Data For Pull request



All Issues Data for Pull Requests

All Pull Request Data



Timeseries Forecasting of Commits using Tensorflow and Keras LSTM based Model Loss for Commits

Number of stars

Number of forks

LangChainai-Langchain

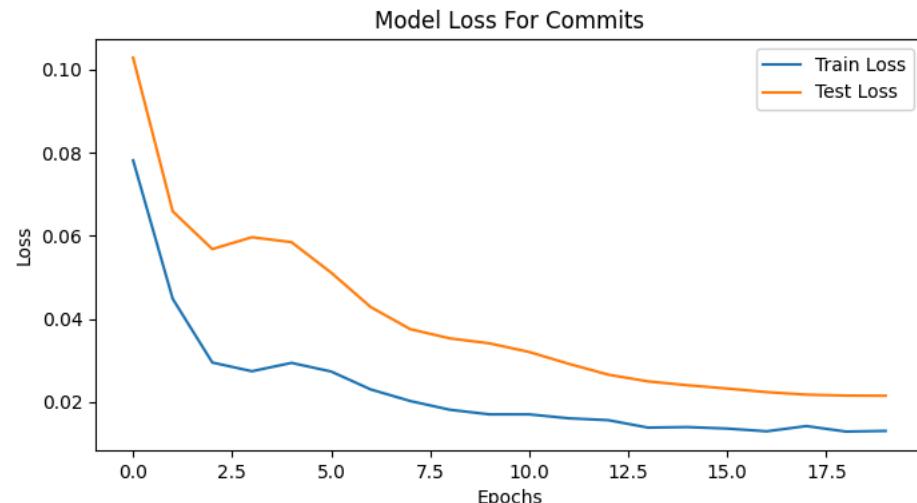
LangChainai-Langgraph

Microsoft-Autogen

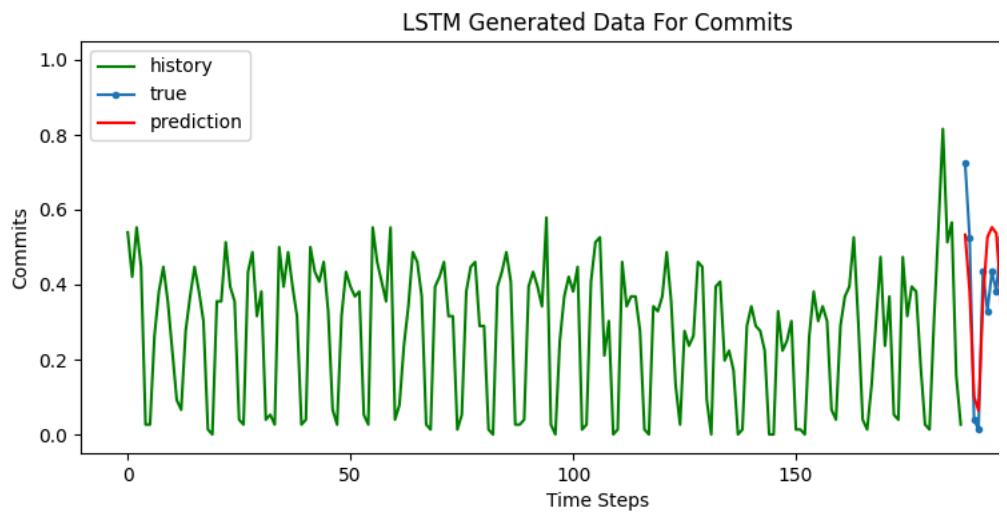
Openai-Cookbook

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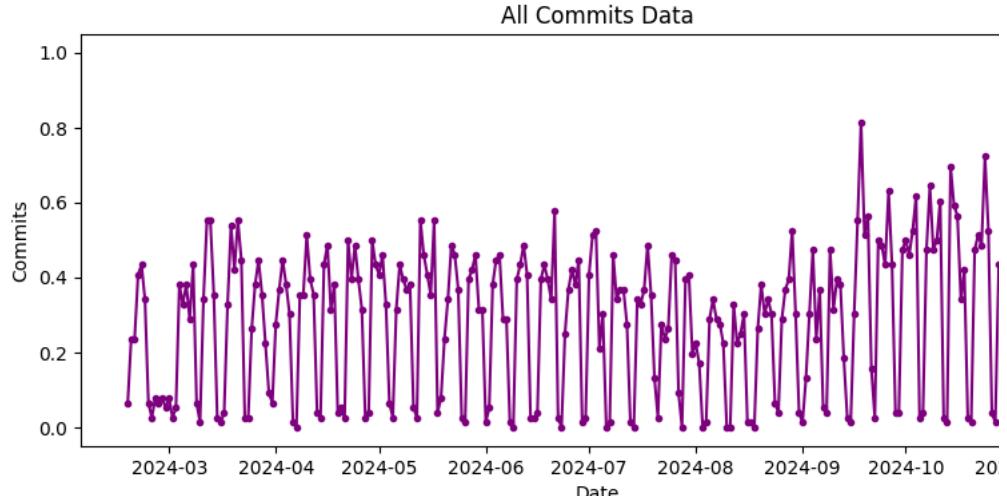
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LSTM Generated Data for Commits



All Issues Data for Commits



Timeseries Forecasting of Created Issues using Facebook/Prophet based on Forecast of Created Issues

Number of stars

Number of forks

LangChainai-Langchain

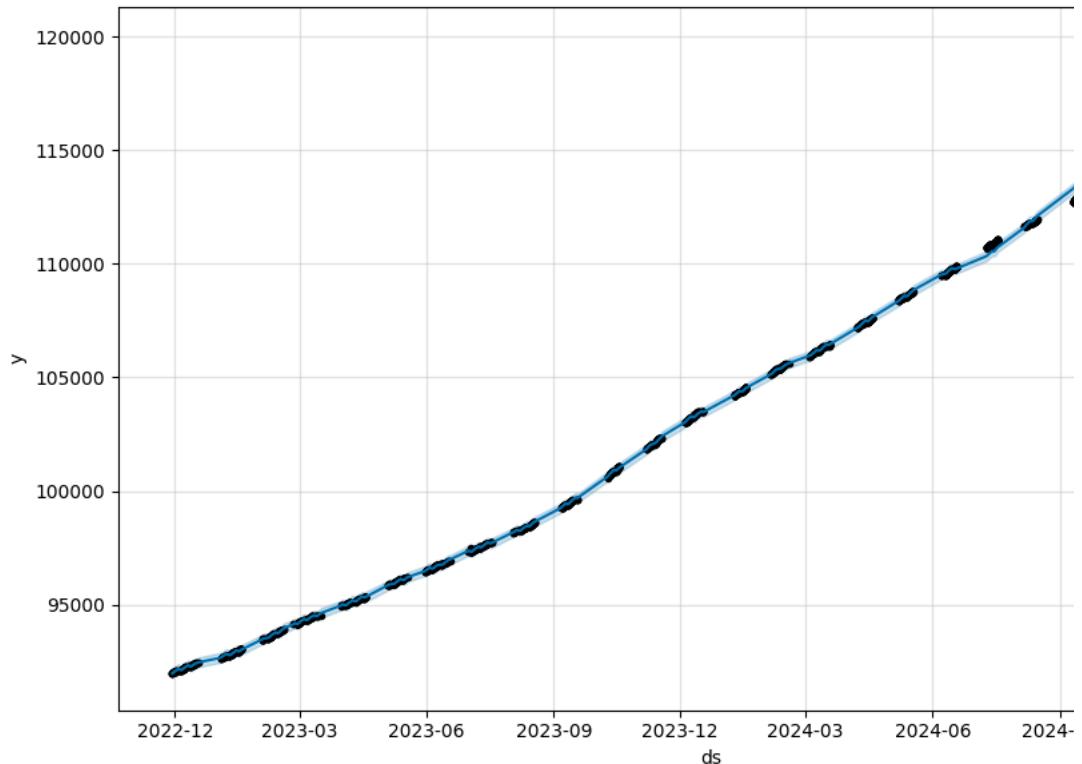
LangChainai-Langgraph

Microsoft-Autogen

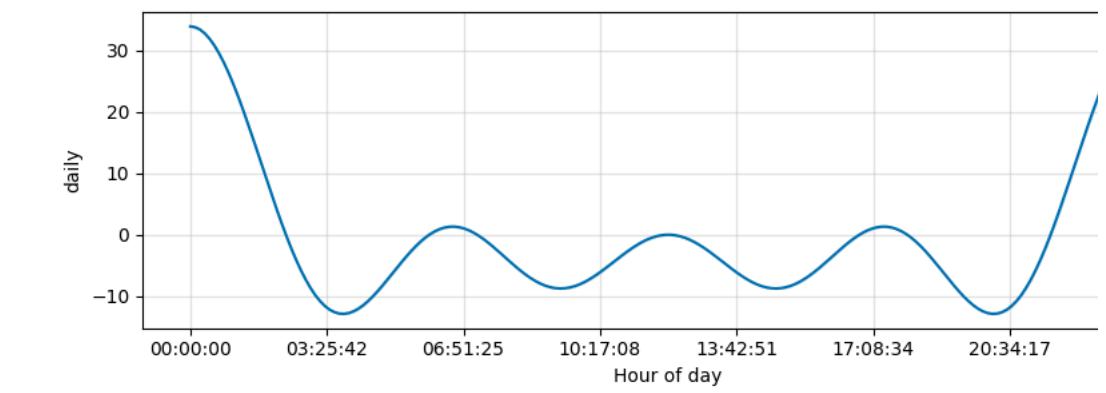
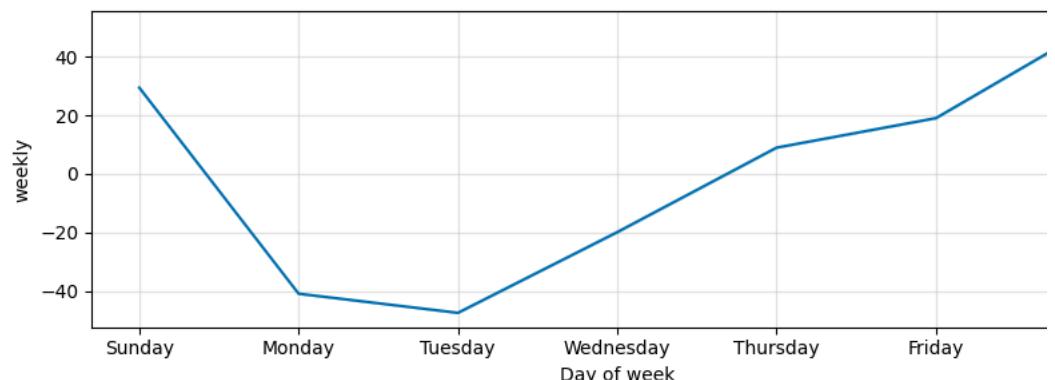
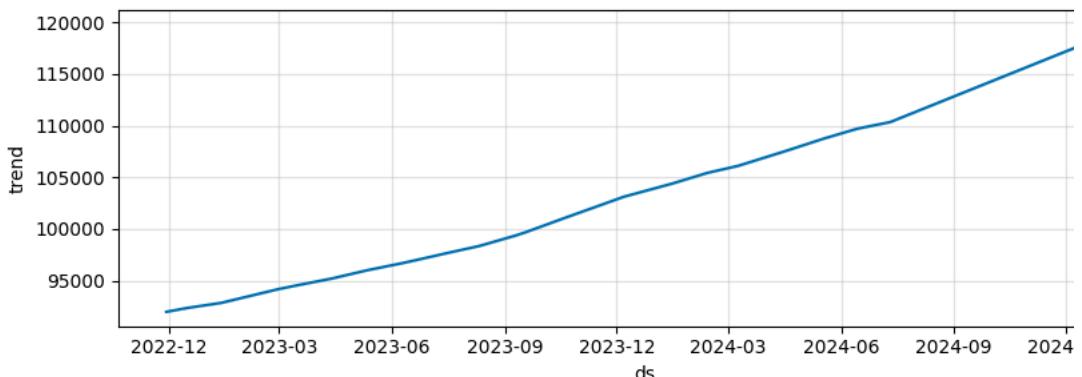
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Forecast Components of Created Issues



Timeseries Forecasting of Closed Issues using Facebook/Prophet based on |

Forecast of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

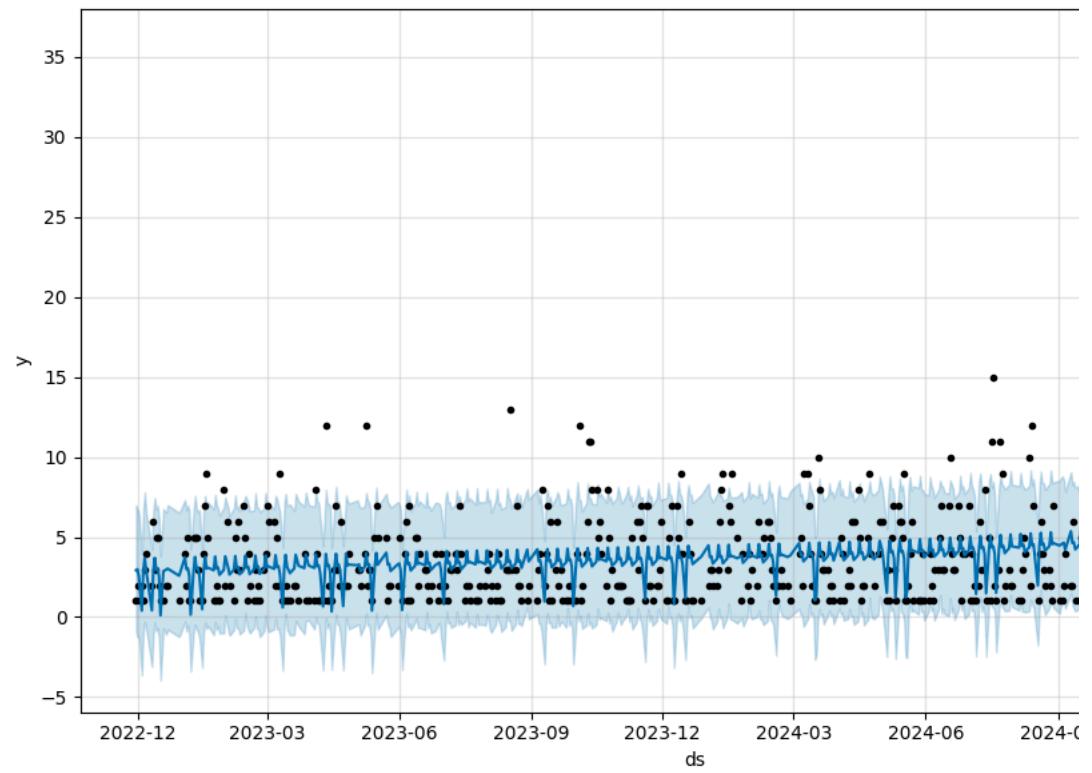
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Forecast Components of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

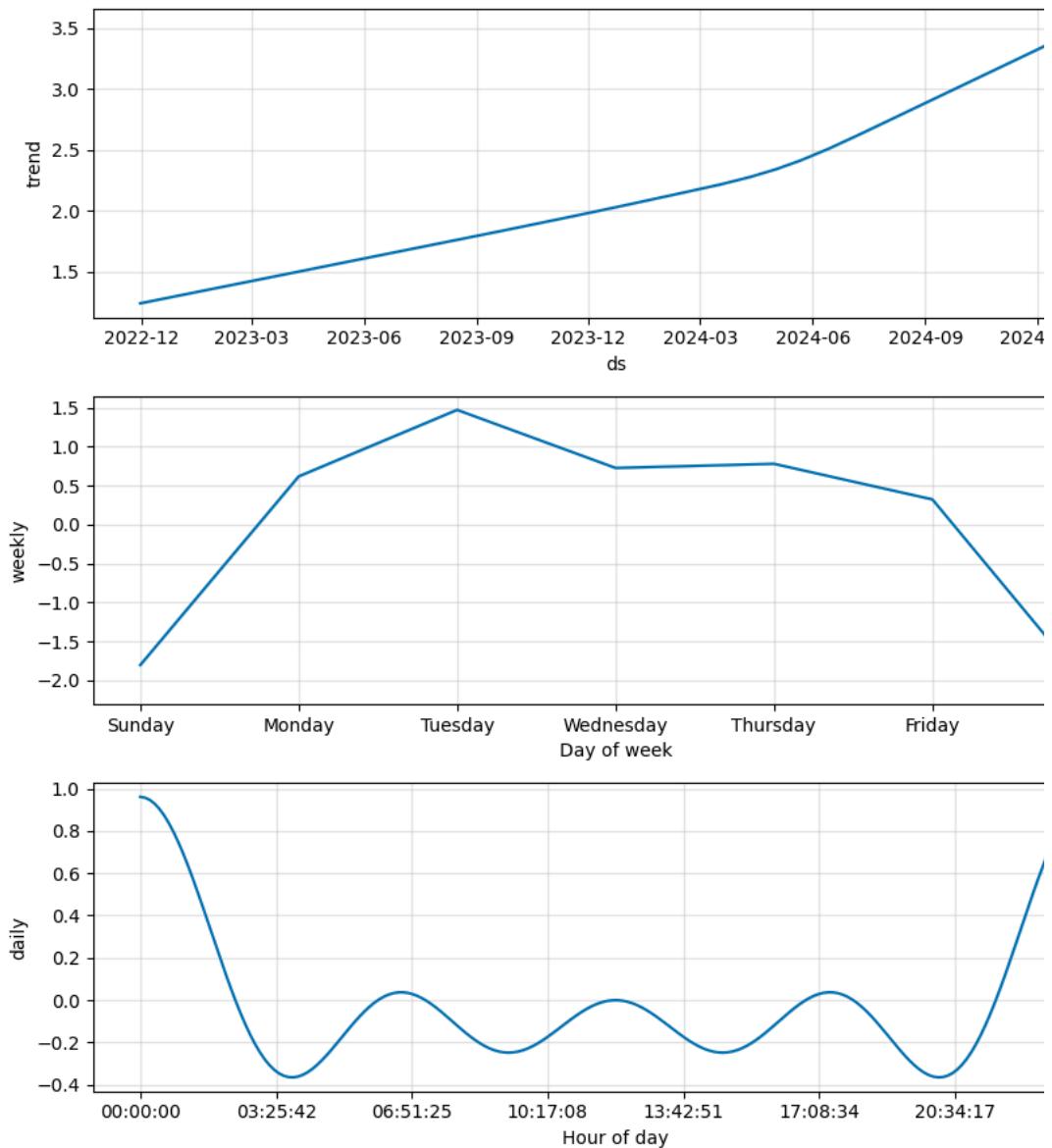
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Timeseries Forecasting of Pull Request using Facebook/Prophet based on past
Forecast of Pull Request

Number of stars

Number of forks

LangChainai-Langchain

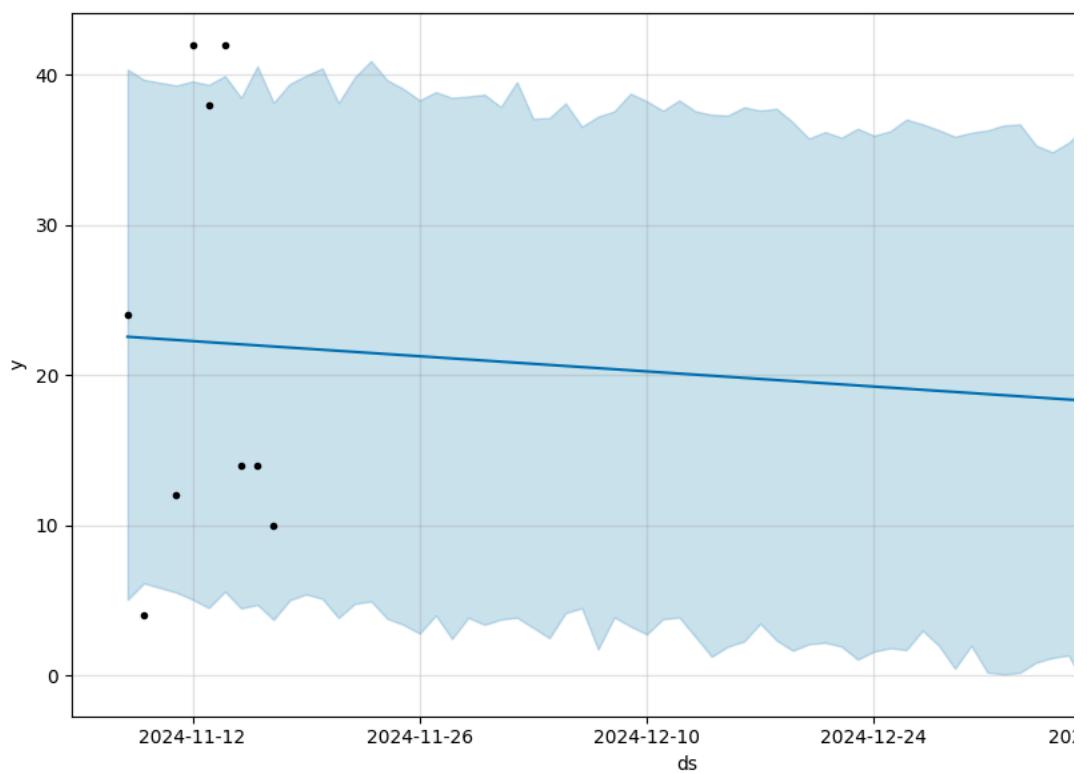
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Microsoft-Autogen

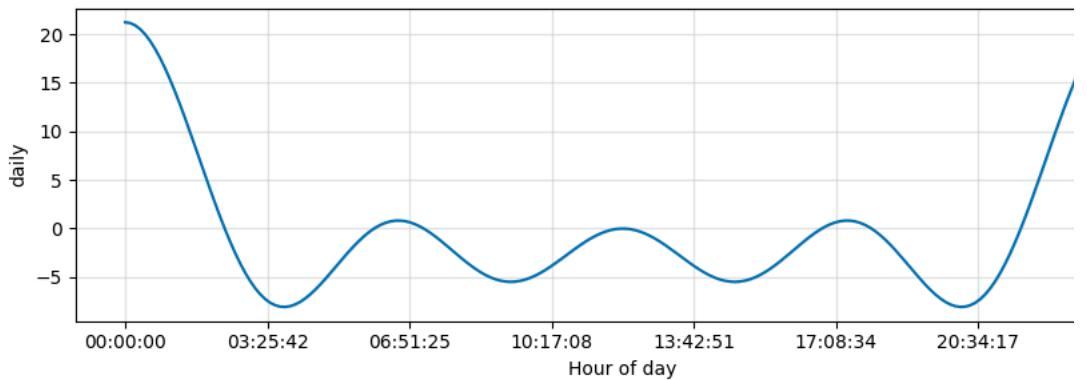
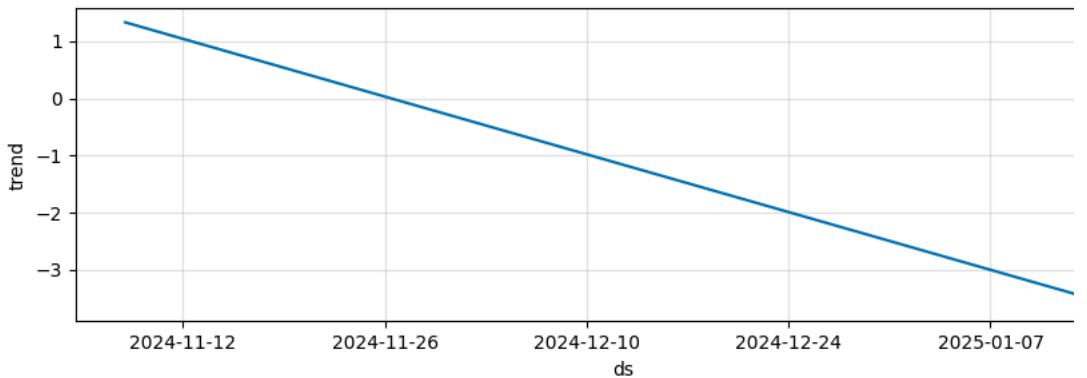
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Forecast Components of Pull Request



Timeseries Forecasting of Commits using Facebook/Prophet based on past repository activity

Forecast of Commits

Number of stars

Number of forks

LangChainai-Langchain

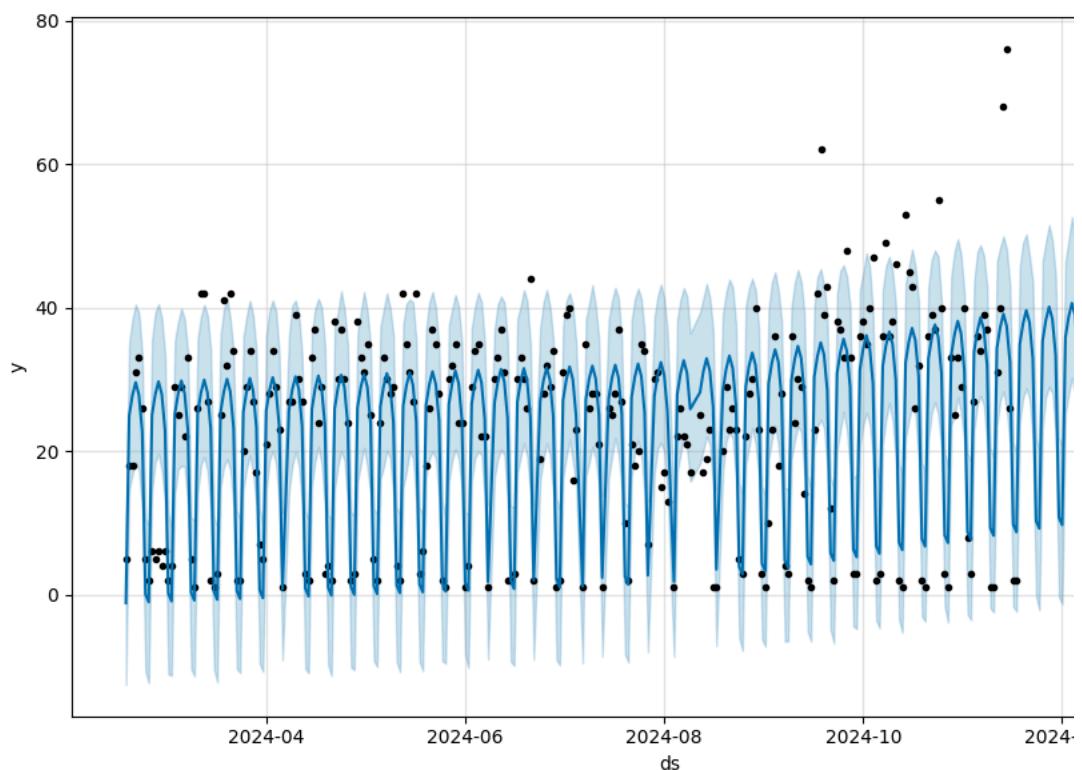
LangChainai-Langgraph

Microsoft-Autogen

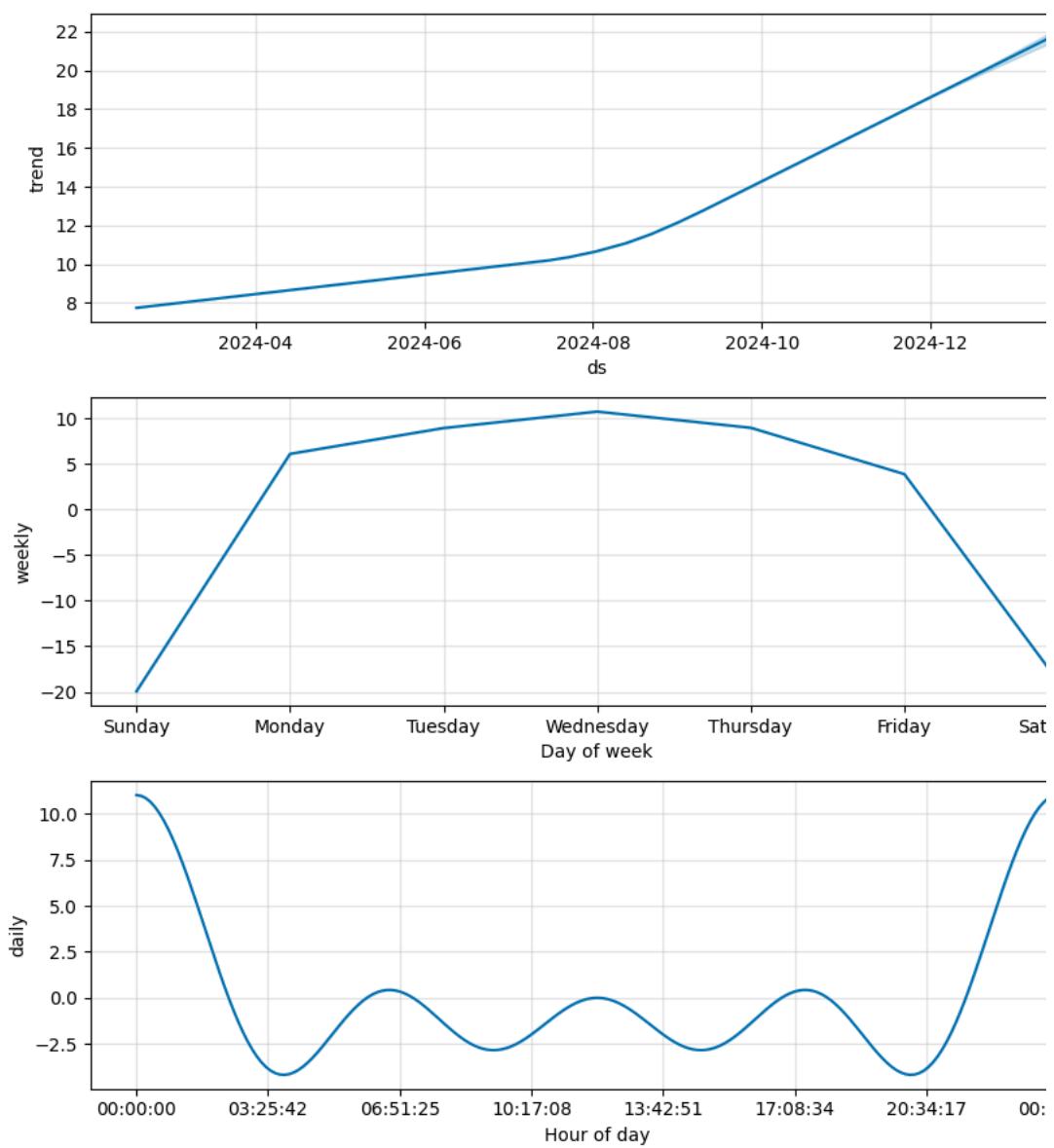
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Forecast Components of Commits



Timeseries Forecasting of Created Issues using StatsModel based on past m

Observation Graph of Created Issues

Number of stars

Number of forks

LangChainai-Langchain

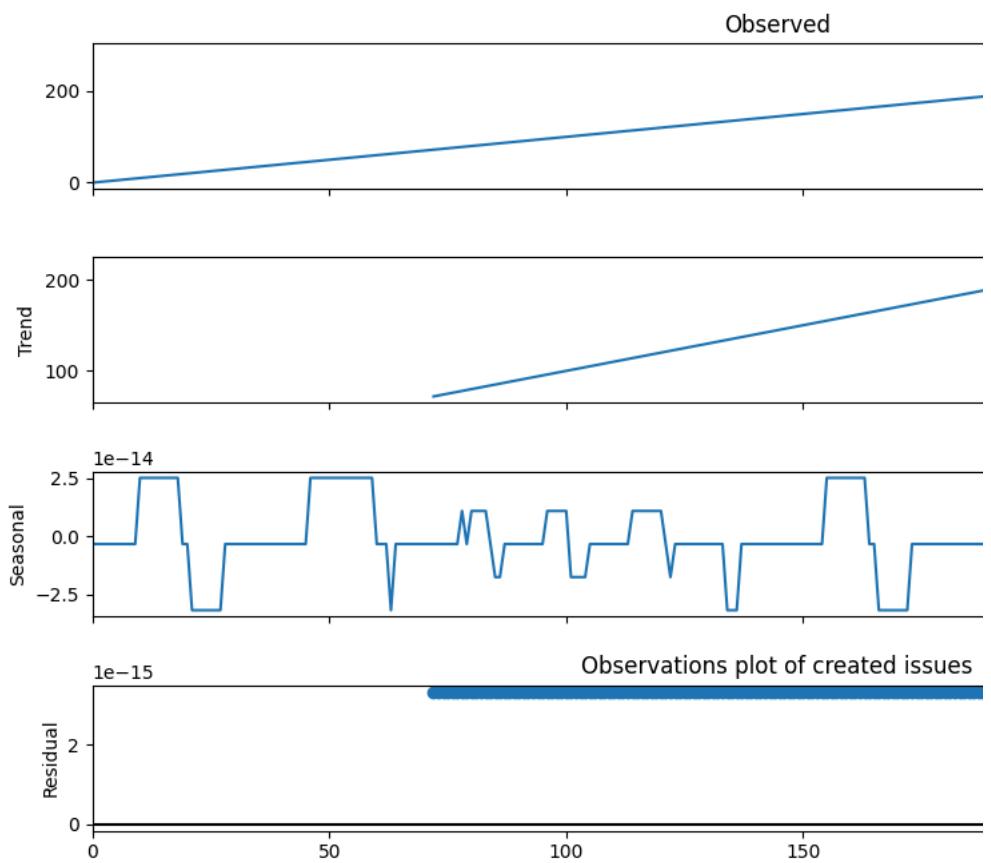
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

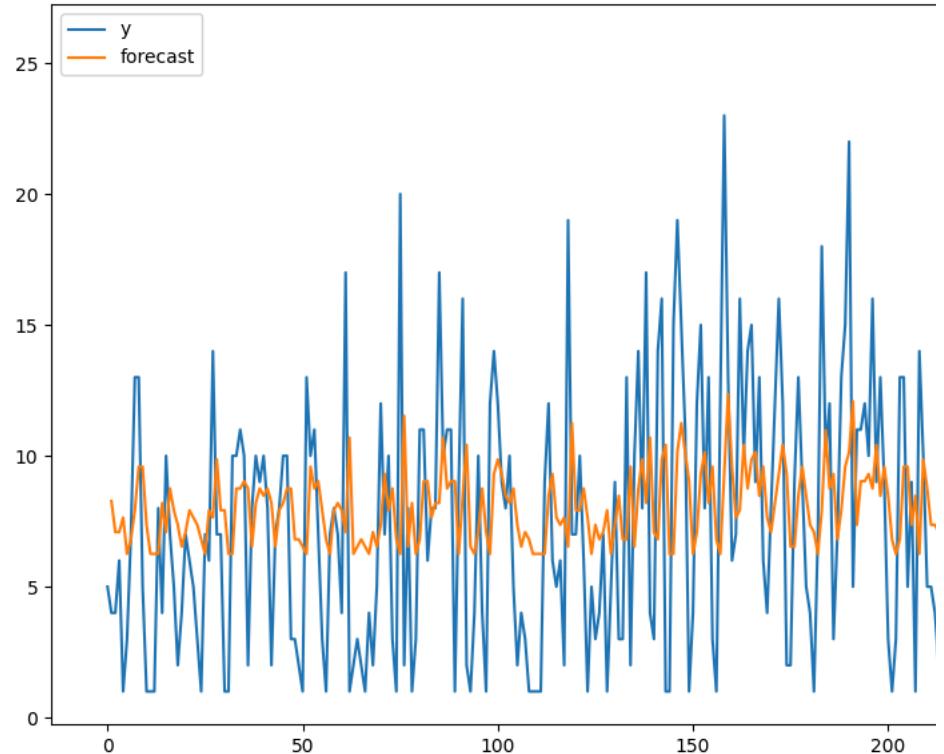
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Time Series Forecasting of Created Issues

Timeseries forecasting of created issues



Timeseries Forecasting of Closed Issues using StatsModel based on past m

Observation Graph of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

LangChainai-Langgraph

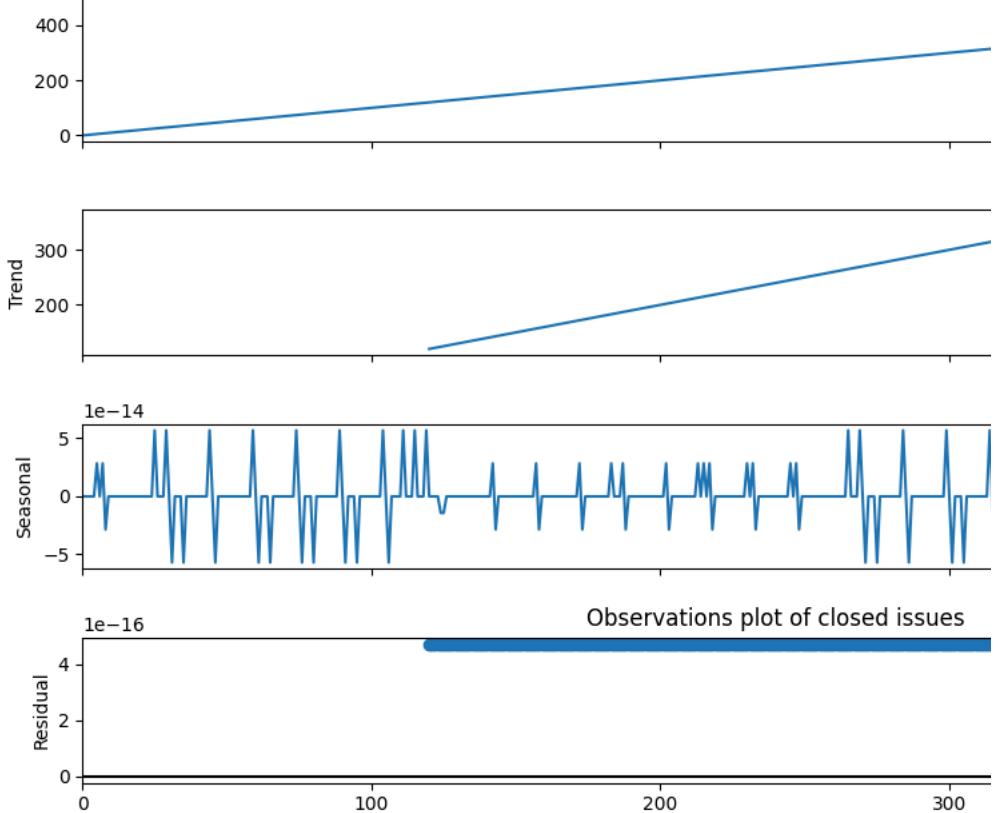
Microsoft-Autogen

Openai-Cookbook

elasticsearch

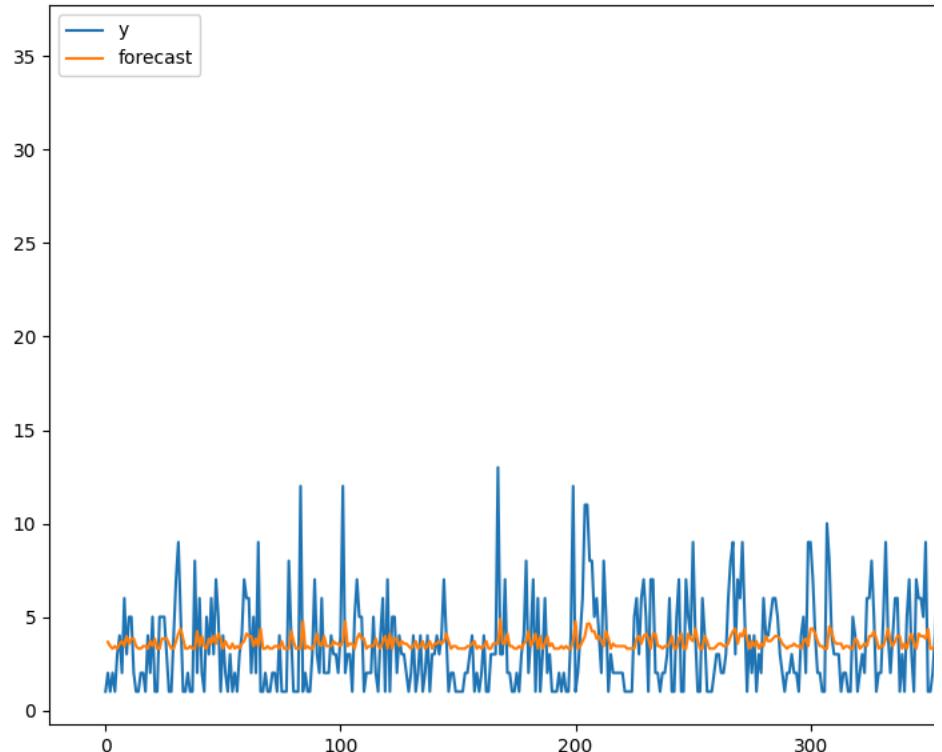
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Observed



Time Series Forecasting of Closed Issues

Timeseries forecasting of closed issues



Timeseries Forecasting of Pull Request Issues using StatsModel based on pa

Observation Graph of Pull Request Issues

Number of stars

Number of forks

LangChainai-Langchain

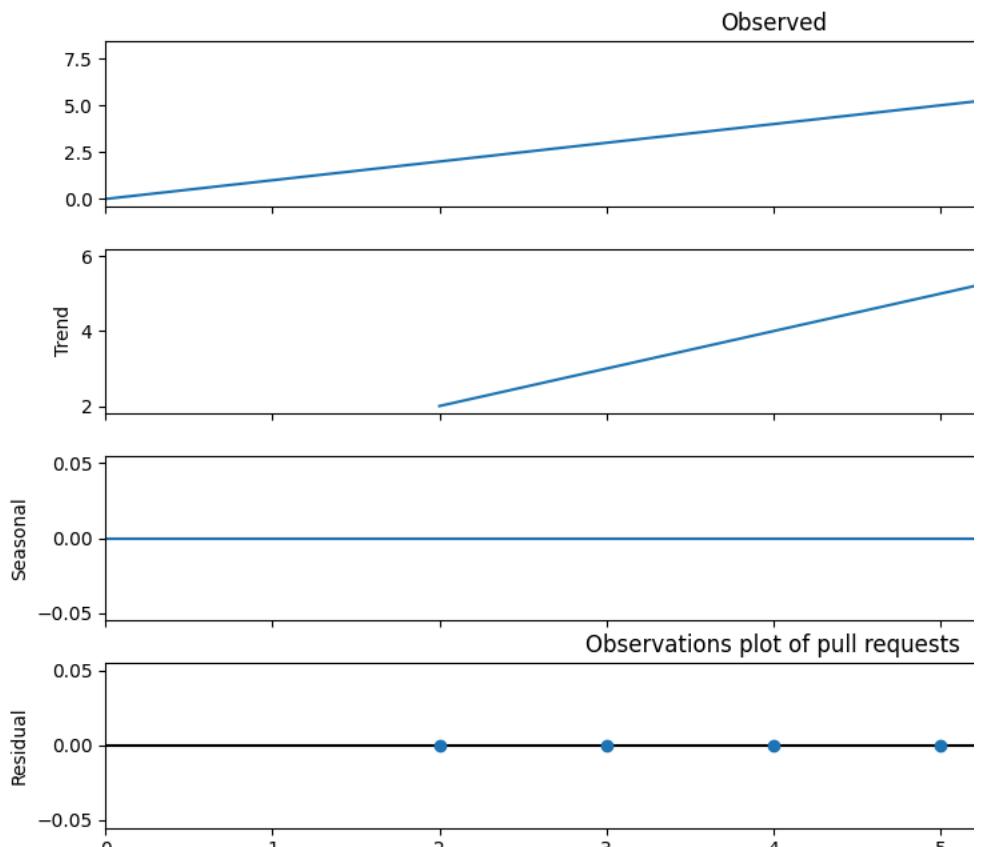
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

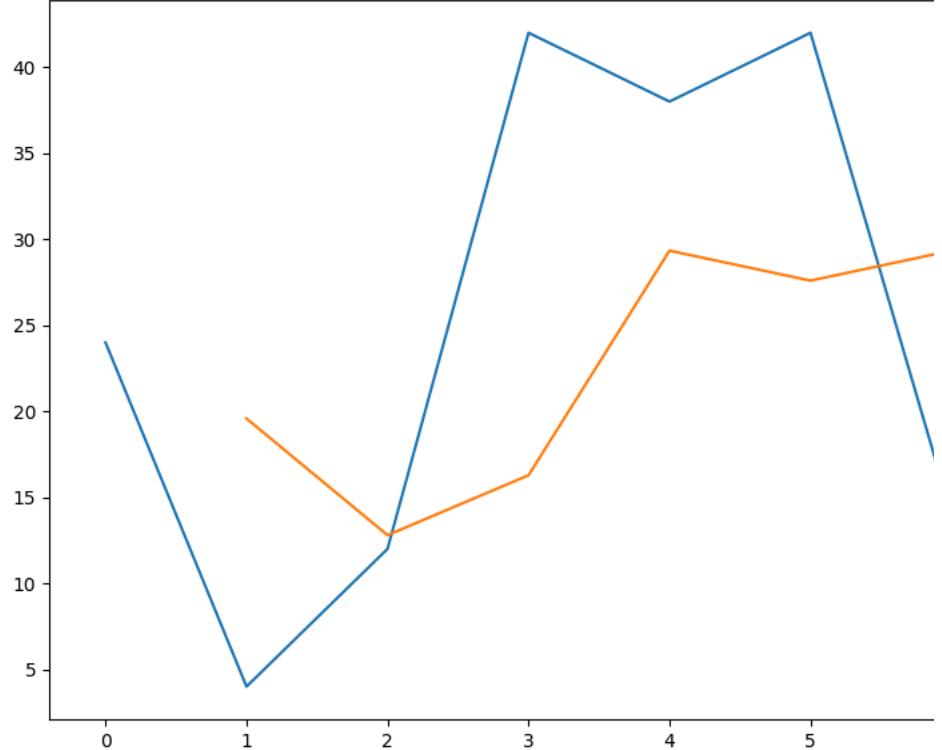
elasticsearch

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Time Series Forecasting of Pull Request Issues

Timeseries forecasting of pull requests



Timeseries Forecasting of Commits Issues using StatsModel based on past r

Observation Graph of Commits Issues

Number of stars

Number of forks

LangChainai-Langchain

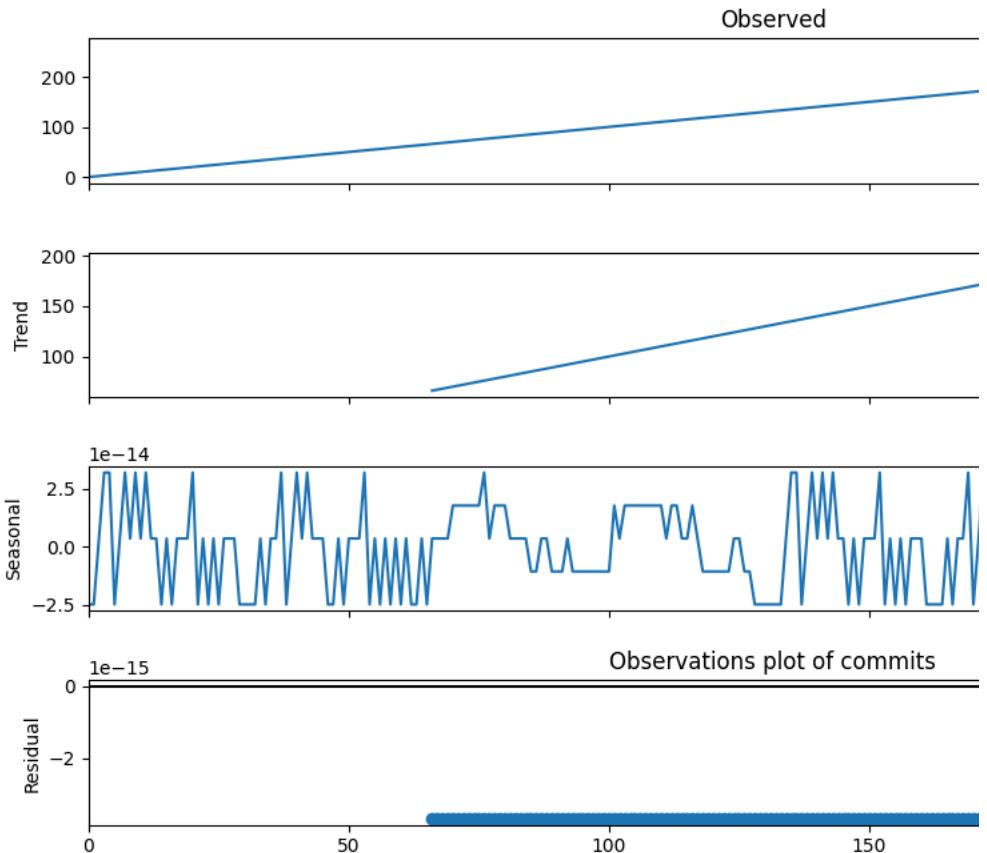
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

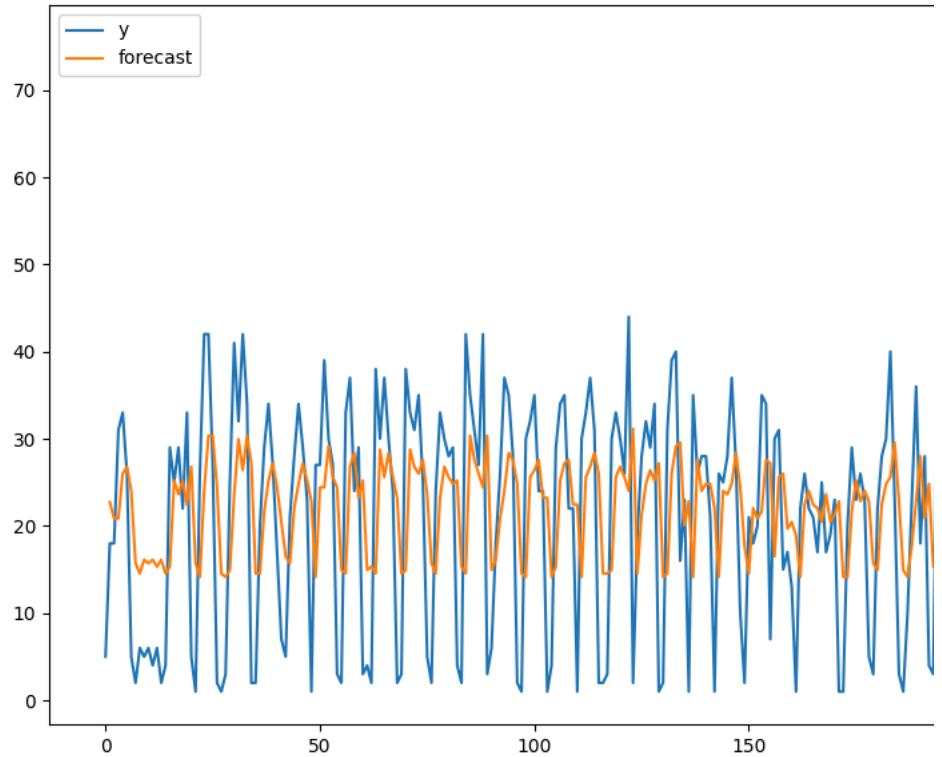
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Time Series Forecasting of Commits Issues

Timeseries forecasting of commits

**Timeseries Forecasting of Releases using Tensorflow and Keras LSTM**

Model Loss for Releases

Number of stars

Number of forks

LangChainai-Langchain

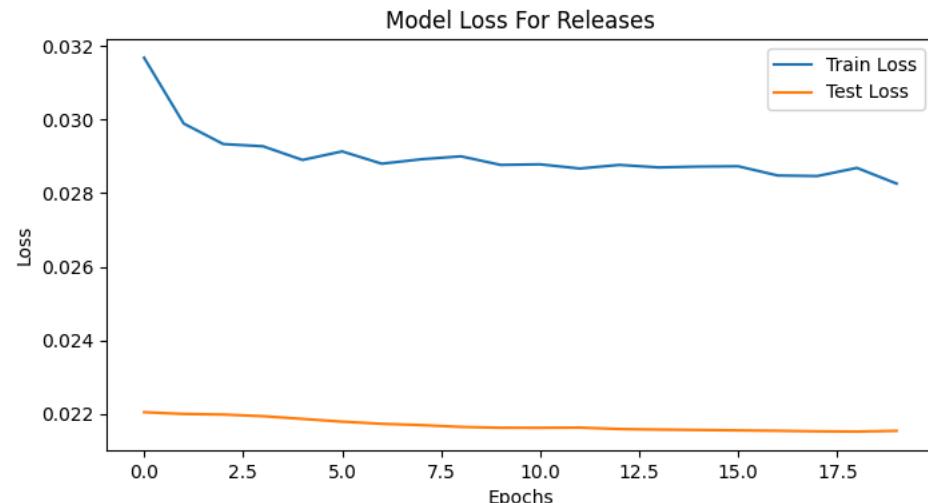
LangChainai-Langgraph

Microsoft-Autogen

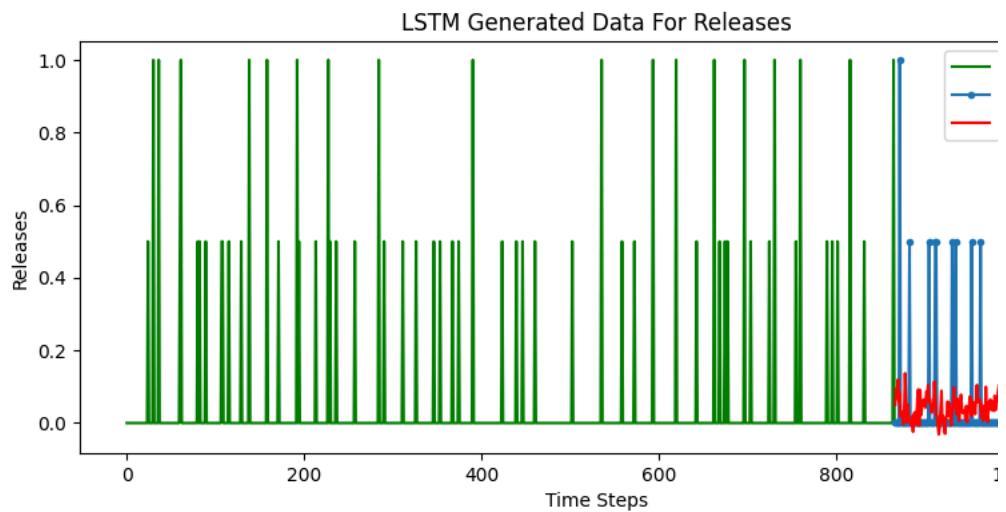
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LSTM Generated Data for Releases



Number of stars

Number of forks

LangChainai-Langchain

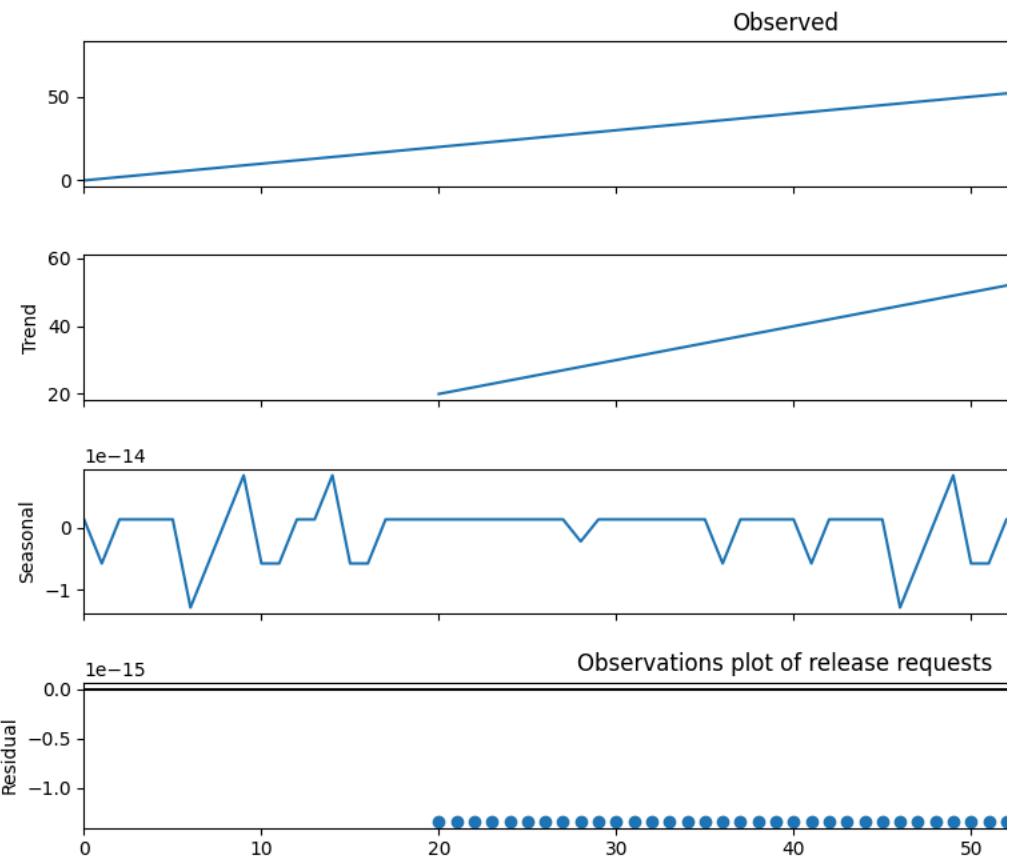
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

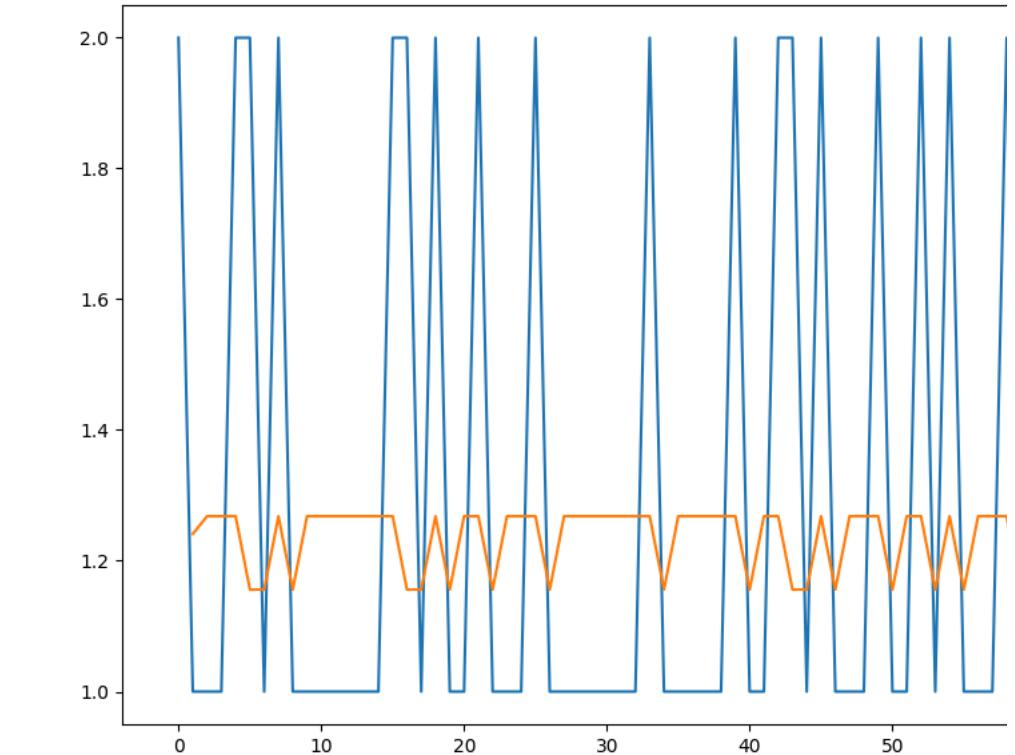
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Time Series Forecasting of Releases

Observations plot of release requests



Timeseries forecasting of release requests

Timeseries Forecasting of Releases using Facebook/Prophet

Forecast of Releases

Number of stars

Number of forks

LangChainai-Langchain

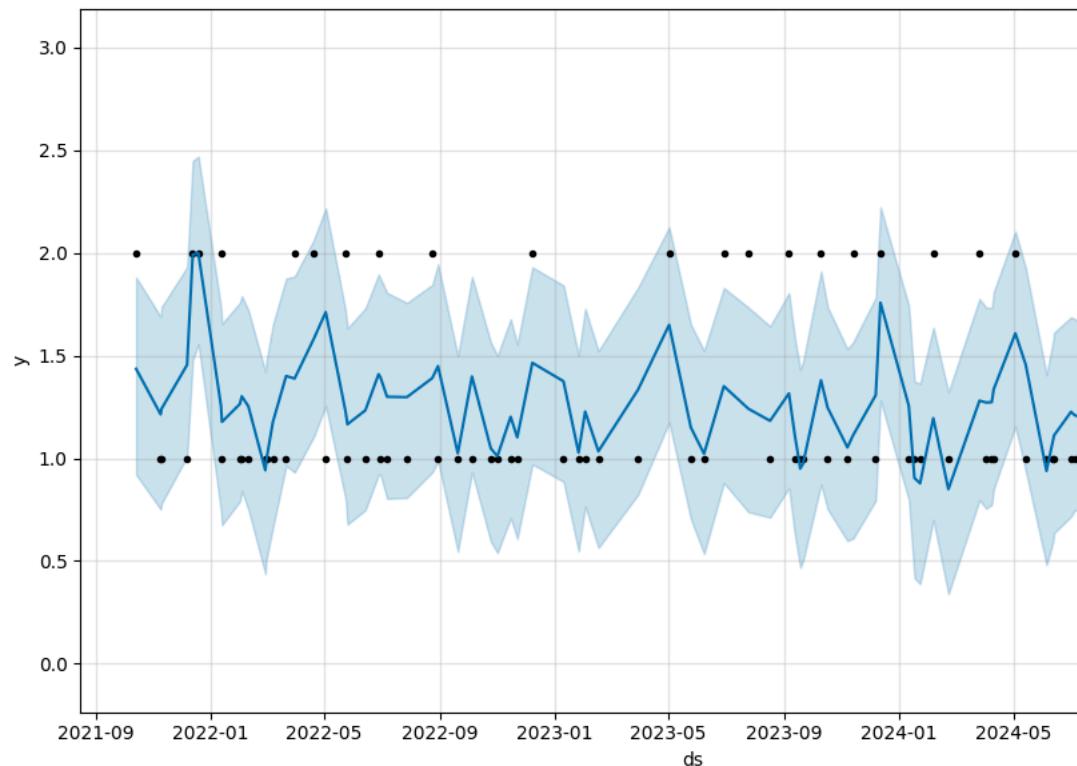
LangChainai-Langgraph

Microsoft-Autogen

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Forecast Components of Releases

Number of stars

Number of forks

LangChainai-Langchain

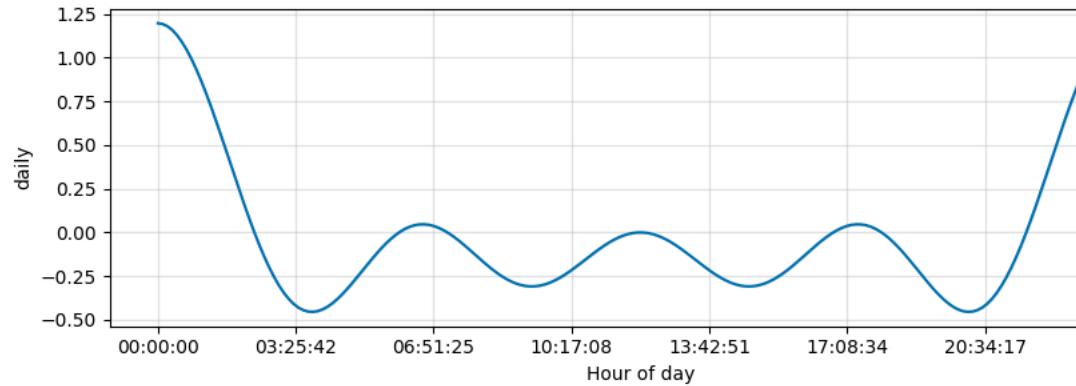
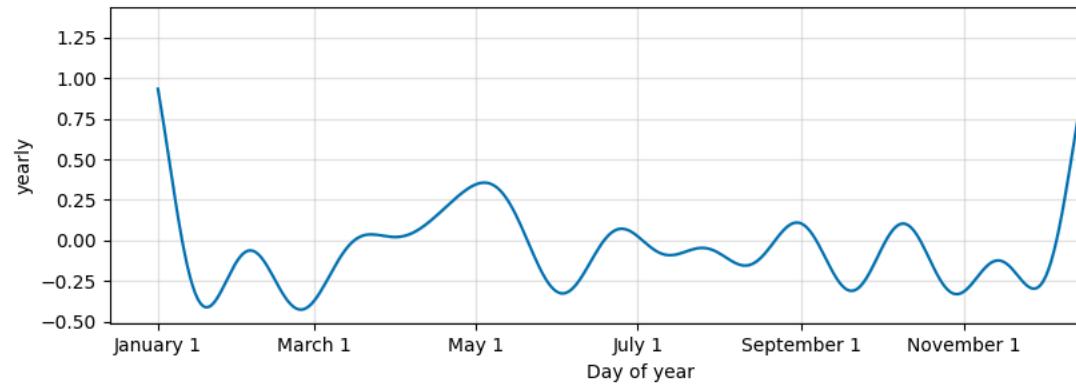
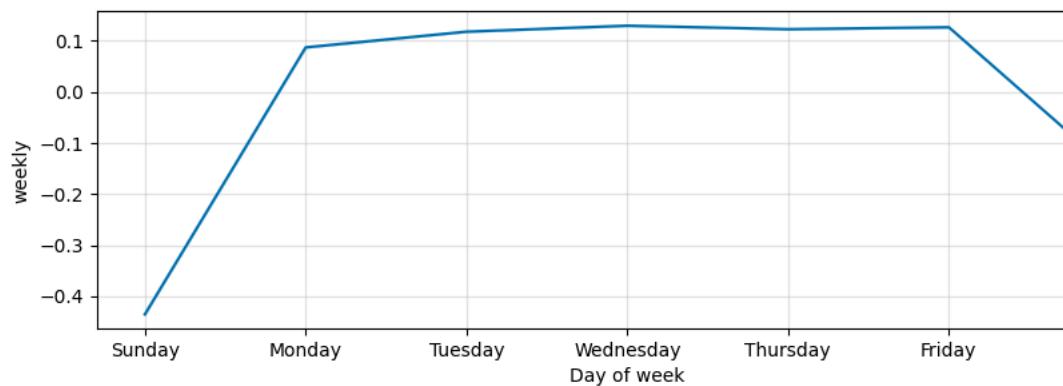
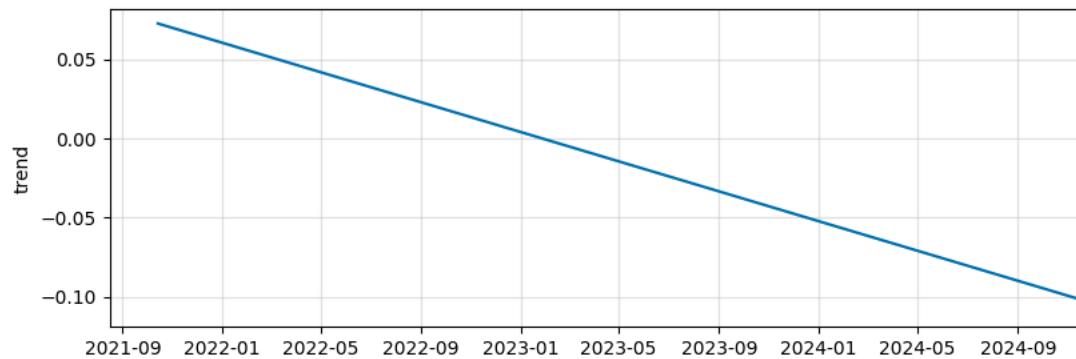
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

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Timeseries Forecasting of Contributors using Tensorflow and Keras LSTM

Model Loss for Contributors

Number of stars

Number of forks

LangChainai-Langchain

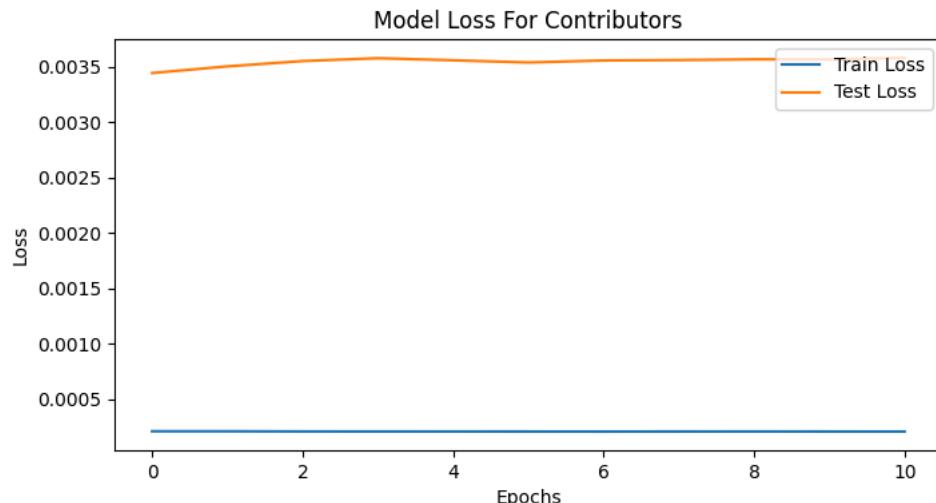
LangChainai-Langgraph

Microsoft-Autogen

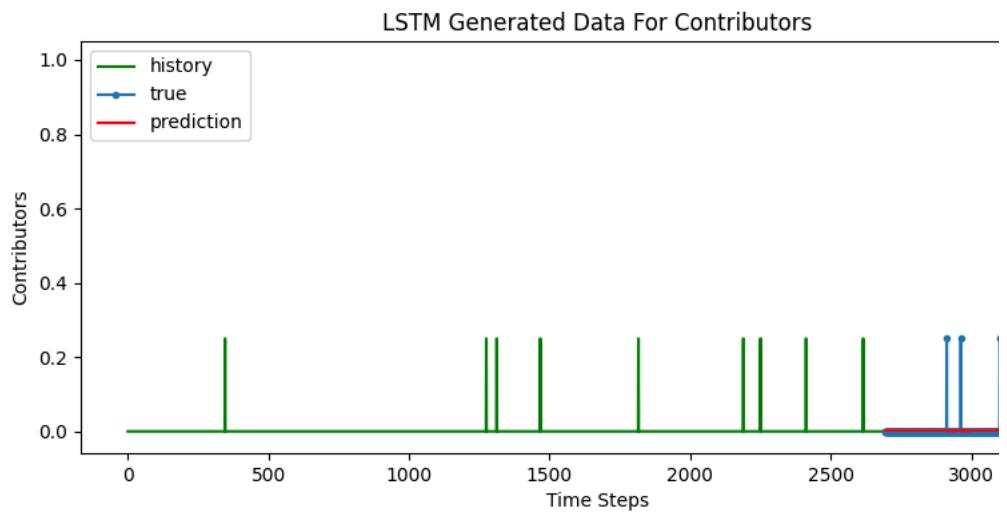
Openai-Cookbook

elasticsearch

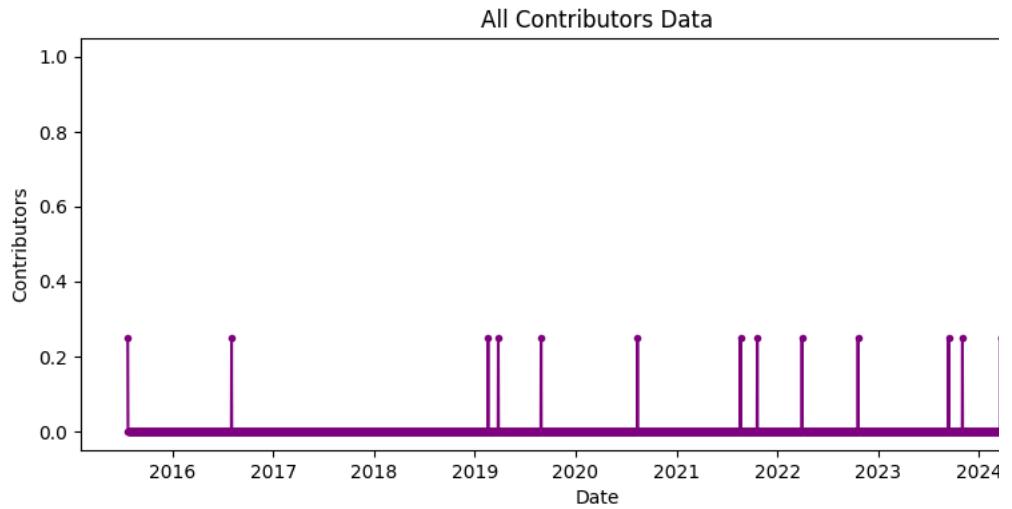
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LSTM Generated Data for Contributors



All Issues Data for Contributors

**Timeseries Forecasting of Contributors using StatsModel**

Observation Graph of Contributors

Number of stars

Number of forks

LangChainai-Langchain

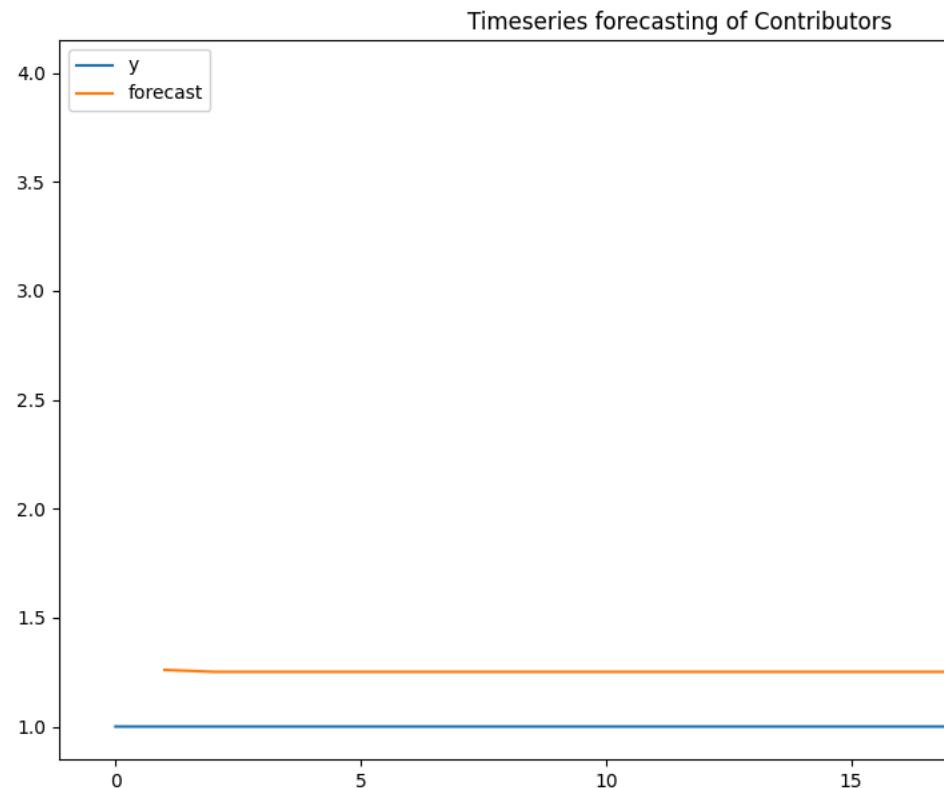
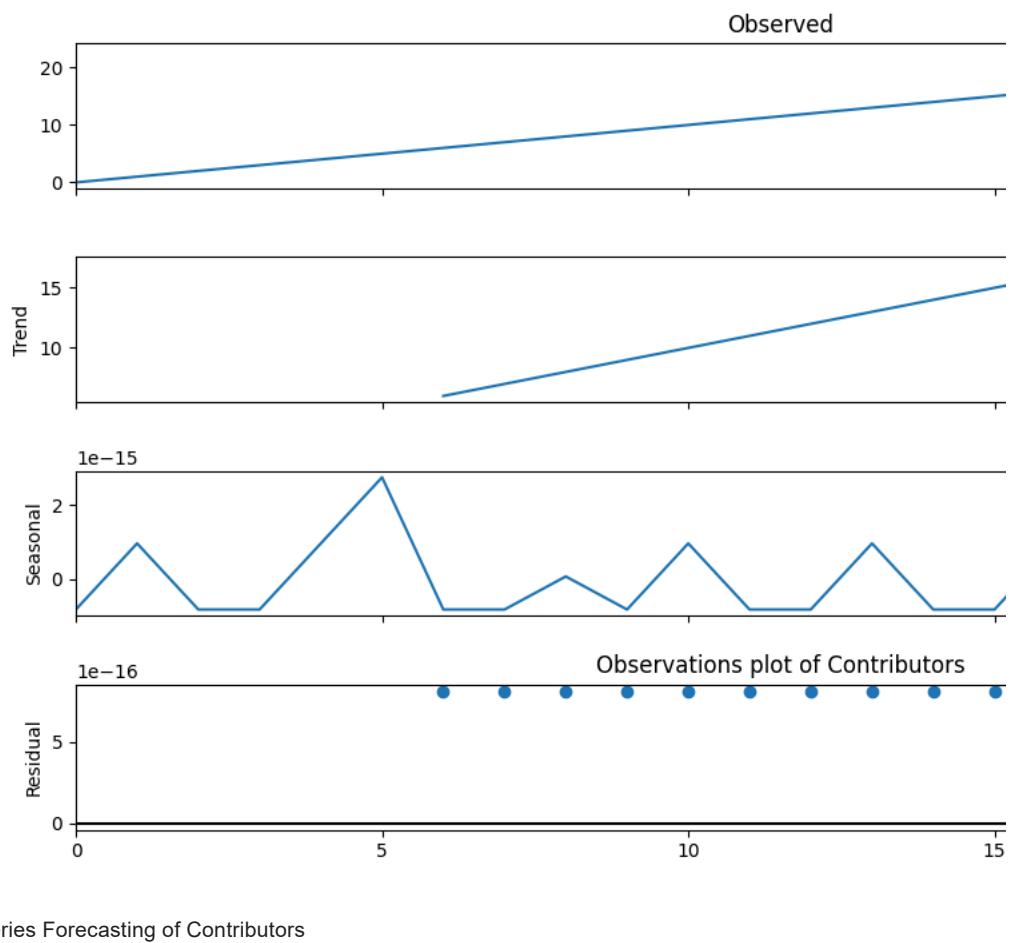
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

Pymilvus



Timeseries Forecasting of Contributors using Facebook/Prophet

Forecast of Contributors

Number of stars

Number of forks

LangChainai-Langchain

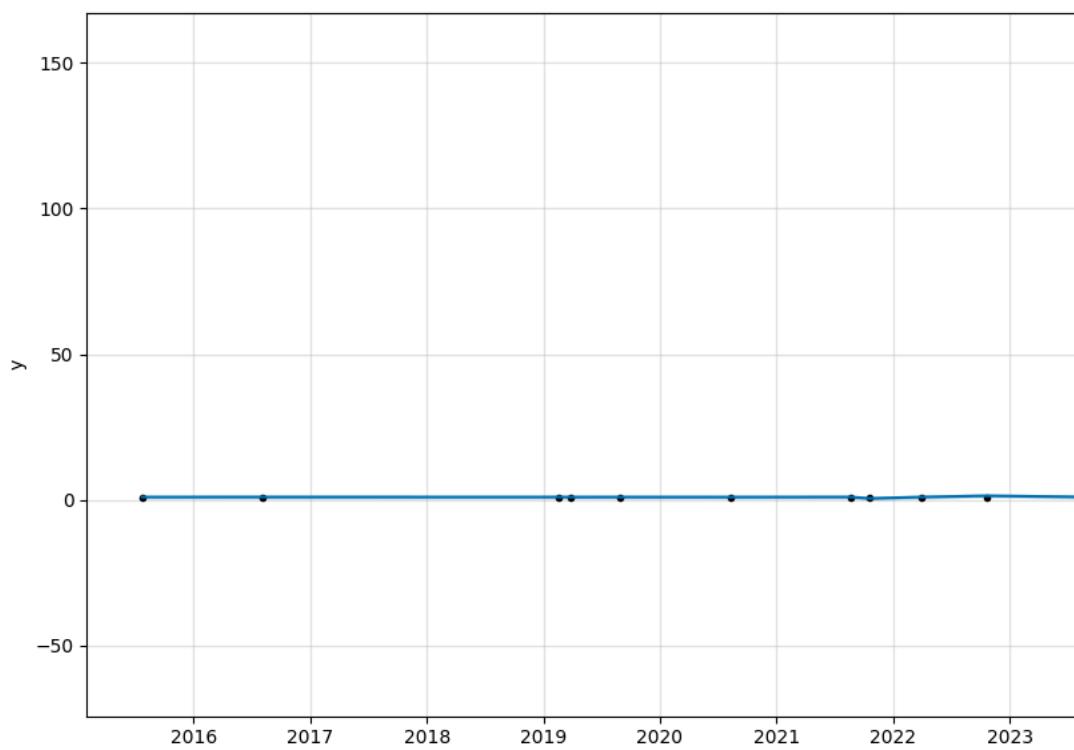
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

Pymilvus



Forecast Components of Contributors

Number of stars

Number of forks

LangChainai-Langchain

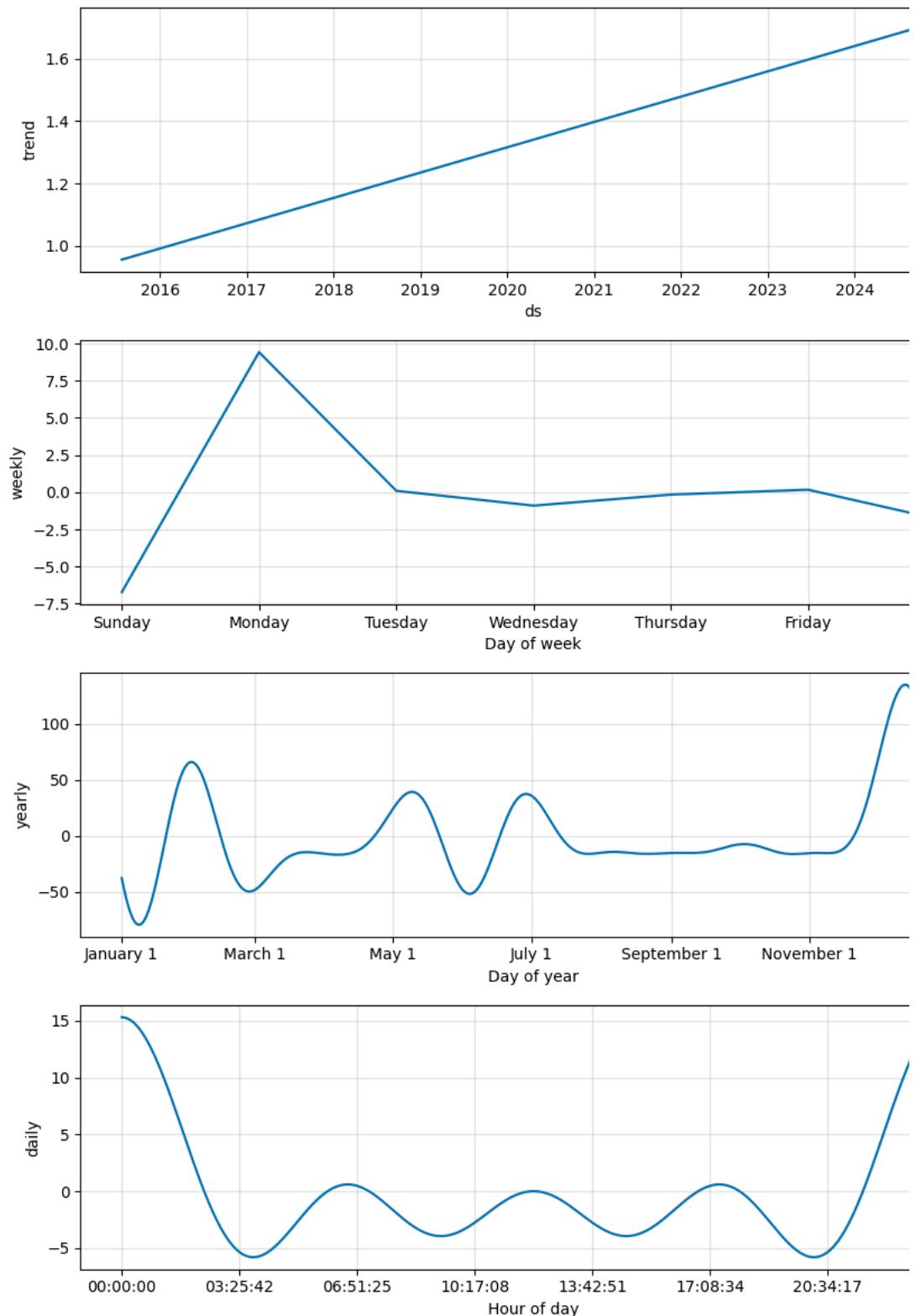
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

Pymilvus



Timeseries Forecasting of Branches using Tensorflow and Keras LSTM

Model Loss for Branches

Number of stars

Number of forks

LangChainai-Langchain

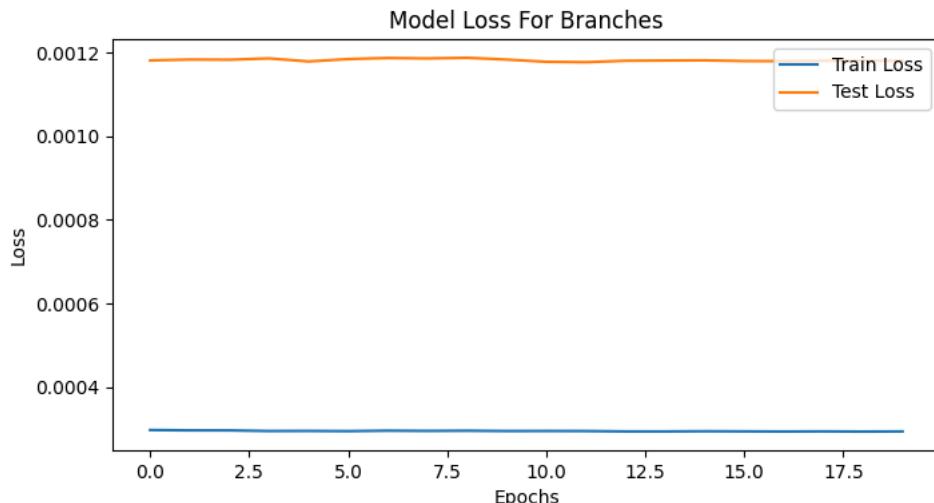
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Microsoft-Autogen

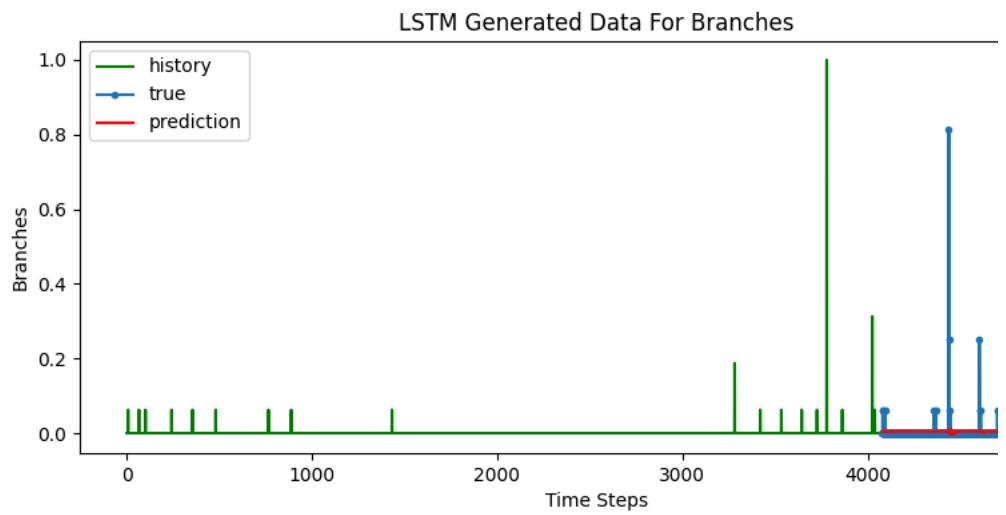
Openai-Cookbook

elasticsearch

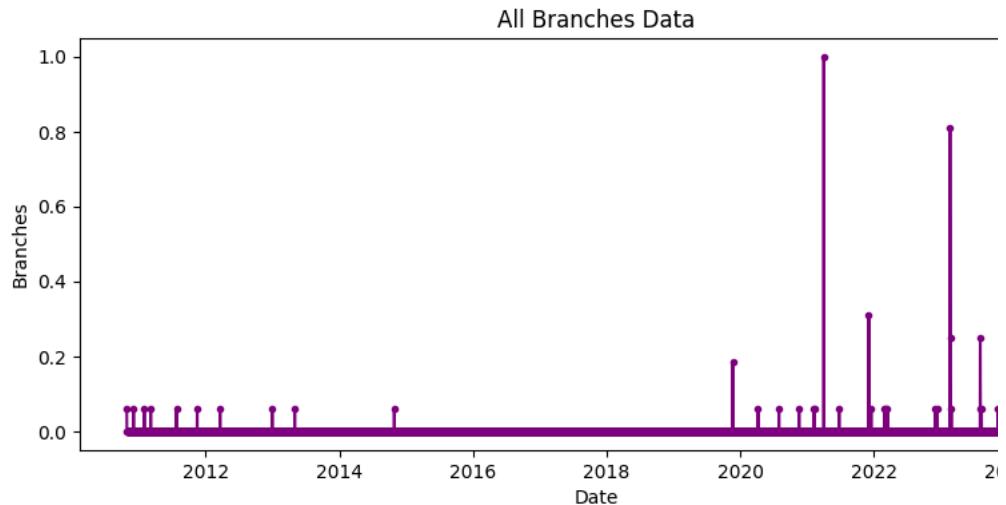
Pymilvus



LSTM Generated Data for Branches



All Issues Data for Branches



Number of stars

Number of forks

LangChainai-Langchain

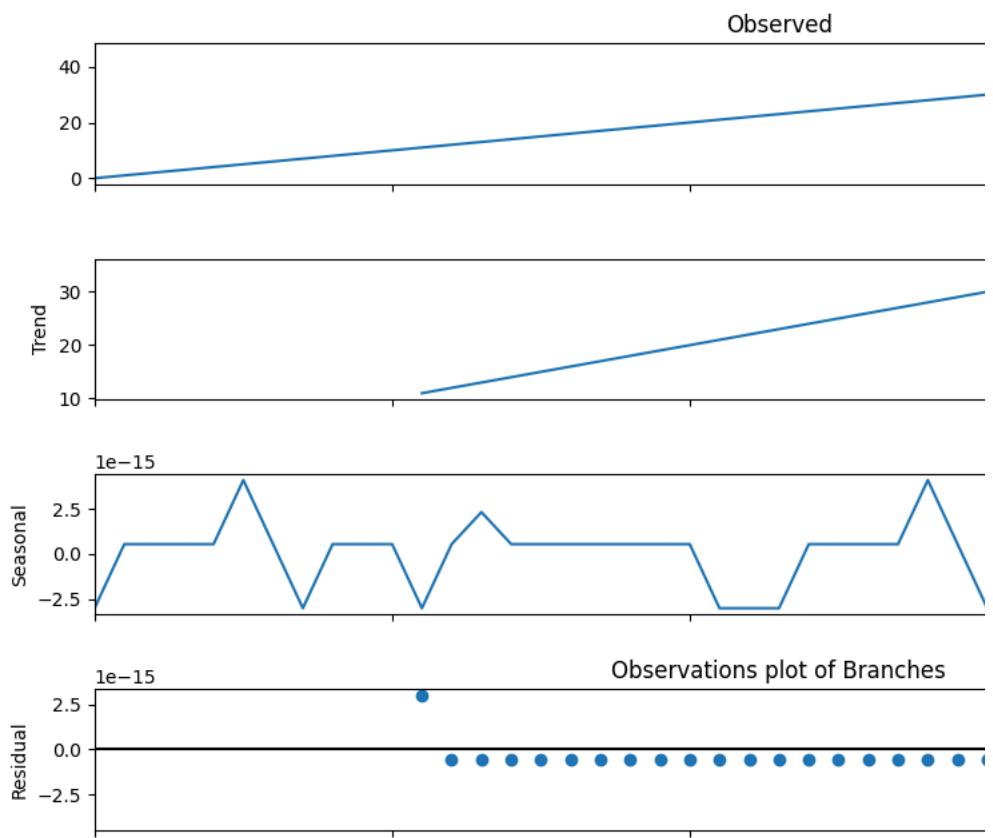
LangChainai-Langgraph

Microsoft-Autogen

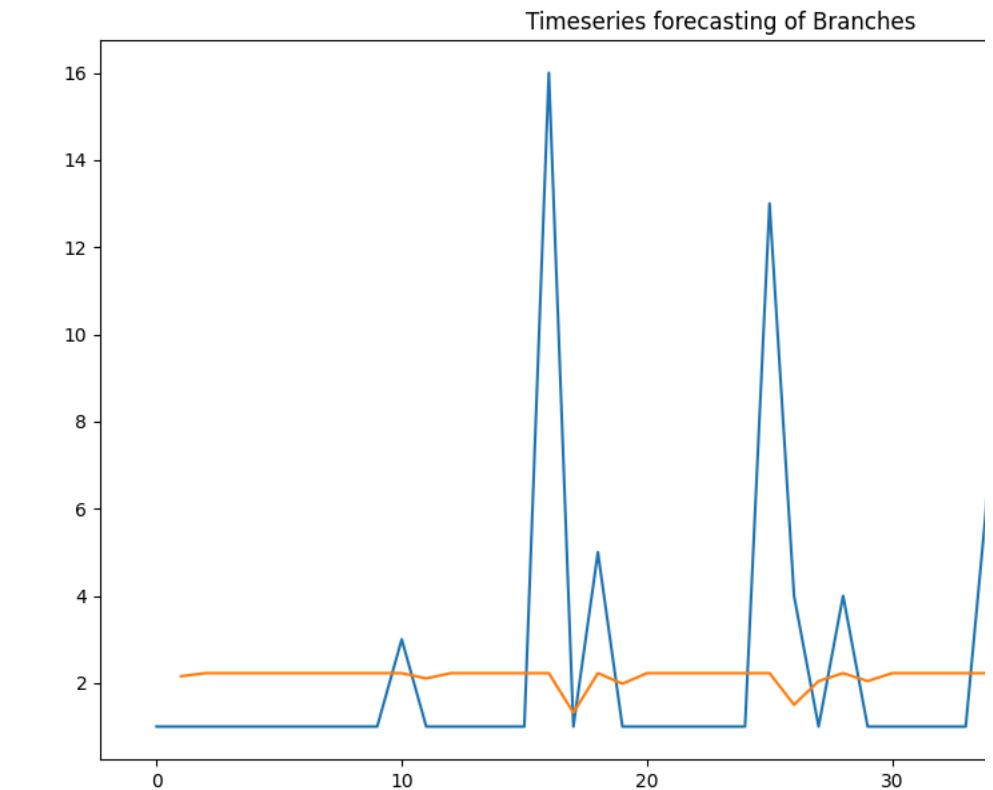
Openai-Cookbook

elasticsearch

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Time Series Forecasting of Branches



Timeseries Forecasting of Branches using Facebook/Prophet

Forecast of Branches

Number of stars

Number of forks

LangChainai-Langchain

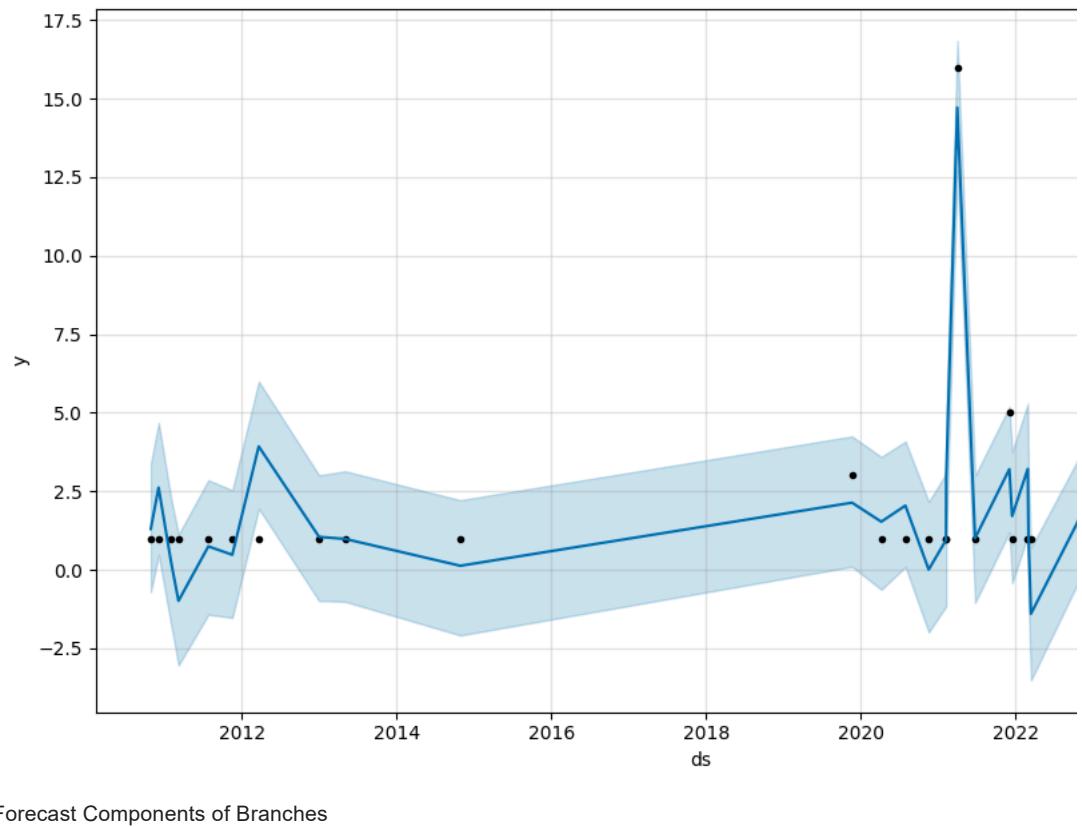
LangChainai-Langgraph

Microsoft-Autogen

Openai-Cookbook

elasticsearch

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Forecast Components of Branches

Number of stars

Number of forks

LangChainai-Langchain

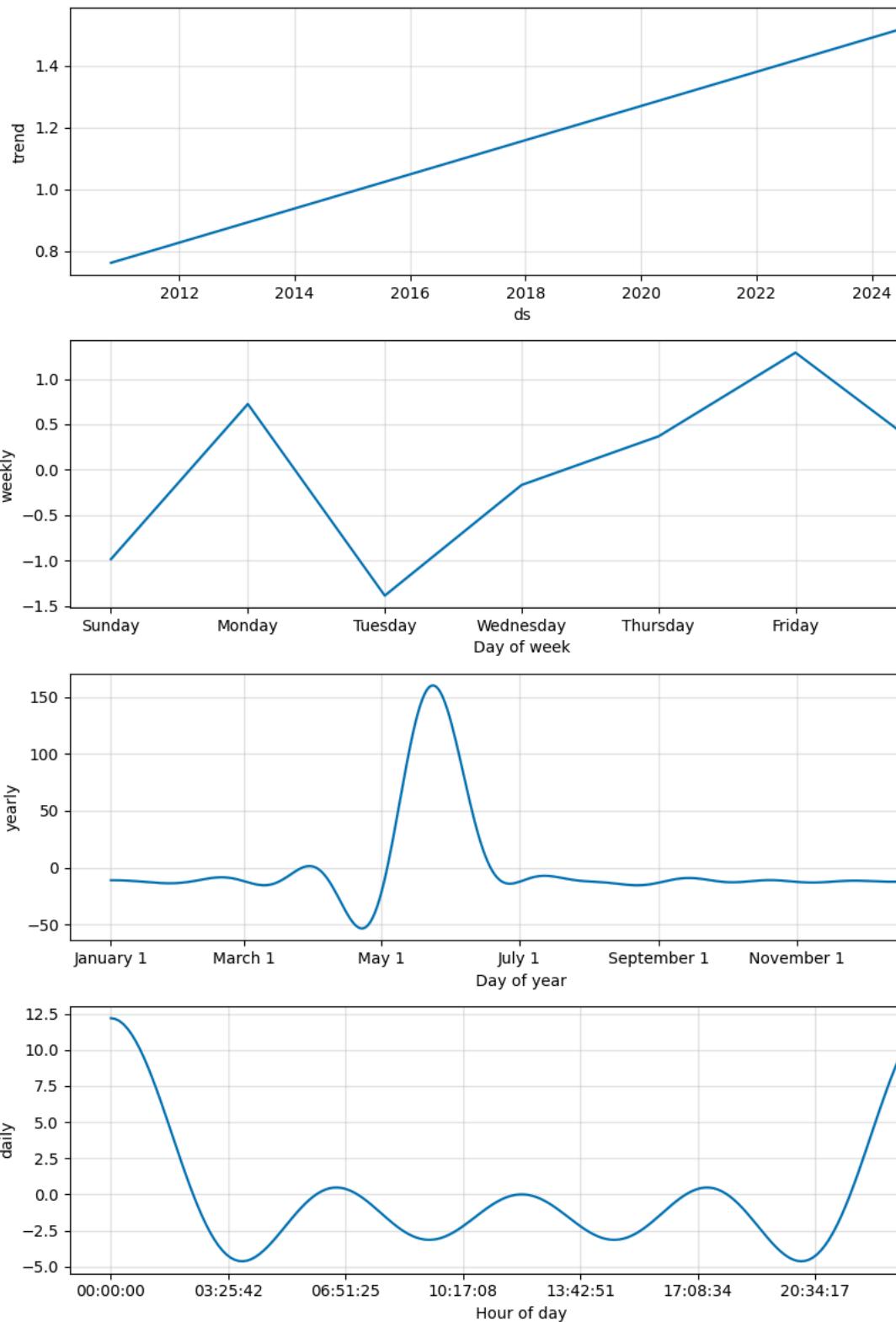
LangChainai-Langgraph

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Timeseries Forecasting

Number of stars

Number of forks

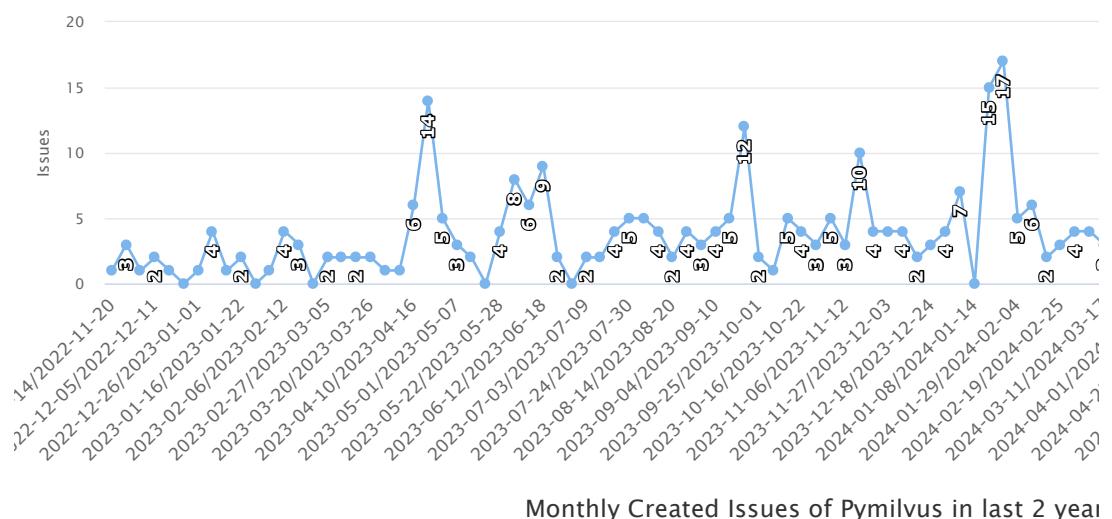
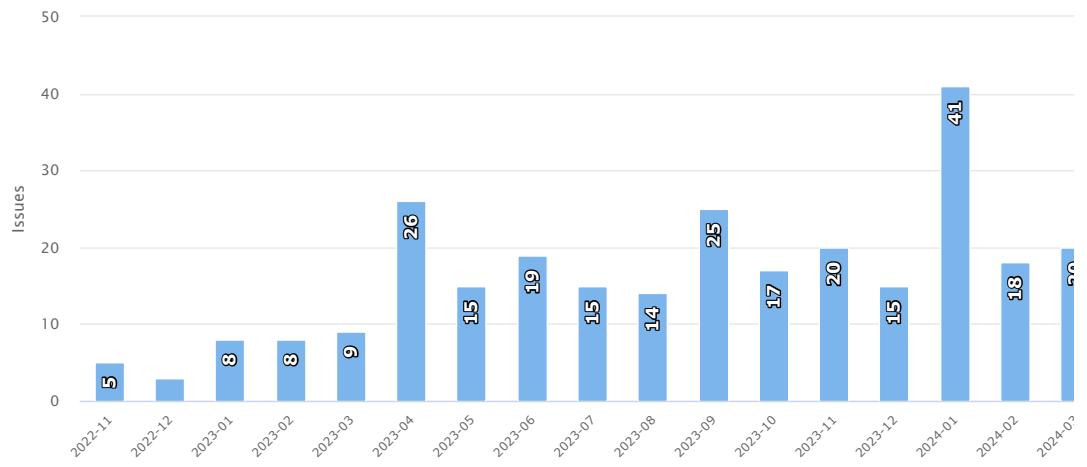
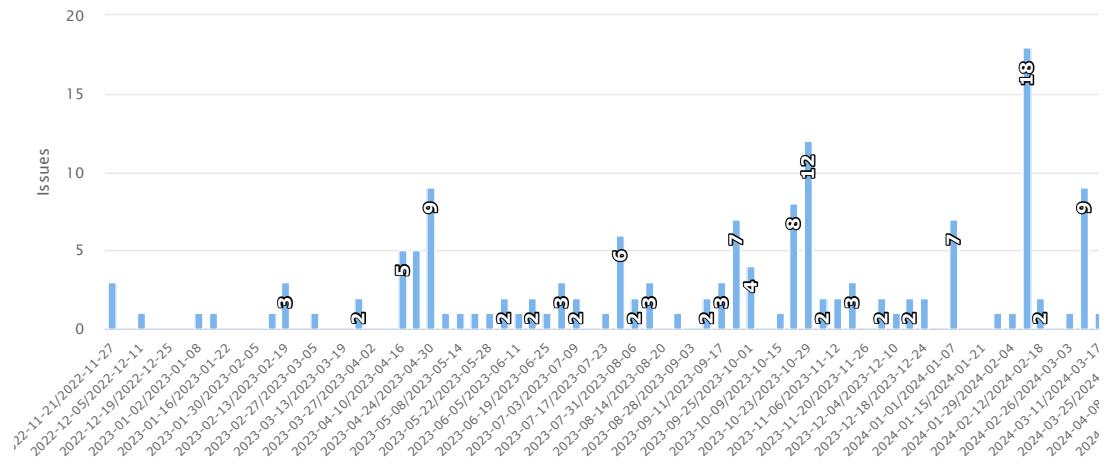
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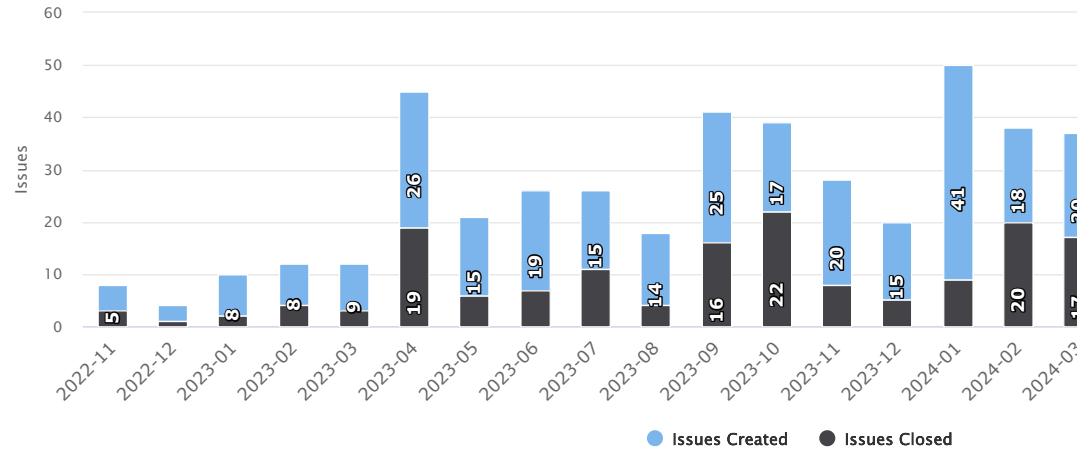
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Openai-Cookbook

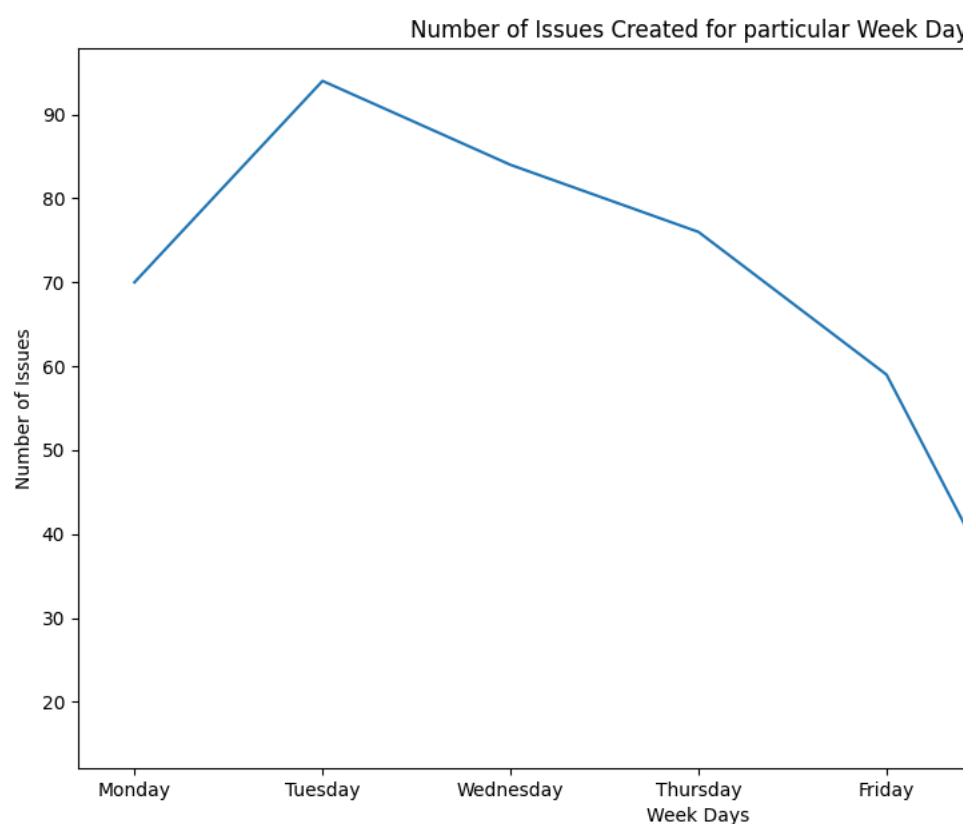
elasticsearch

Pymilvus**Issues of Pymilvus in last 2 years****Monthly Created Issues of Pymilvus in last 2 years****Weekly Closed Issues of Pymilvus in last 2 years**

Created and Closed Issues of Pymilvus in last 2 ye



The day of the week maximum number of issues created



The day of the week maximum number of issues Closed

Number of stars

Number of forks

LangChainai-Langchain

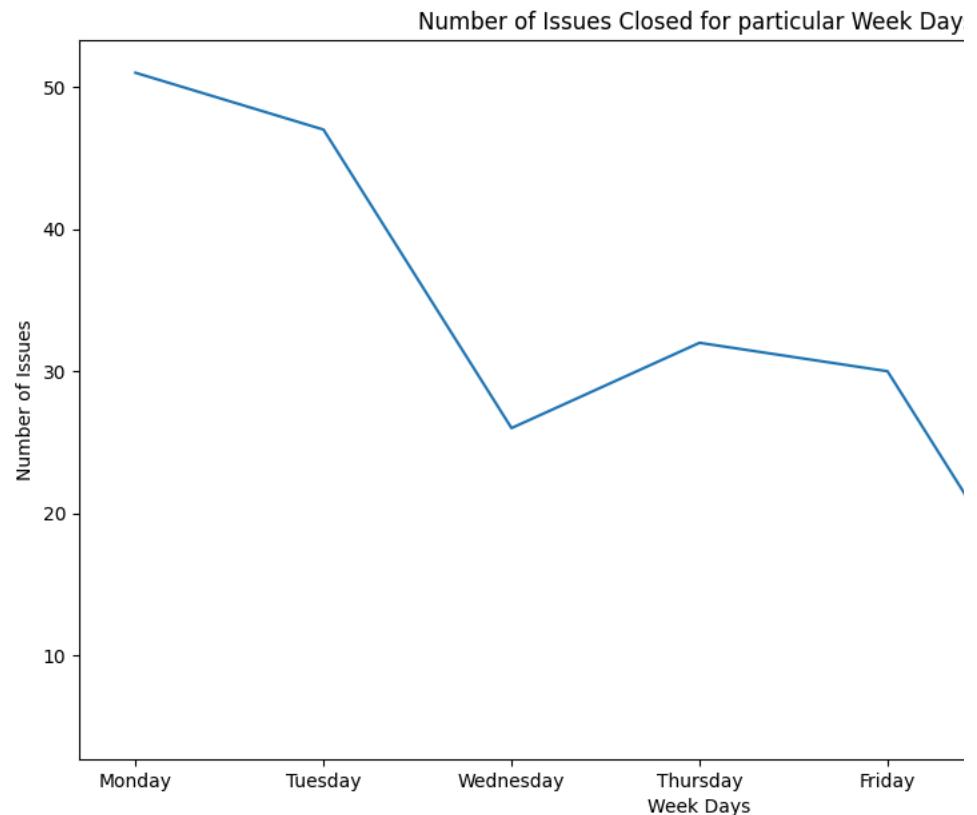
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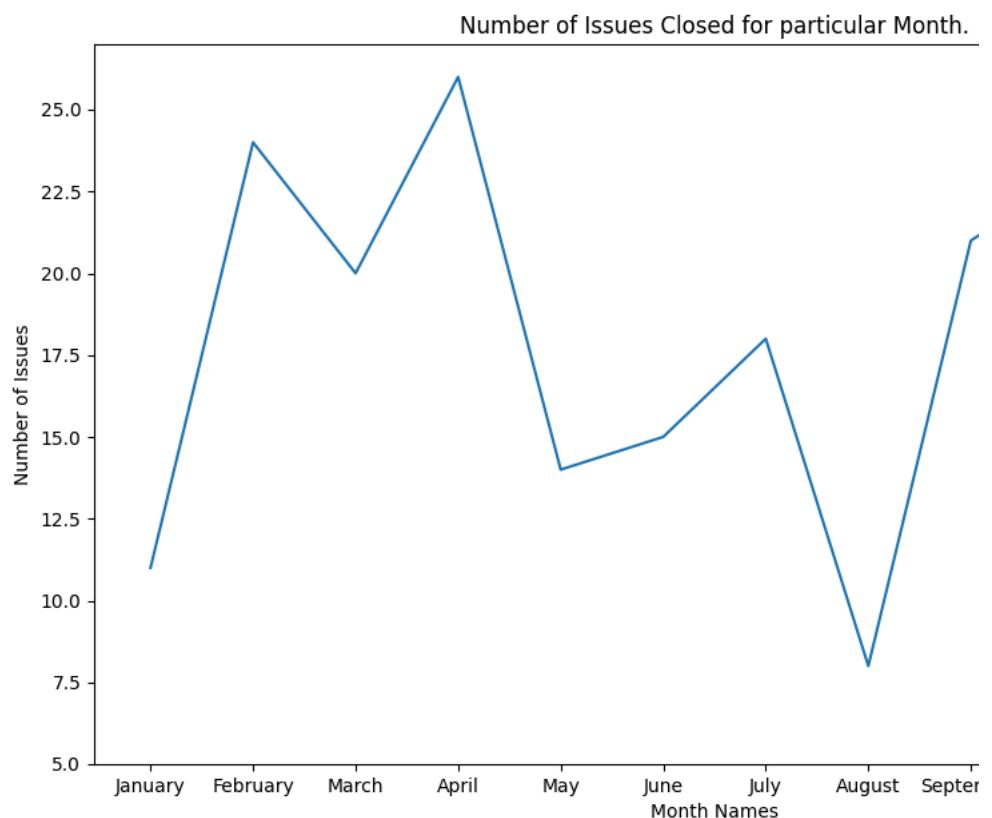
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The month of the year that has maximum number of issues closed



Timeseries Forecasting of Created Issues using Tensorflow and Keras LSTM

Model Loss for Created Issues

Number of stars

Number of forks

LangChainai-Langchain

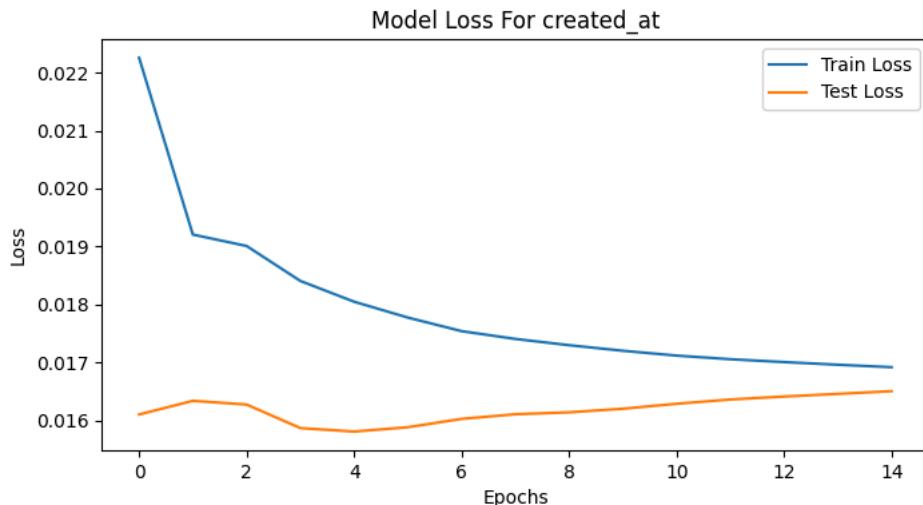
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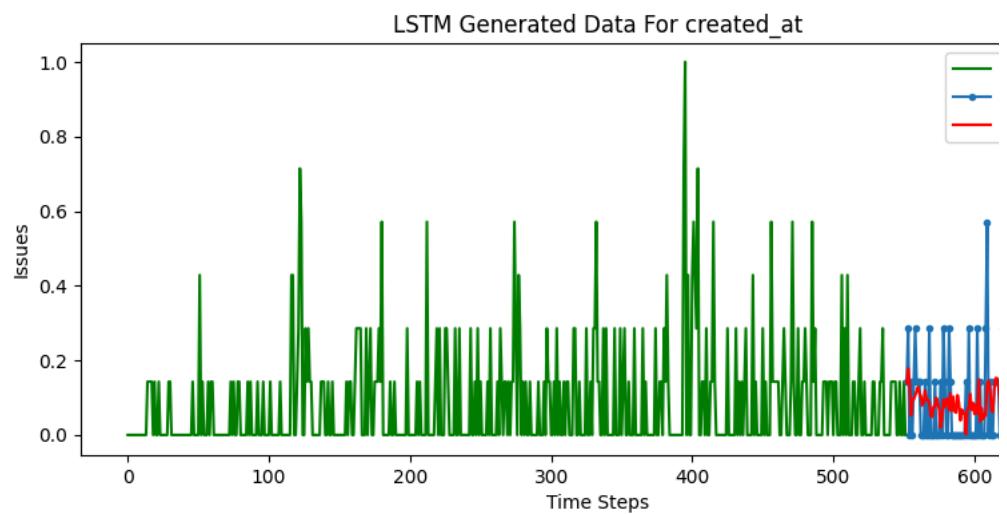
Openai-Cookbook

elasticsearch

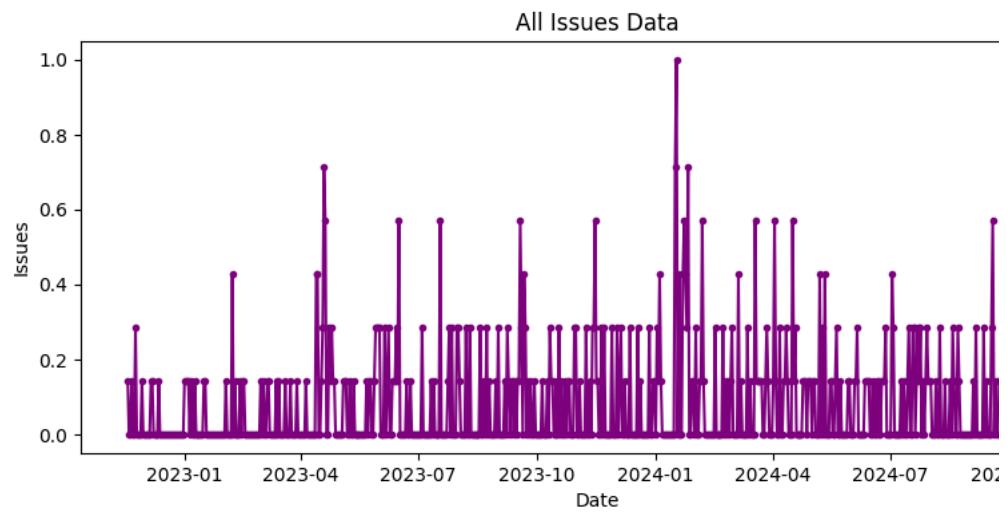
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LSTM Generated Data for Created Issues



All Issues Data for Created Issues



Timeseries Forecasting of Closed Issues using Tensorflow and Keras LSTM |

Model Loss for Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

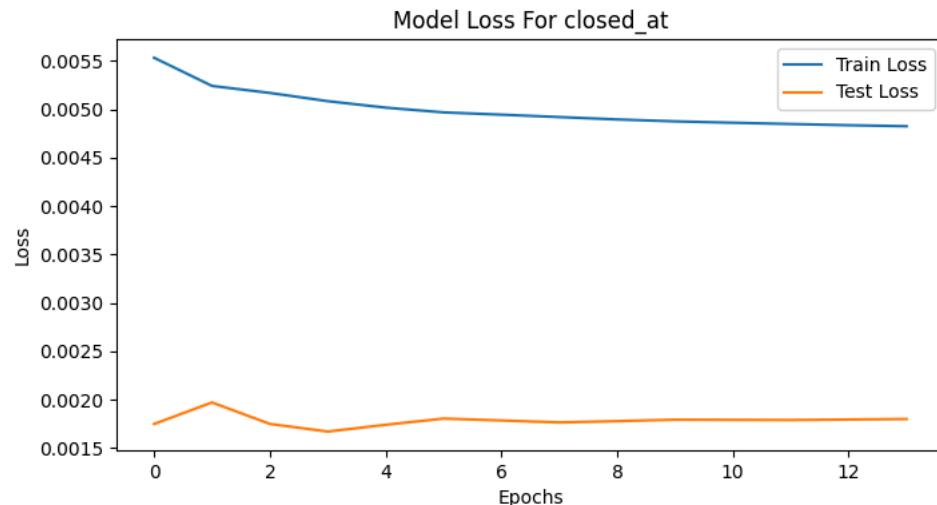
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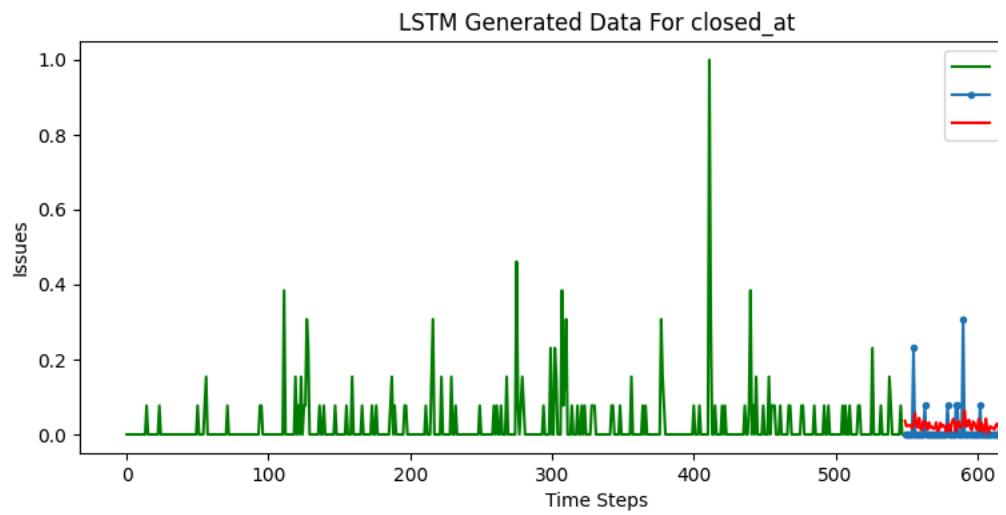
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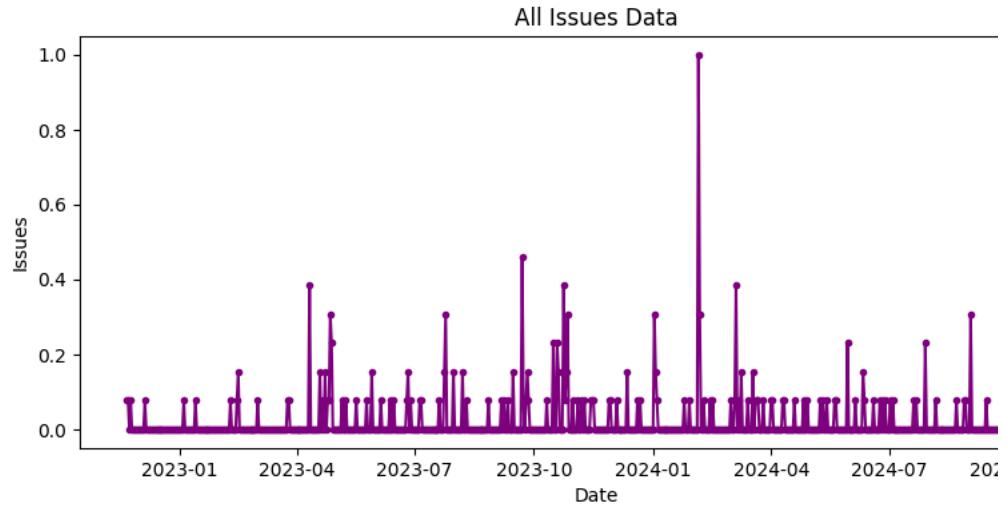
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LSTM Generated Data for Closed Issues



All Issues Data for Closed Issues



Timeseries Forecasting of Pull Requests using Tensorflow and Keras LSTM

Model Loss for Pull Requests

Number of stars

Number of forks

LangChainai-Langchain

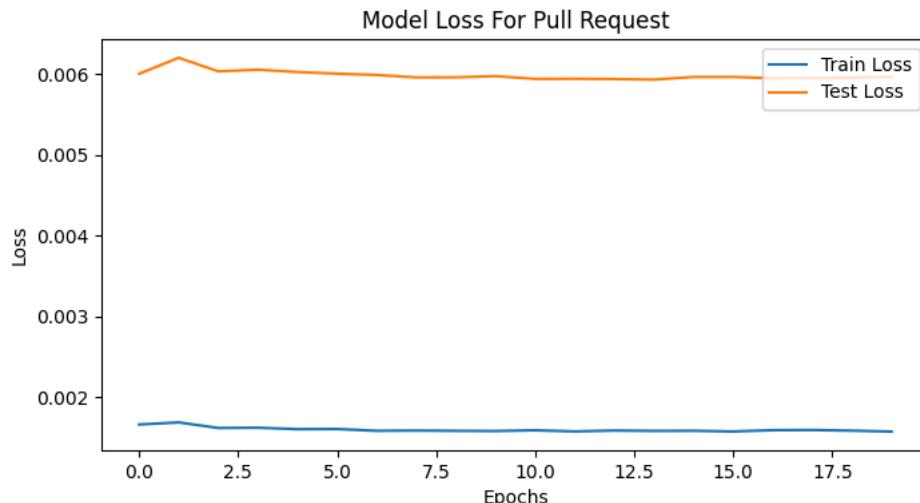
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Microsoft-Autogen

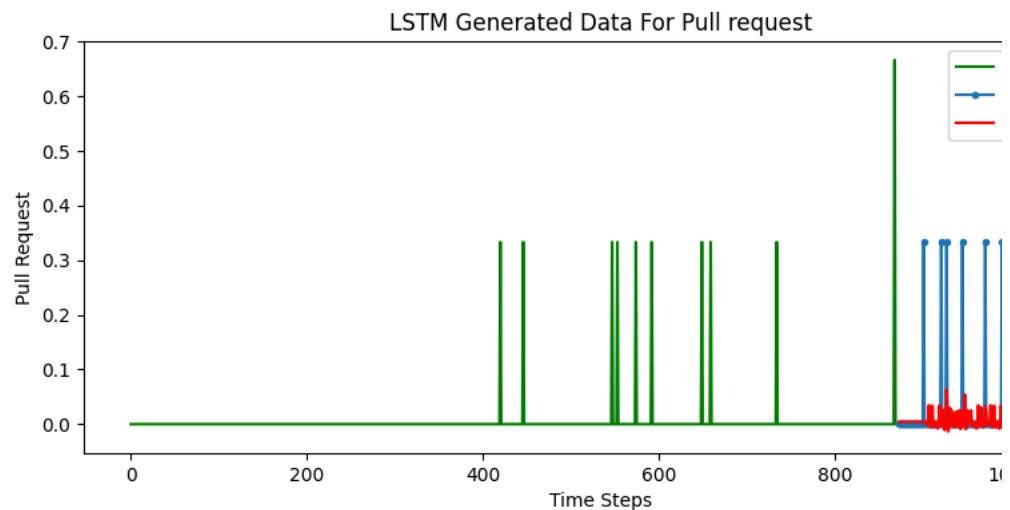
Openai-Cookbook

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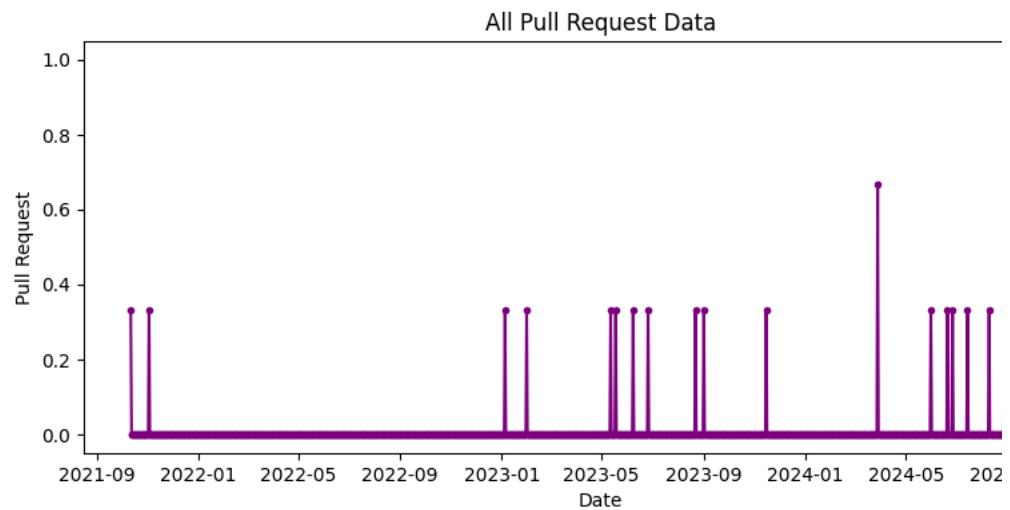
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LSTM Generated Data for Pull Requests



All Issues Data for Pull Requests



Timeseries Forecasting of Commits using Tensorflow and Keras LSTM based

Model Loss for Commits

Number of stars

Number of forks

LangChainai-Langchain

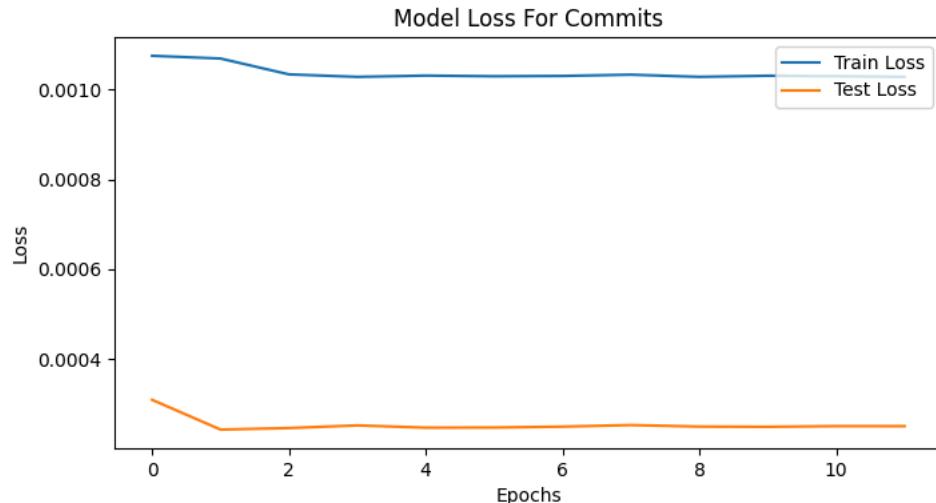
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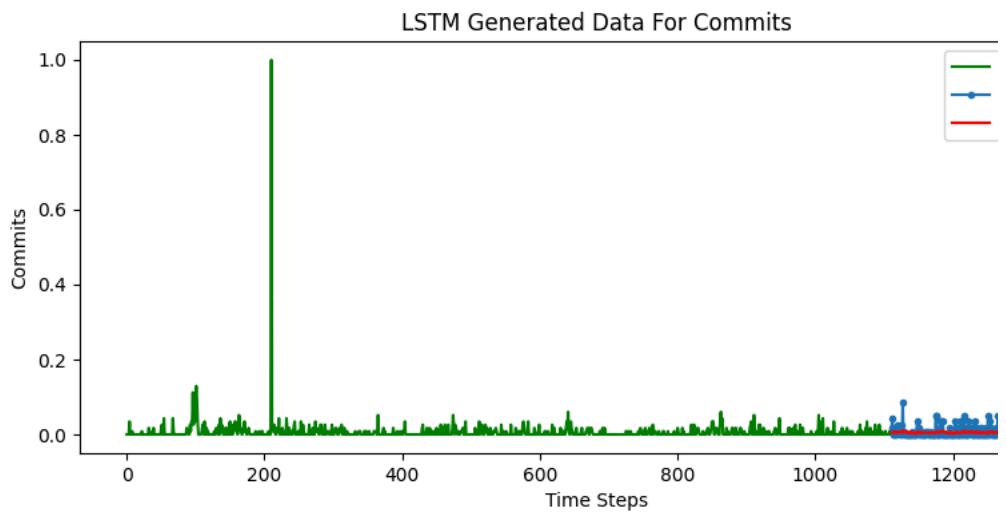
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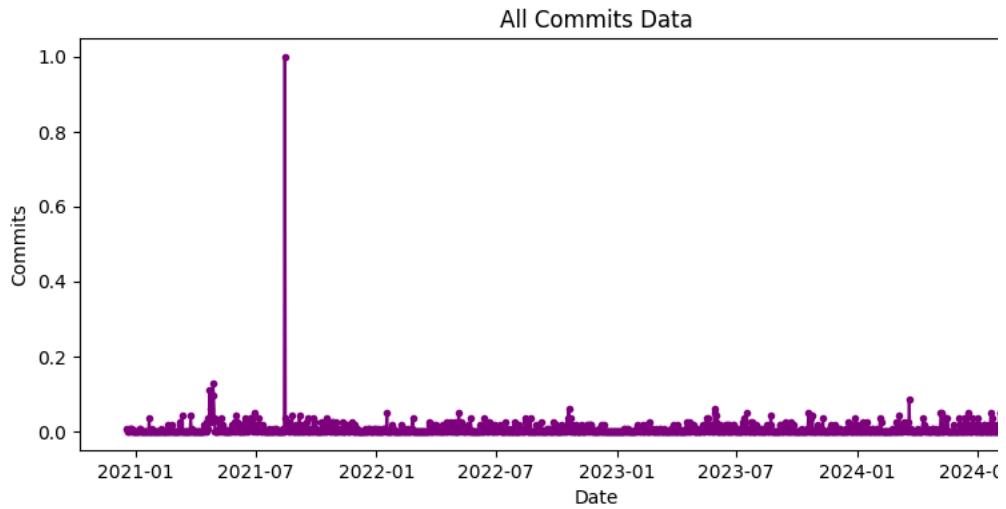
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LSTM Generated Data for Commits



All Issues Data for Commits



Timeseries Forecasting of Created Issues using Facebook/Prophet based on Forecast of Created Issues

Number of stars

Number of forks

LangChainai-Langchain

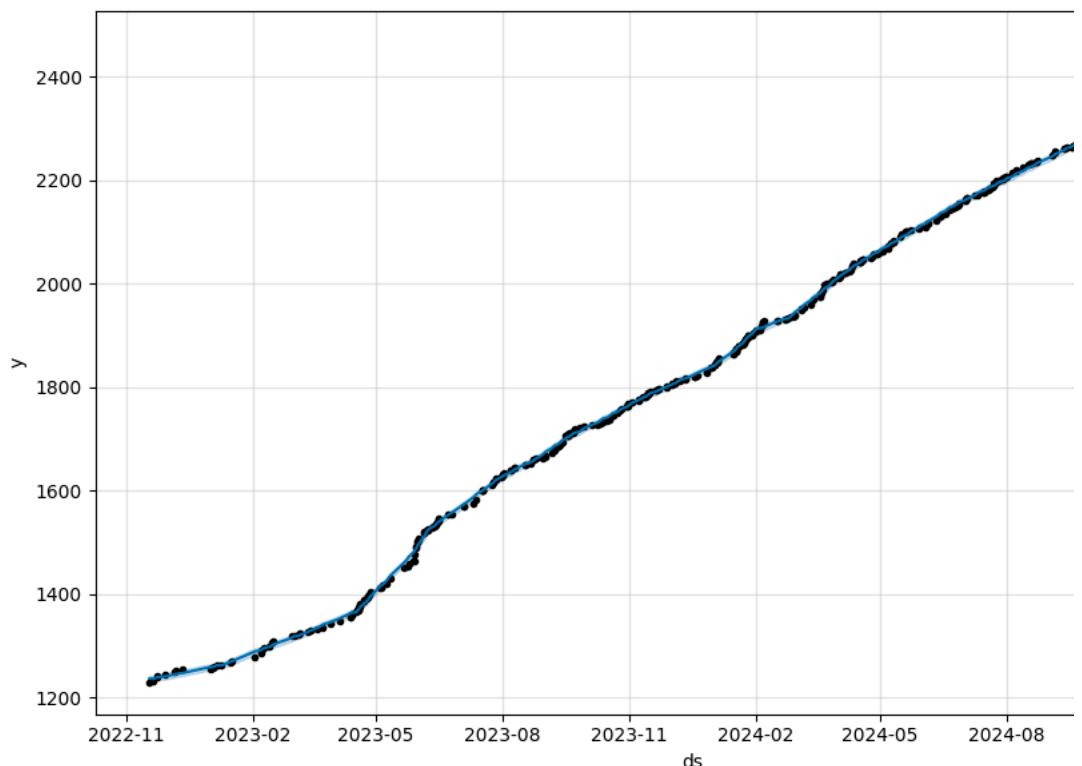
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Microsoft-Autogen

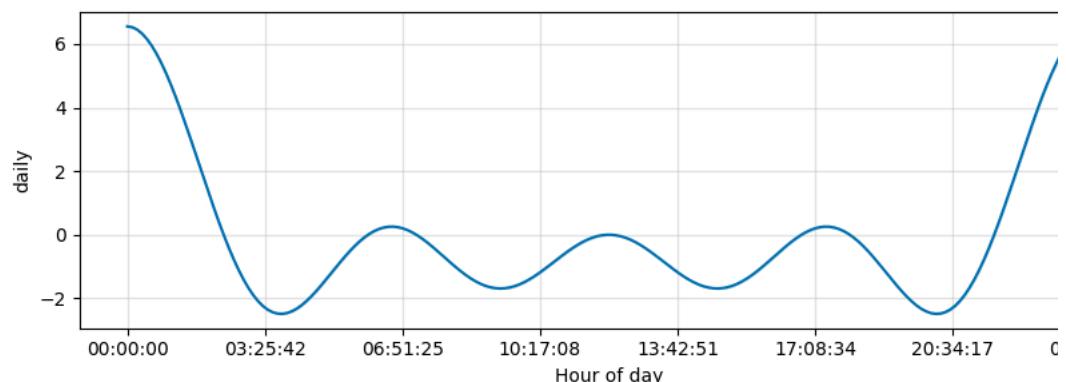
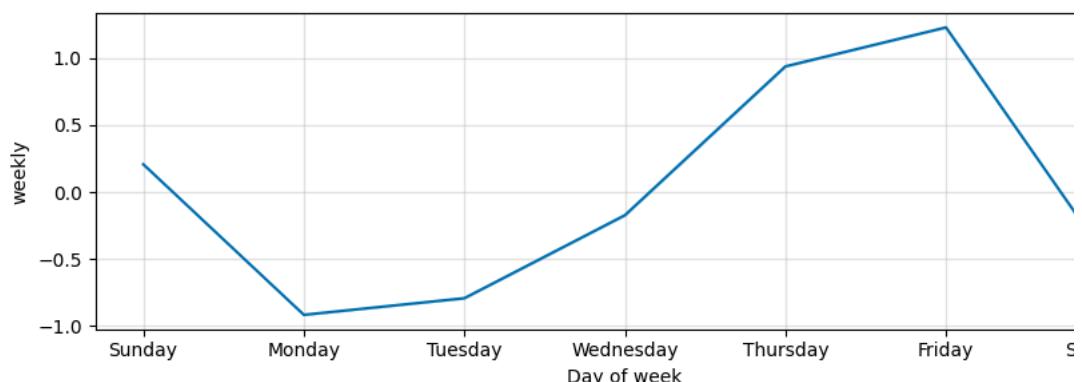
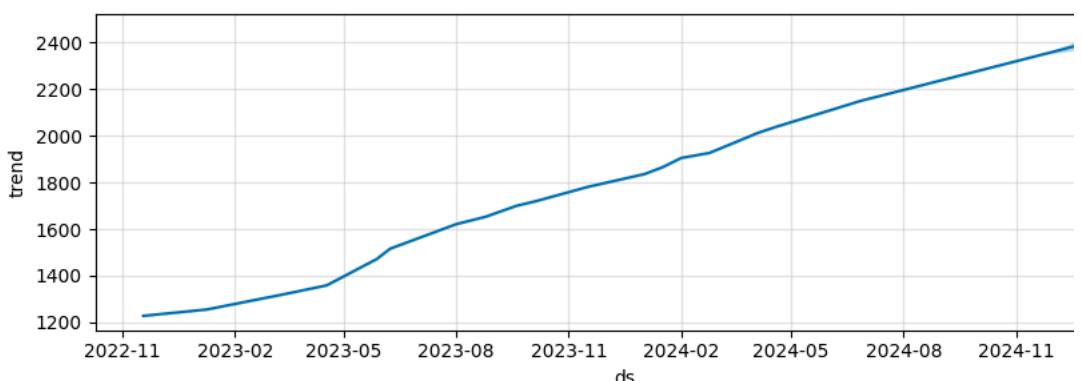
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Forecast Components of Created Issues



Timeseries Forecasting of Closed Issues using Facebook/Prophet based on |

Forecast of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

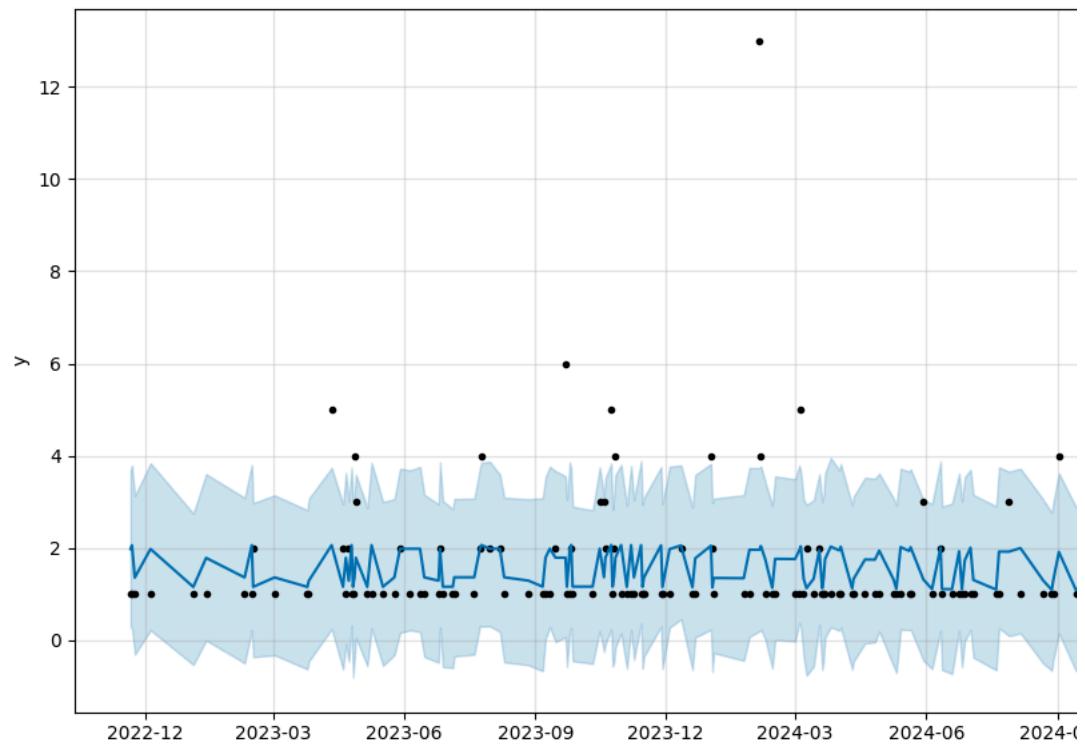
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Forecast Components of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

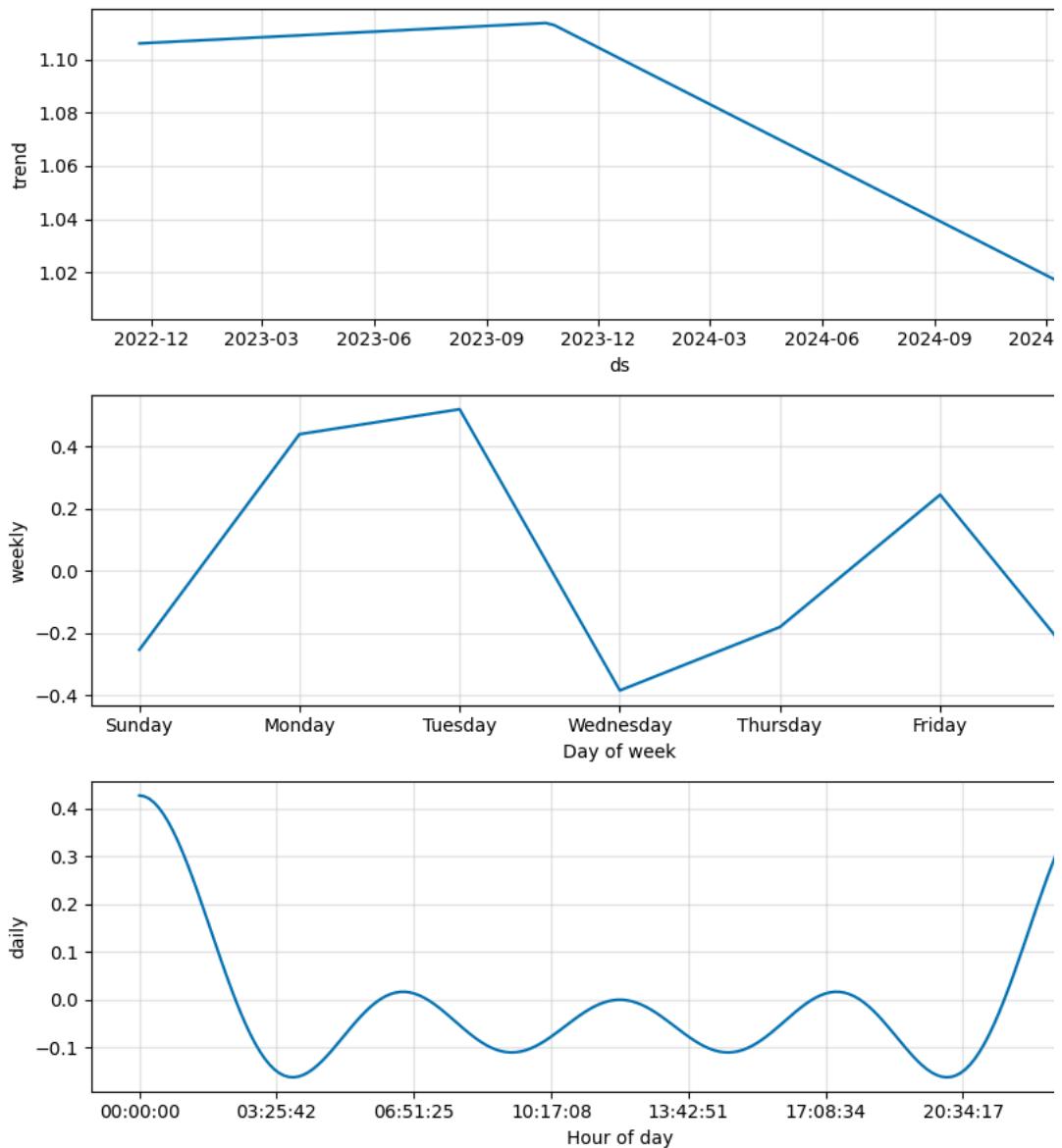
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Timeseries Forecasting of Pull Request using Facebook/Prophet based on past history
Forecast of Pull Request

Number of stars

Number of forks

LangChainai-Langchain

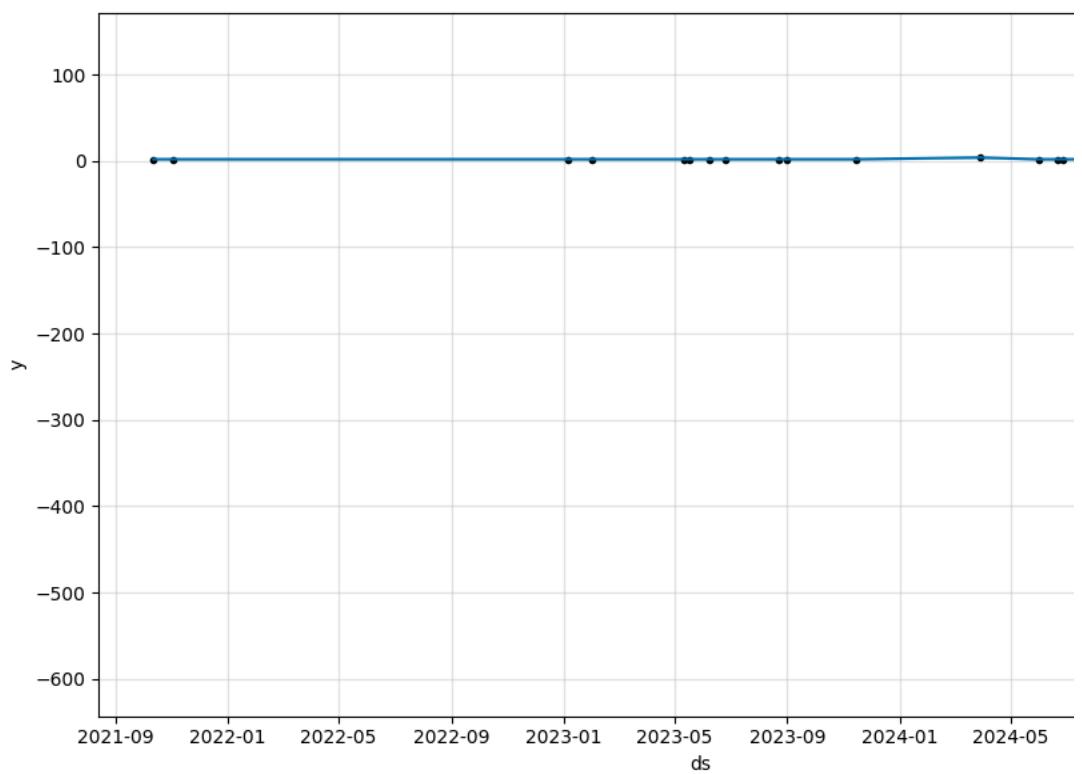
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Forecast Components of Pull Request

Number of stars

Number of forks

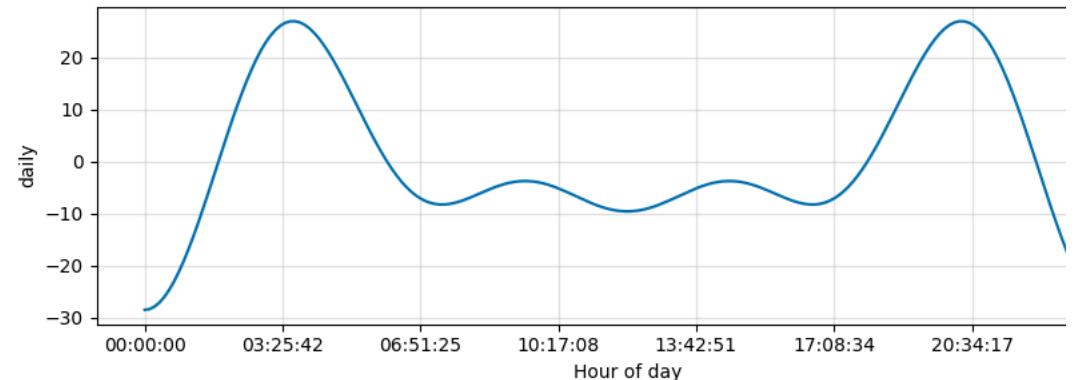
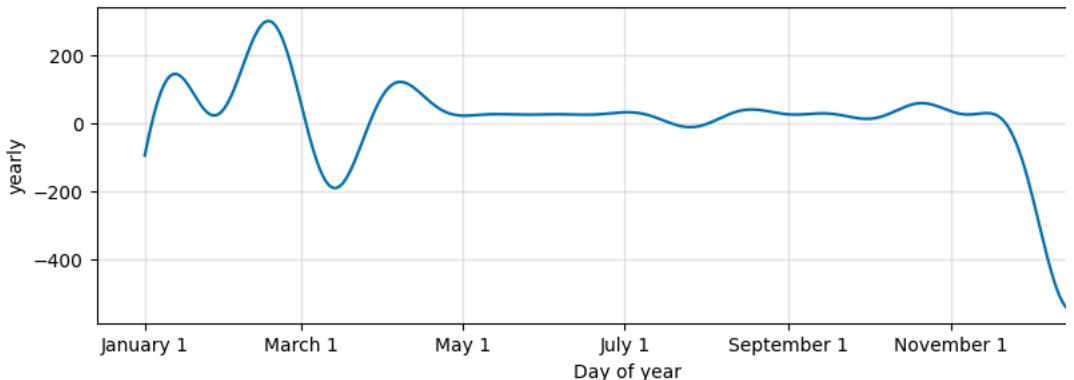
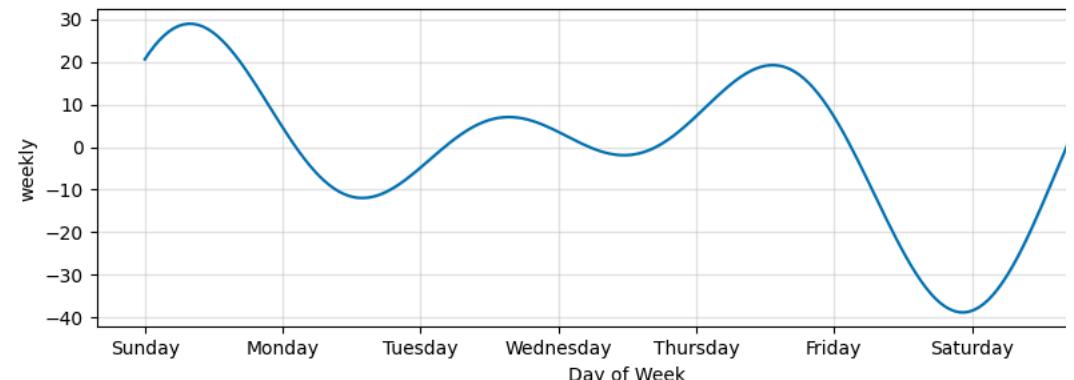
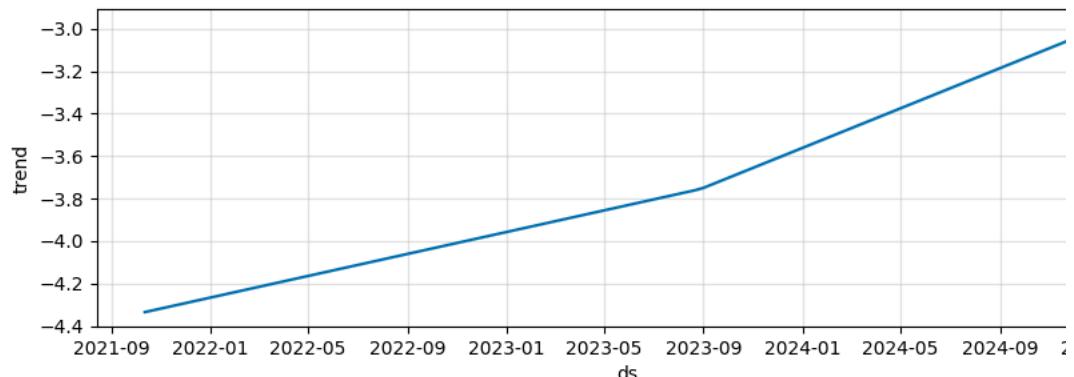
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Timeseries Forecasting of Commits using Facebook/Prophet based on past r

Forecast of Commits

Number of stars

Number of forks

LangChainai-Langchain

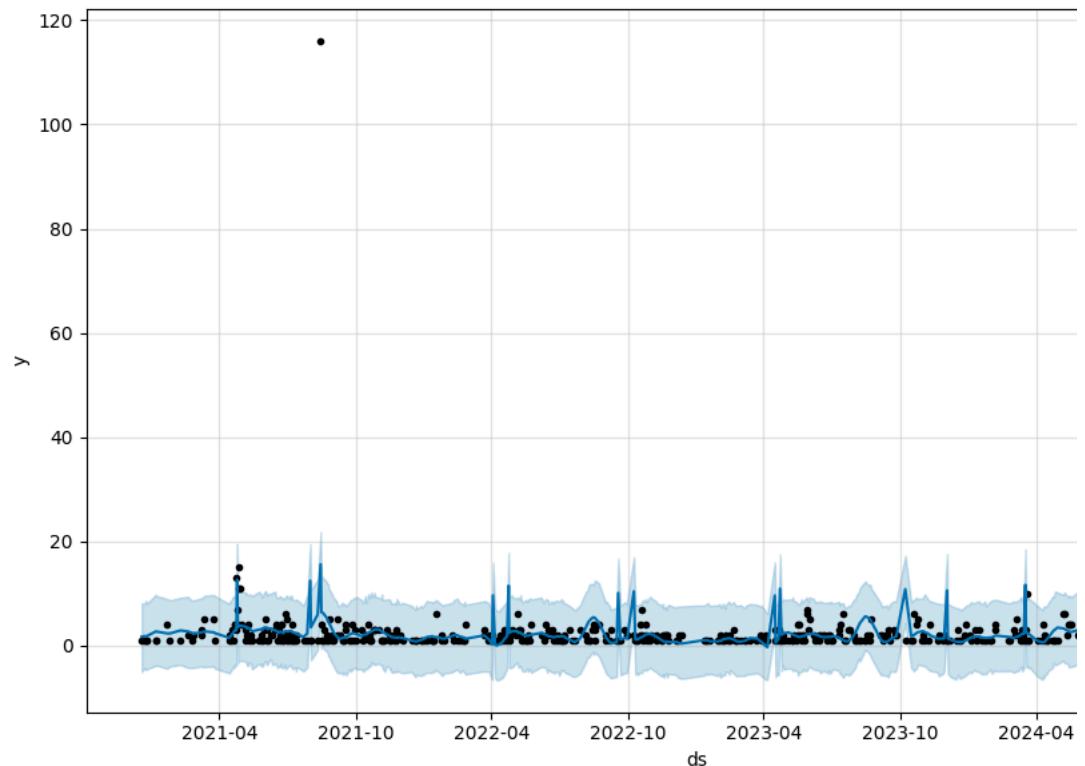
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Forecast Components of Commits

Number of stars

Number of forks

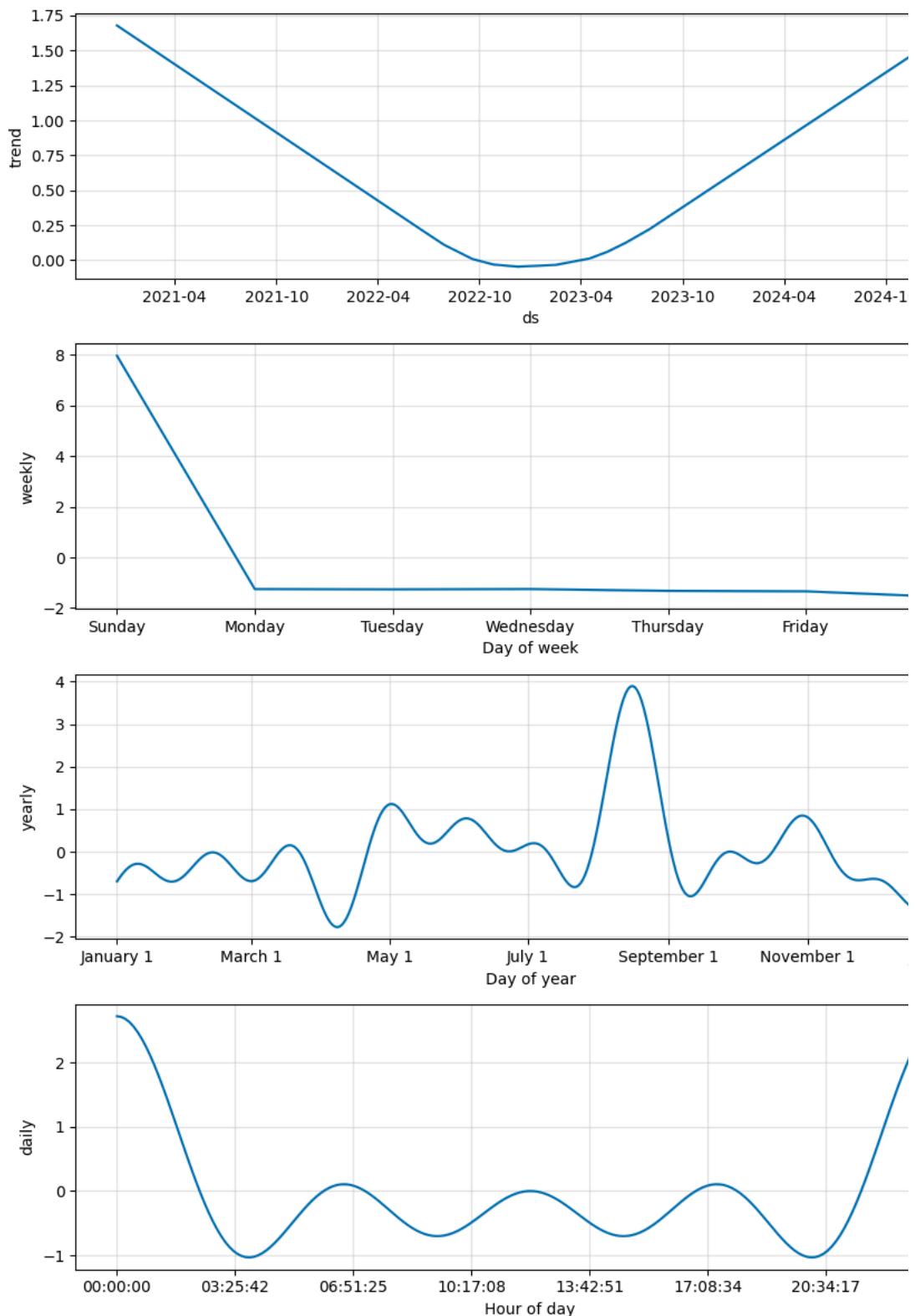
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Timeseries Forecasting of Created Issues using StatsModel based on past metrics

Observation Graph of Created Issues

Number of stars

Number of forks

LangChainai-Langchain

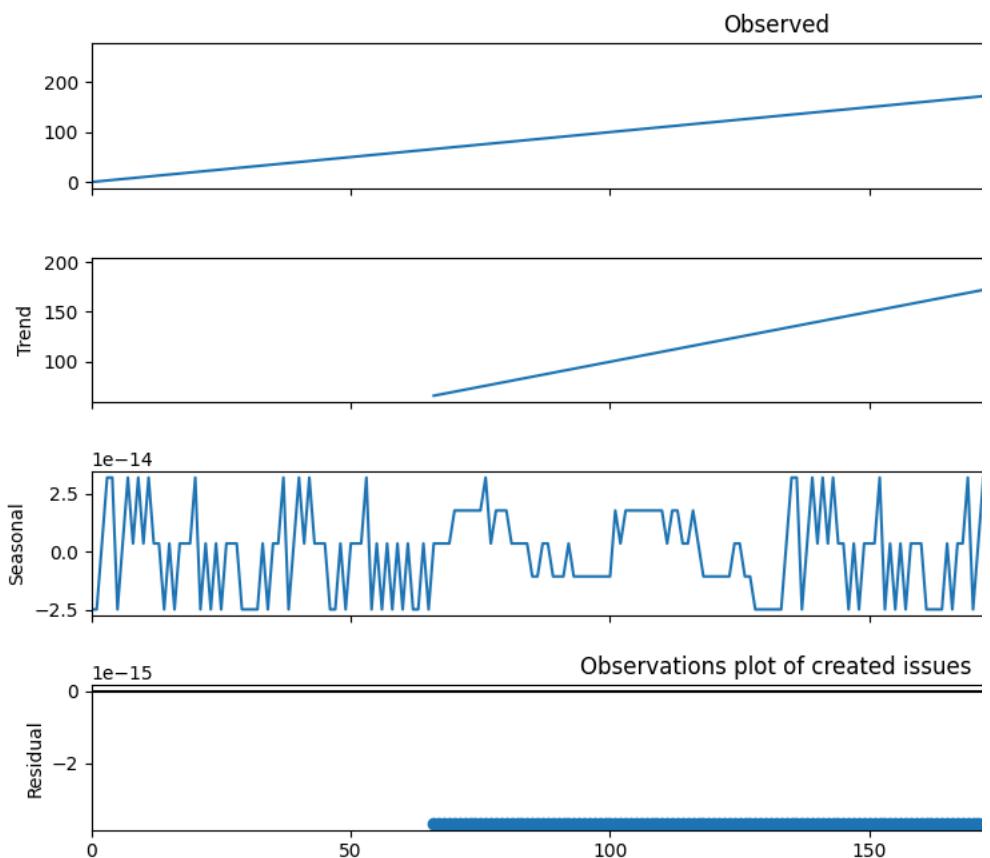
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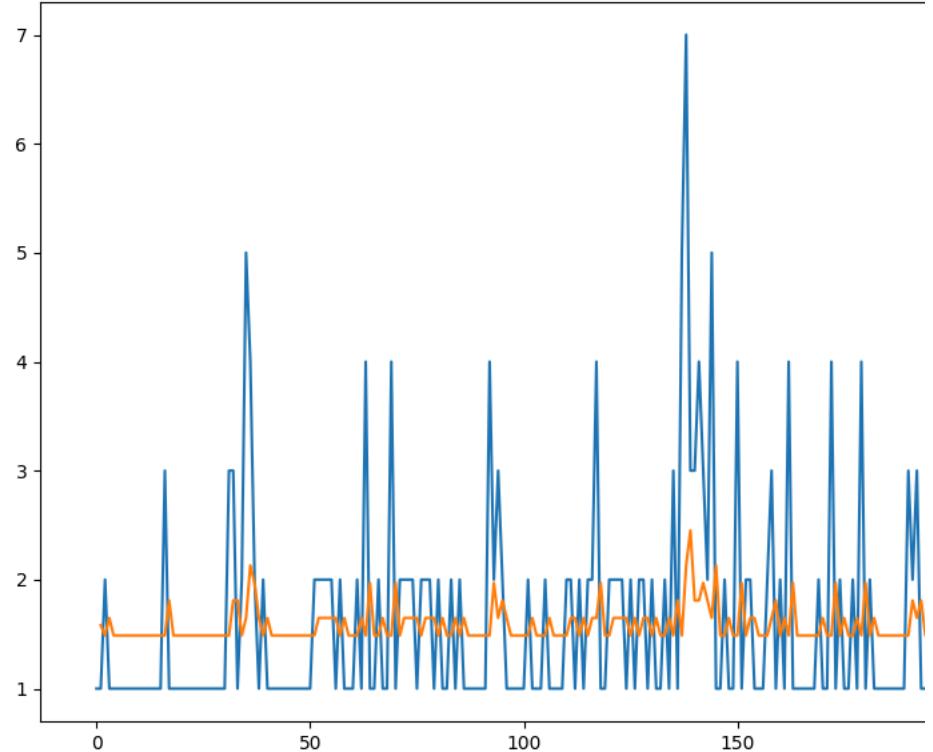
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Time Series Forecasting of Created Issues

Timeseries forecasting of created issues



Timeseries Forecasting of Closed Issues using StatsModel based on past metrics

Observation Graph of Closed Issues

Number of stars

Number of forks

LangChainai-Langchain

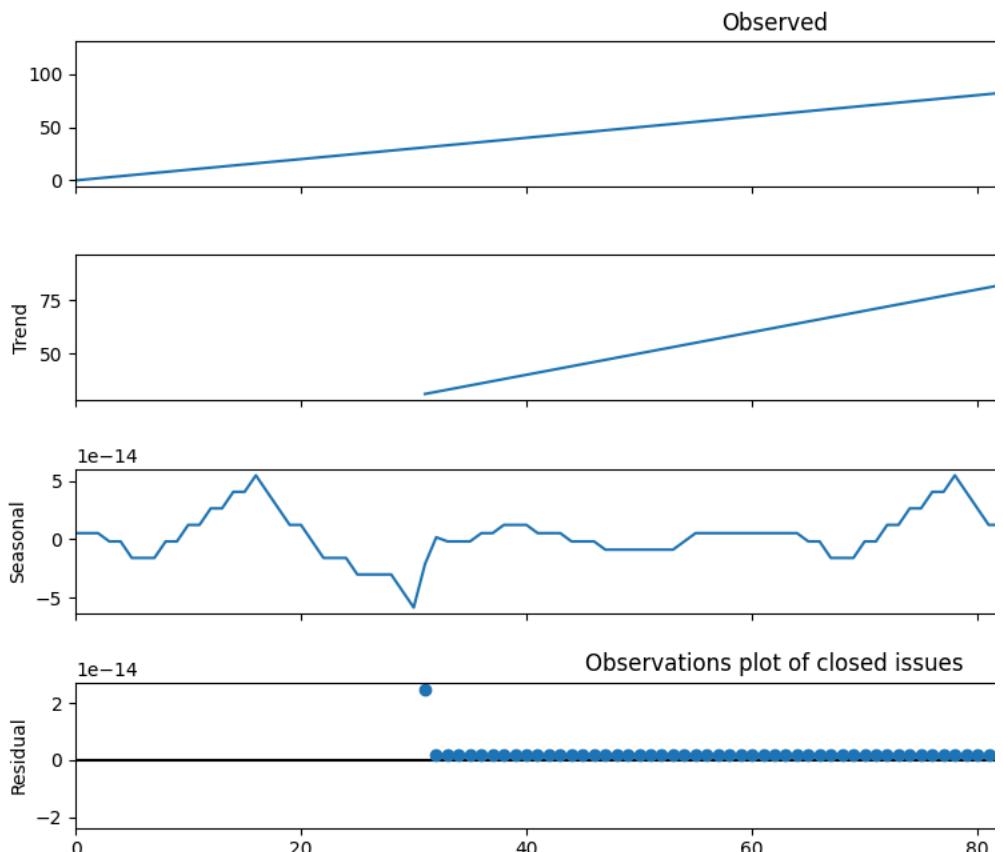
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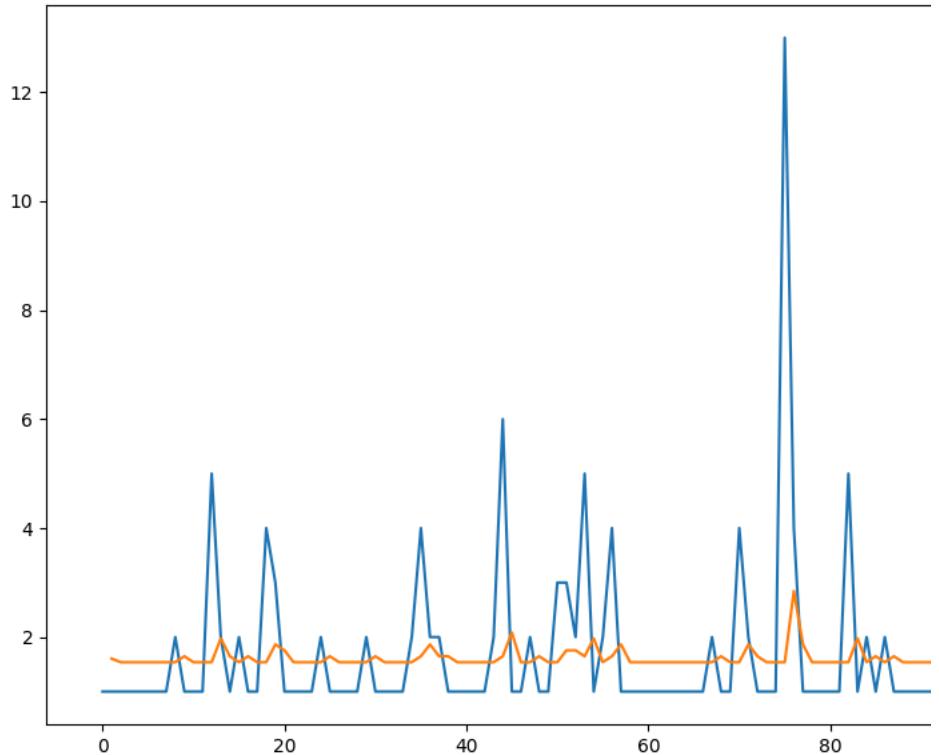
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Timeseries forecasting of closed issues

**Timeseries Forecasting of Pull Request Issues using StatsModel based on past data**

Observation Graph of Pull Request Issues

Number of stars

Number of forks

LangChainai-Langchain

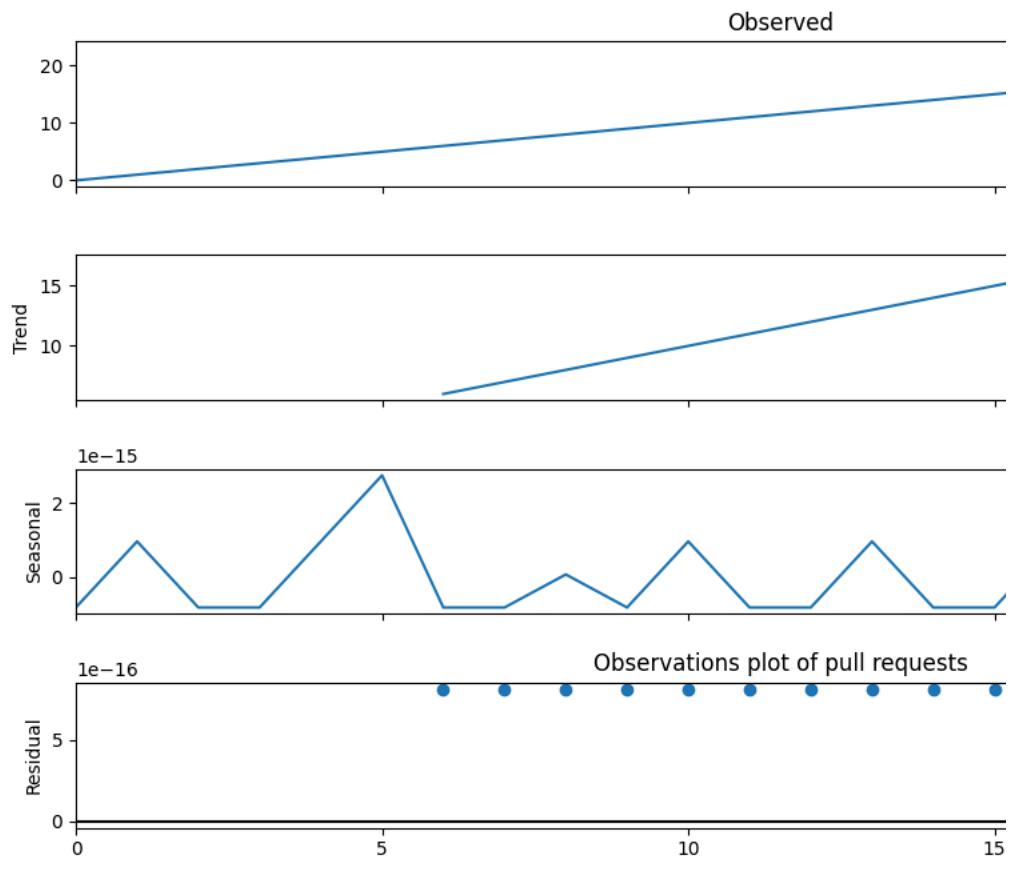
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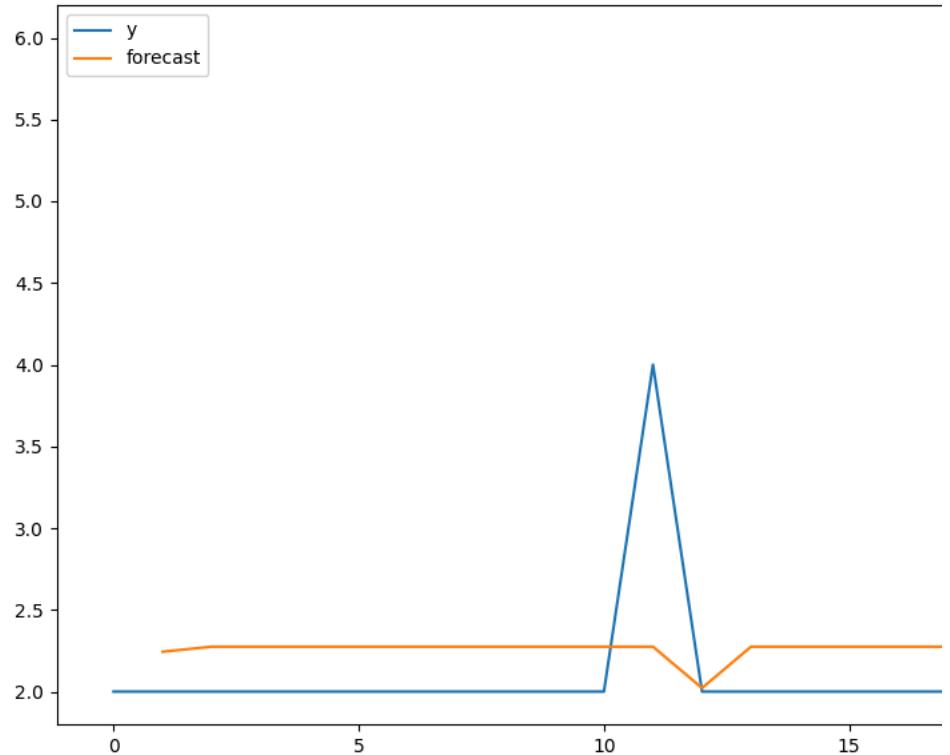
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Timeseries forecasting of pull requests

**Timeseries Forecasting of Commits Issues using StatsModel based on past r**

Observation Graph of Commits Issues

Number of stars

Number of forks

LangChainai-Langchain

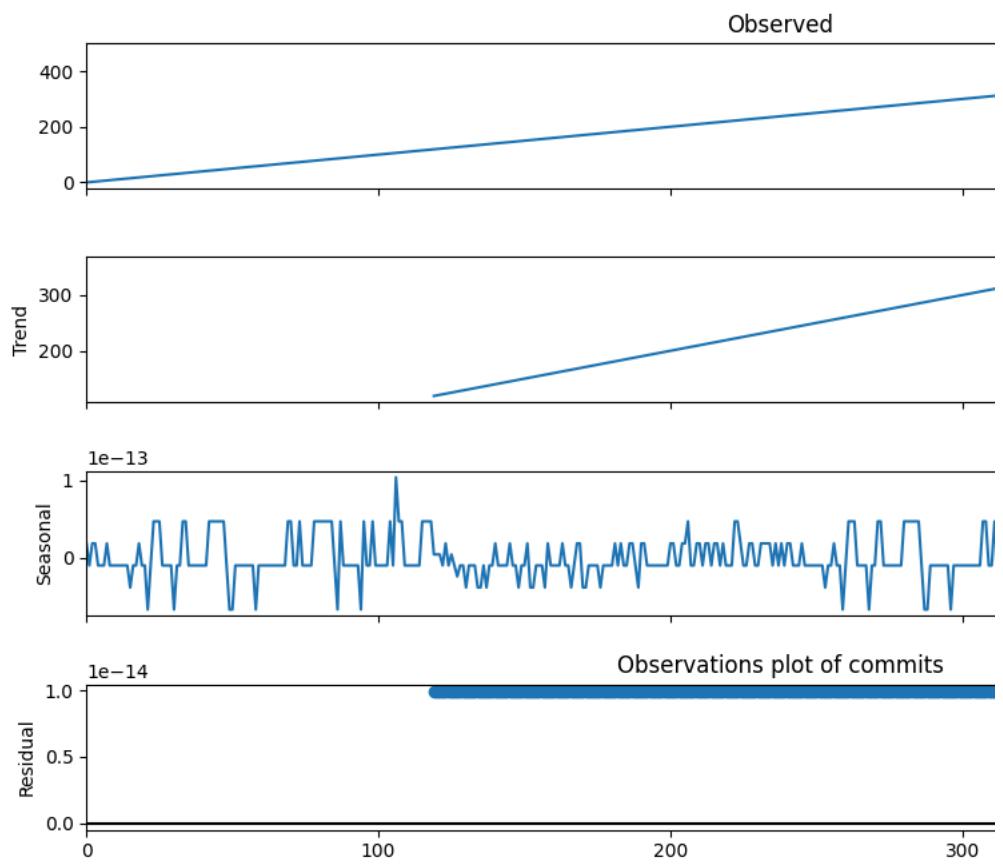
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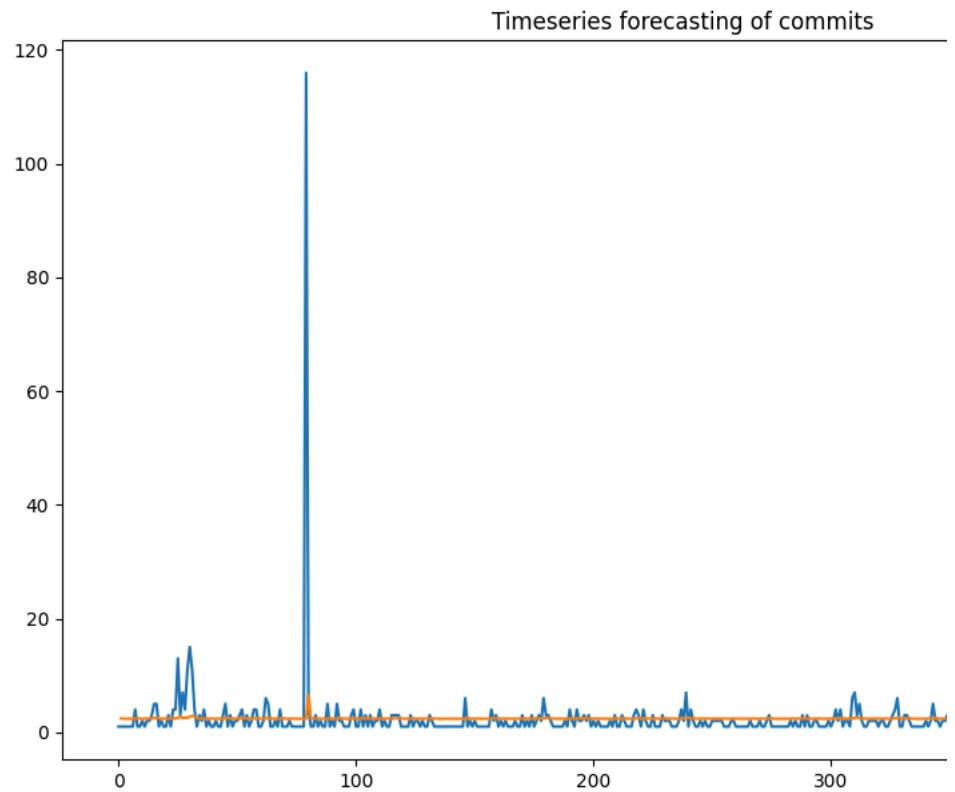
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Time Series Forecasting of Commits Issues

**Timeseries Forecasting of Releases using Tensorflow and Keras LSTM**

Model Loss for Releases

Number of stars

Number of forks

LangChainai-Langchain

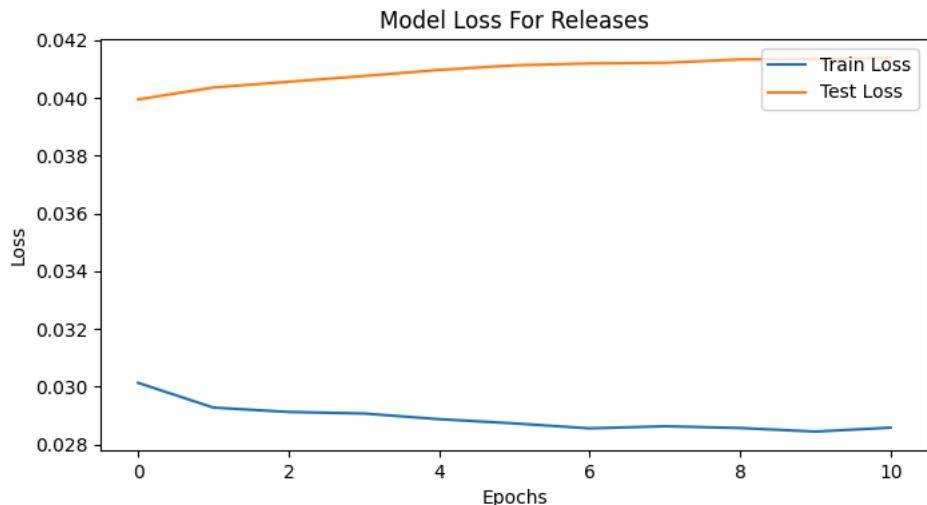
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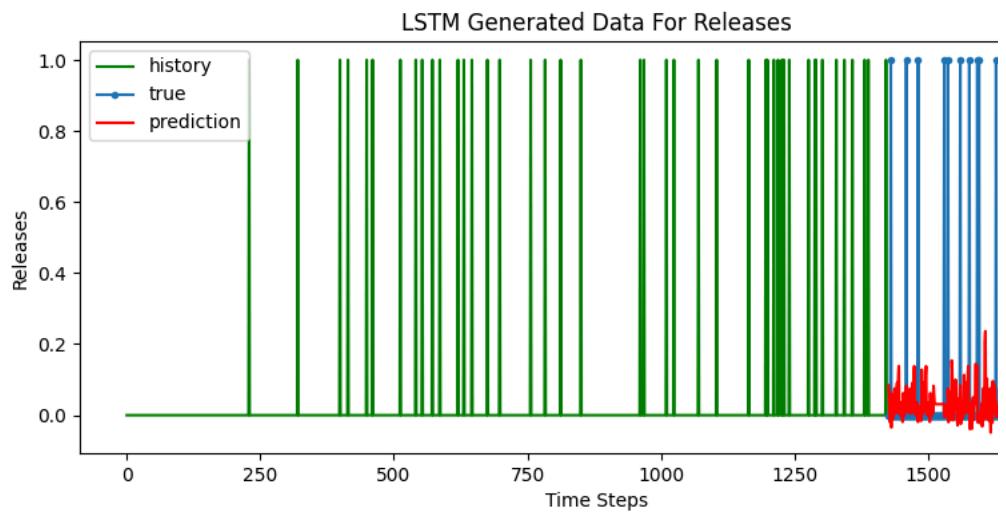
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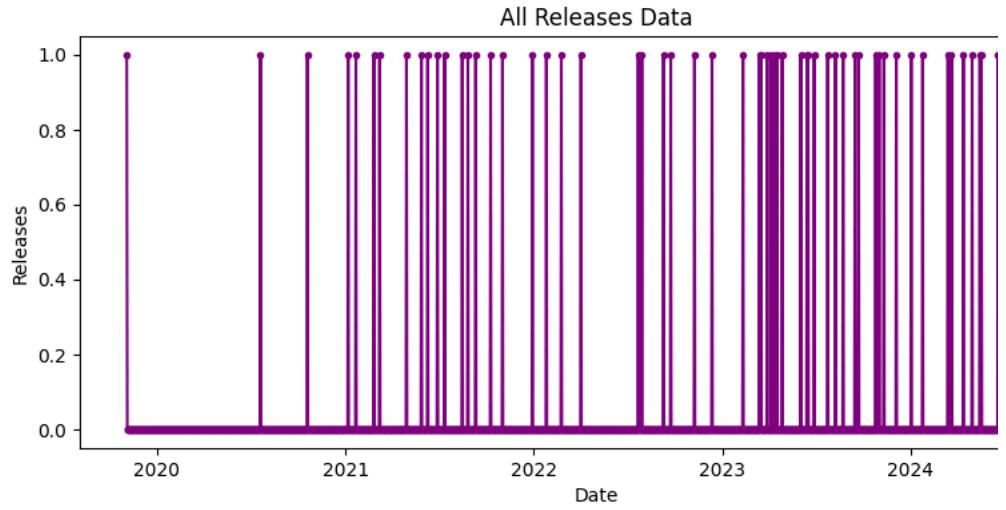
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LSTM Generated Data for Releases



All Issues Data for Releases

**Timeseries Forecasting of Release using StatsModel**

Observation Graph of Release Issues

Number of stars

Number of forks

LangChainai-Langchain

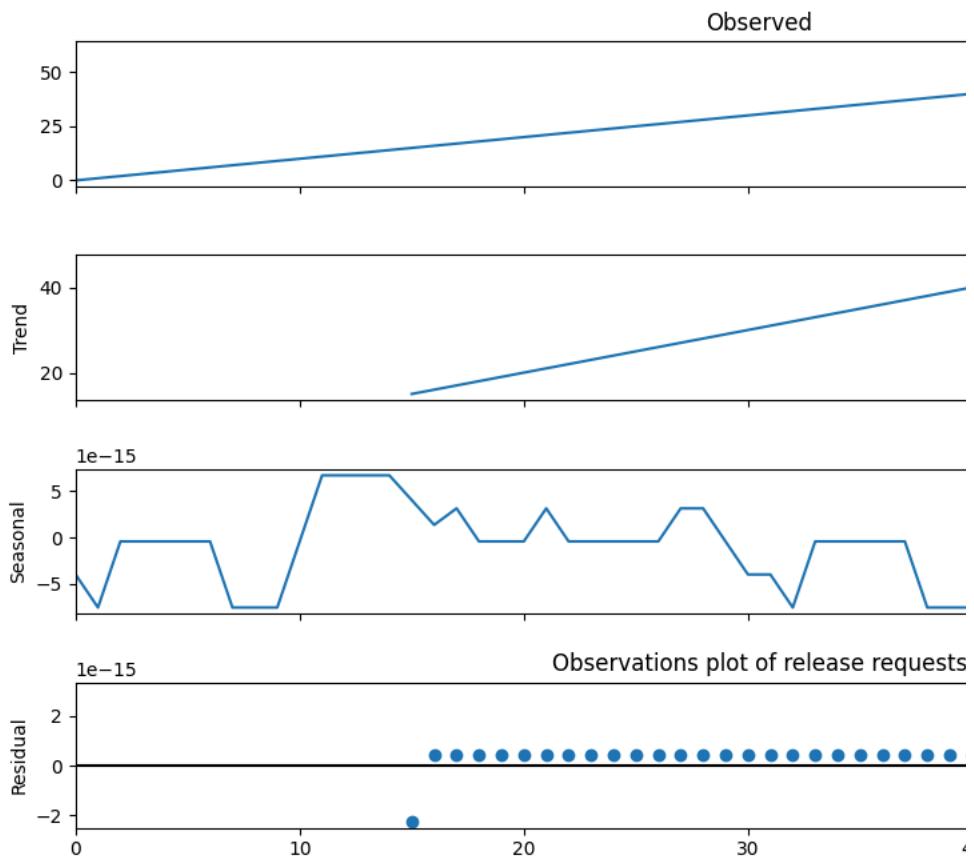
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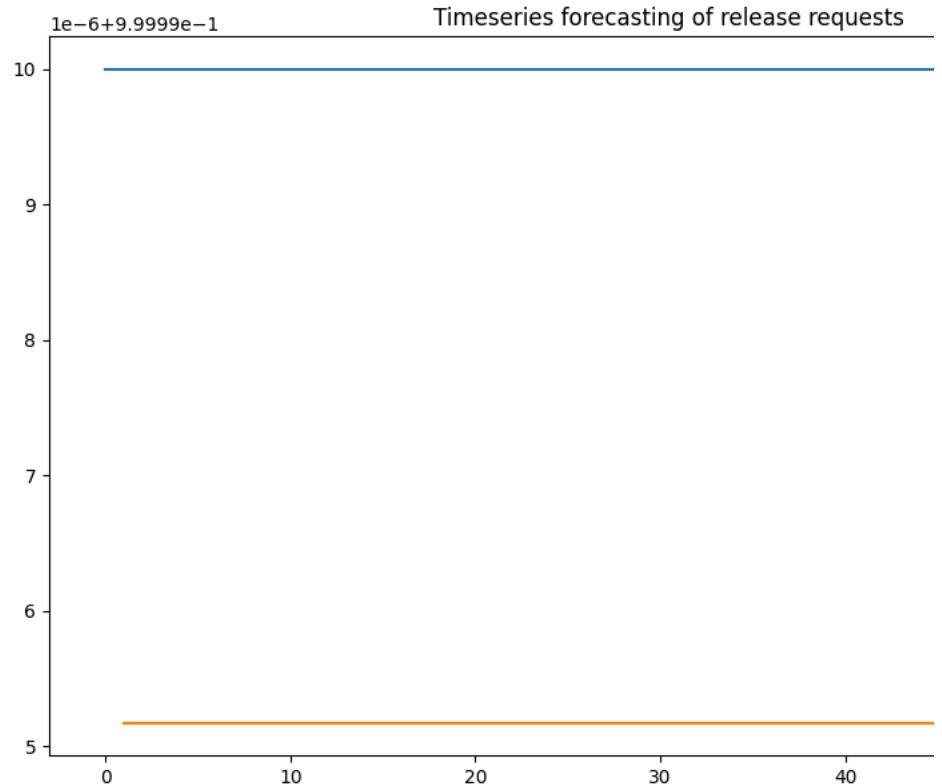
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Time Series Forecasting of Releases



Timeseries Forecasting of Releases using Facebook/Prophet

Forecast of Releases

Number of stars

Number of forks

LangChainai-Langchain

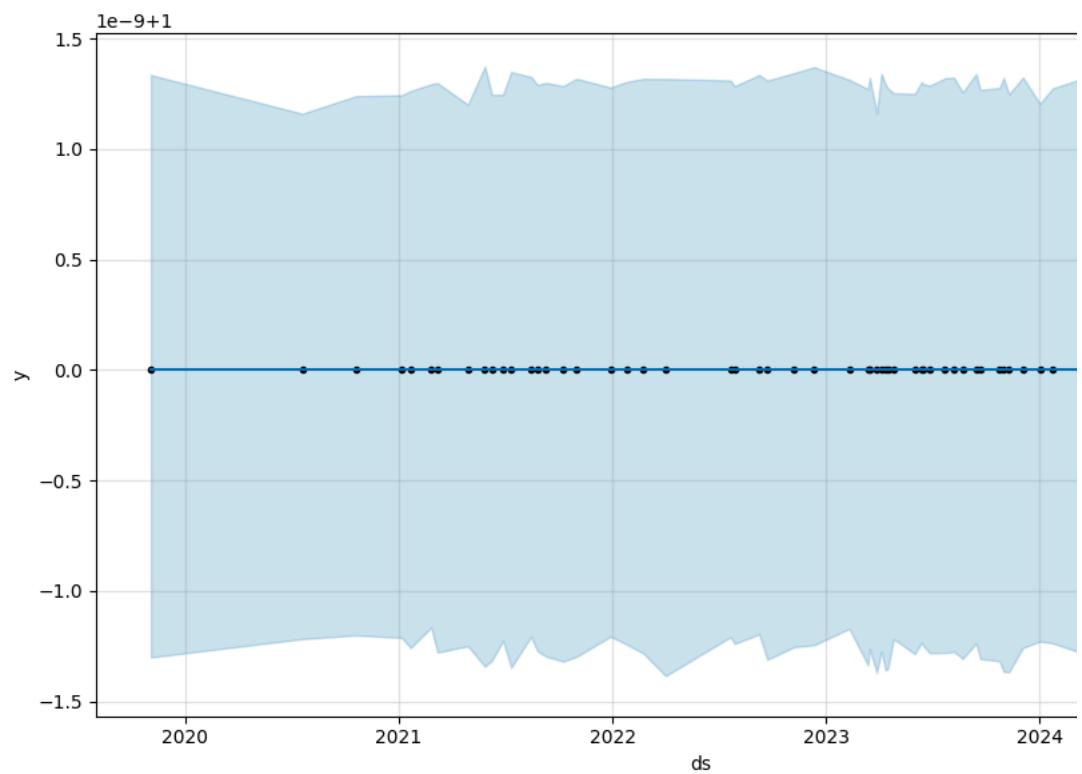
LangChainai-Langgraph

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Number of stars

Number of forks

LangChainai-Langchain

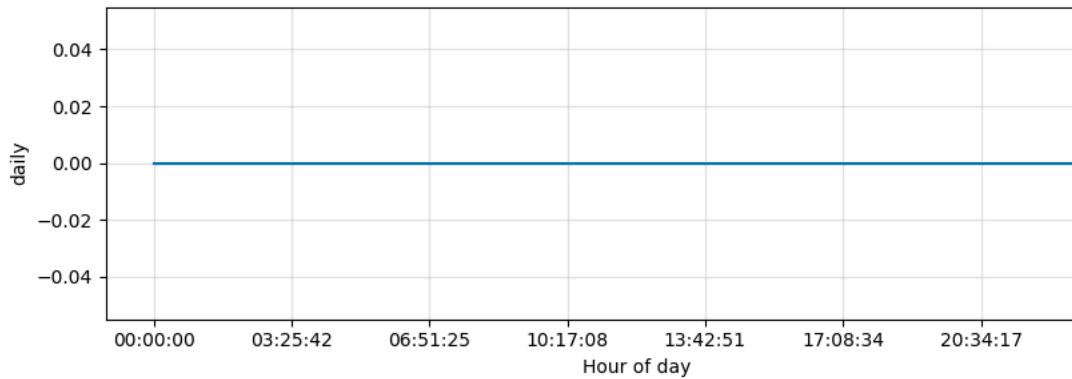
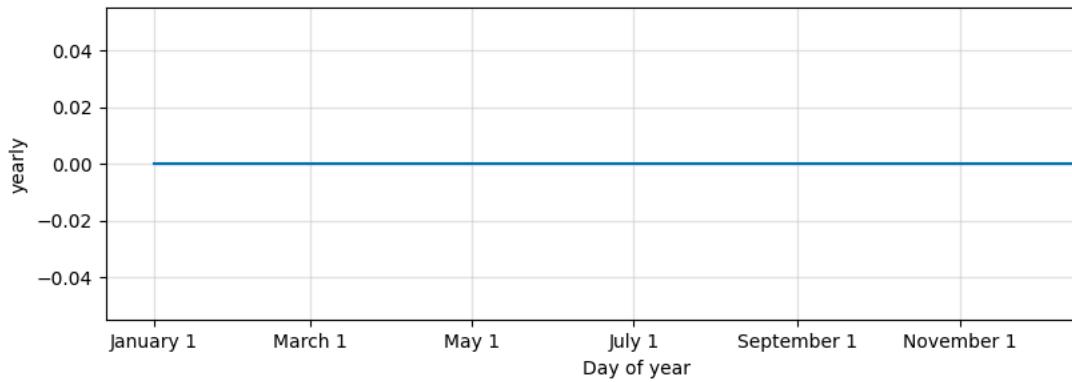
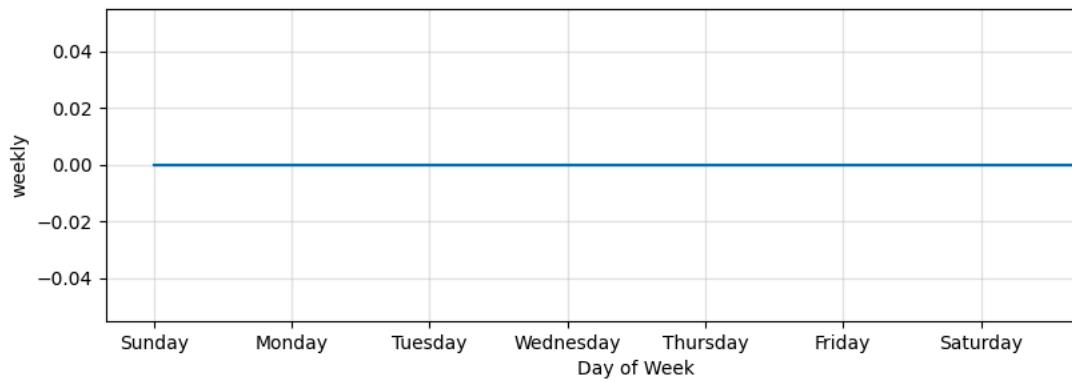
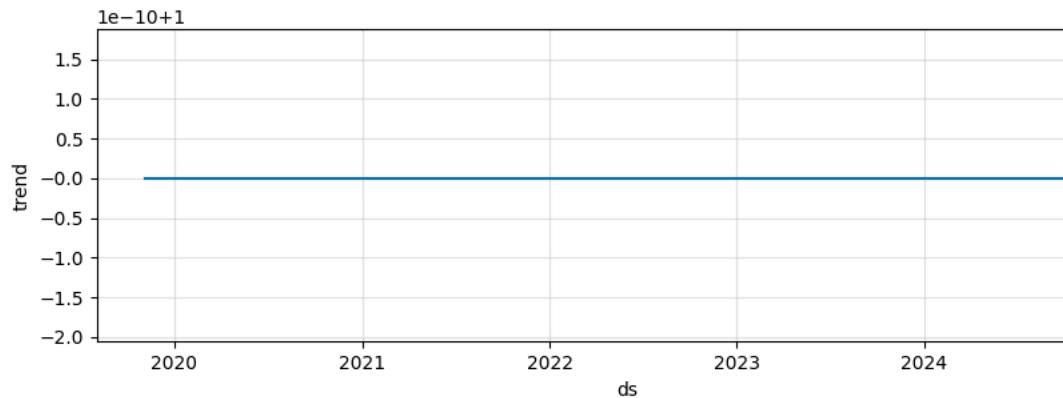
LangChainai-Langgraph

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Timeseries Forecasting of Contributors using Tensorflow and Keras LSTM

Model Loss for Contributors

Number of stars

Number of forks

LangChainai-Langchain

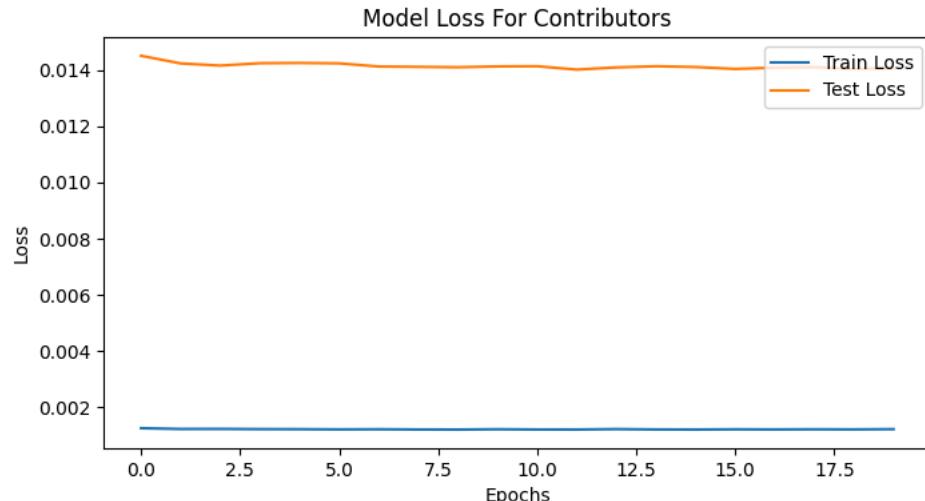
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Microsoft-Autogen

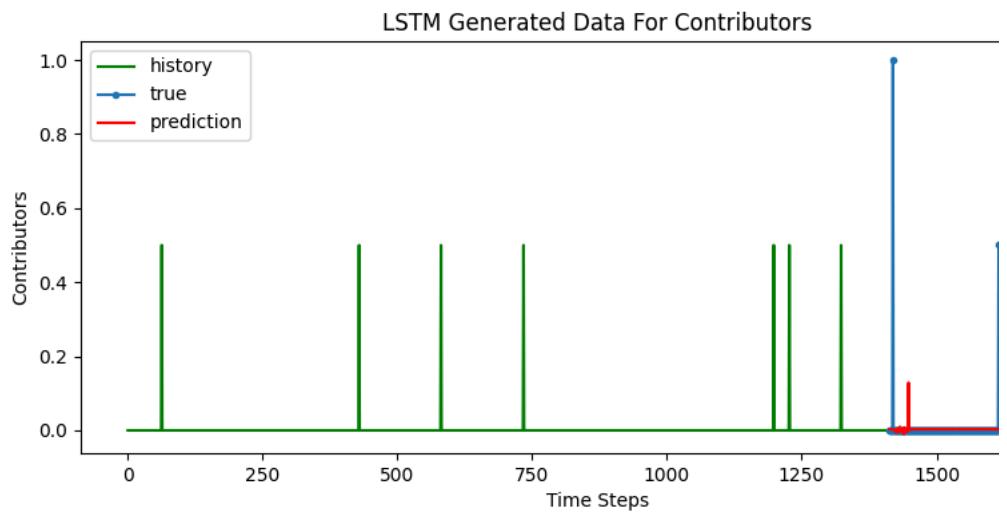
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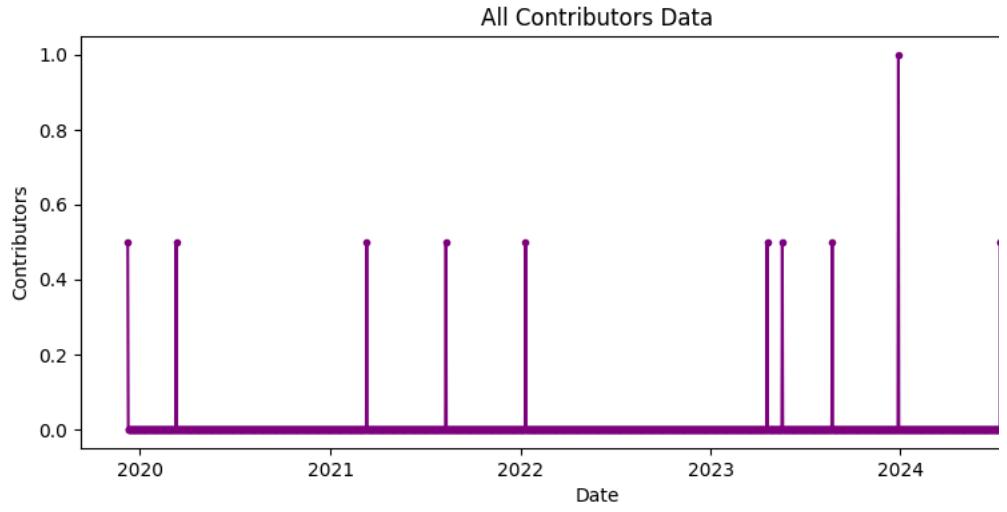
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LSTM Generated Data for Contributors



All Issues Data for Contributors

**Timeseries Forecasting of Contributors using StatsModel**

Observation Graph of Contributors

Number of stars

Number of forks

LangChainai-Langchain

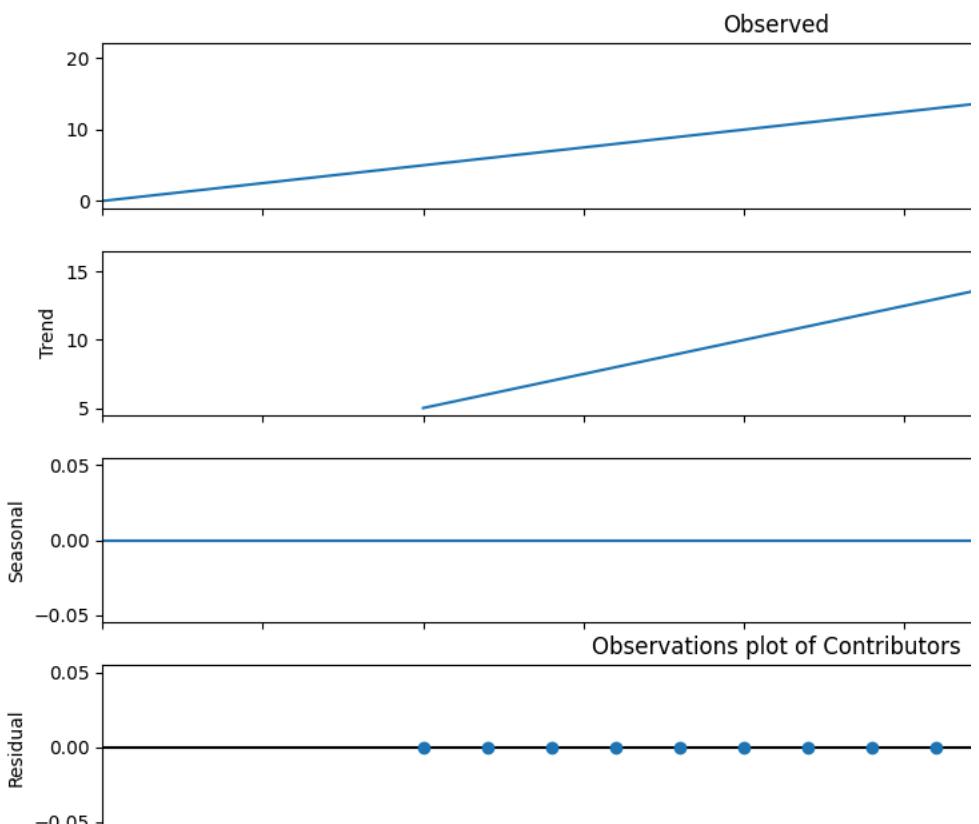
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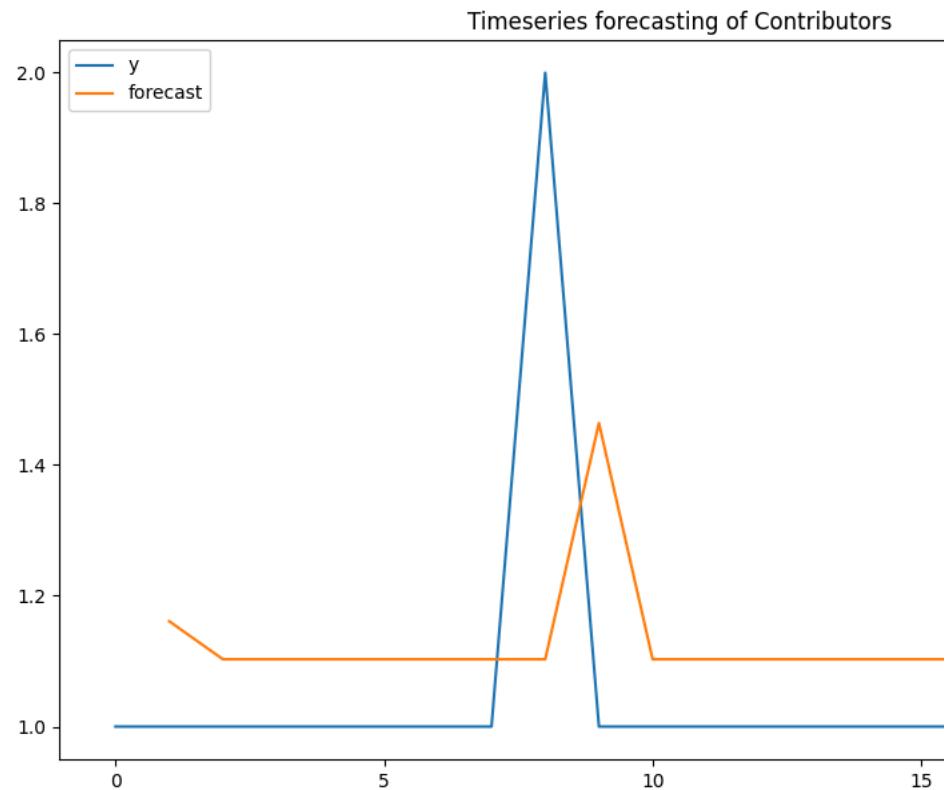
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Time Series Forecasting of Contributors



Timeseries Forecasting of Contributors using Facebook/Prophet

Forecast of Contributors

Number of stars

Number of forks

LangChainai-Langchain

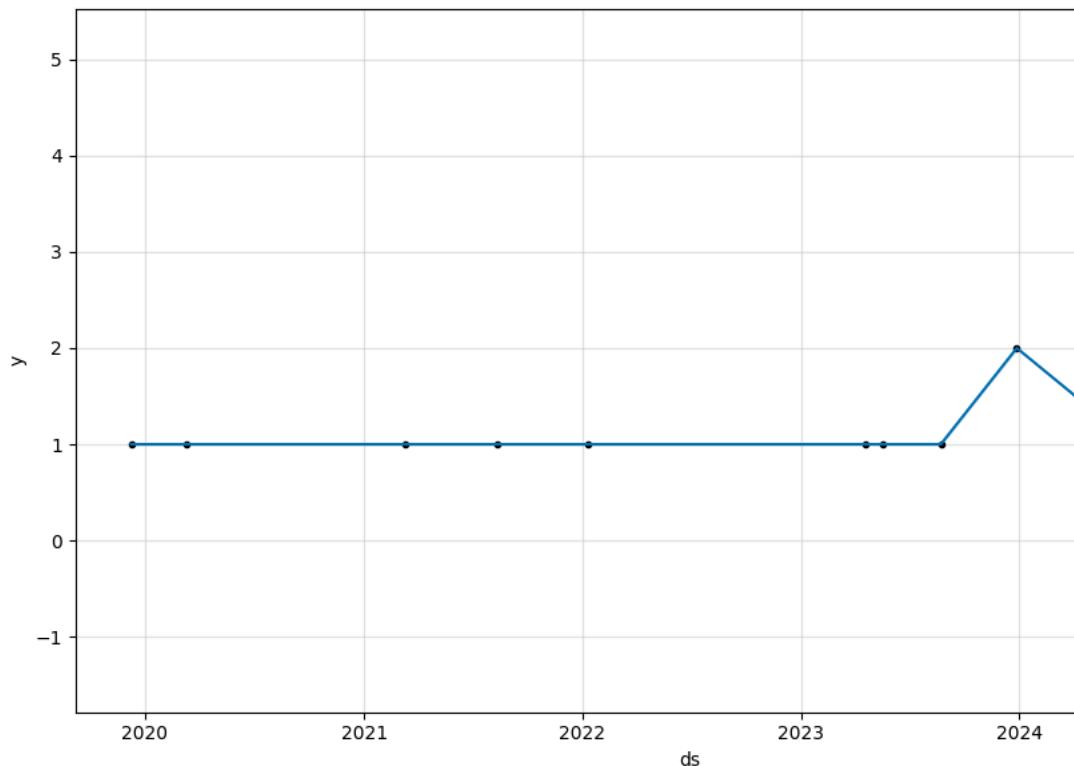
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Forecast Components of Contributors

Number of stars

Number of forks

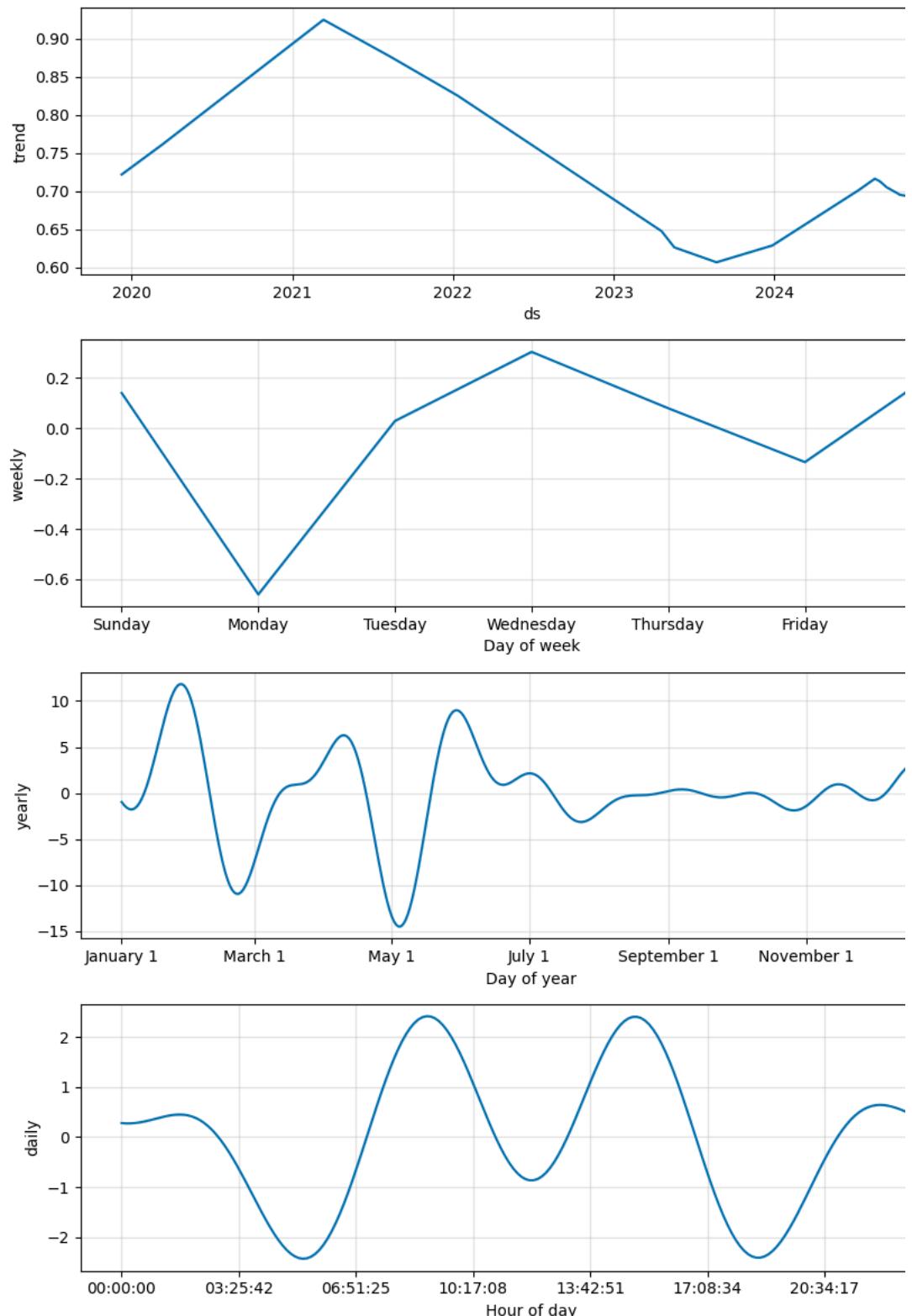
LangChainai-Langchain

LangChainai-Langgraph

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Timeseries Forecasting of Branches using Tensorflow and Keras LSTM

Model Loss for Branches

Number of stars

Number of forks

LangChainai-Langchain

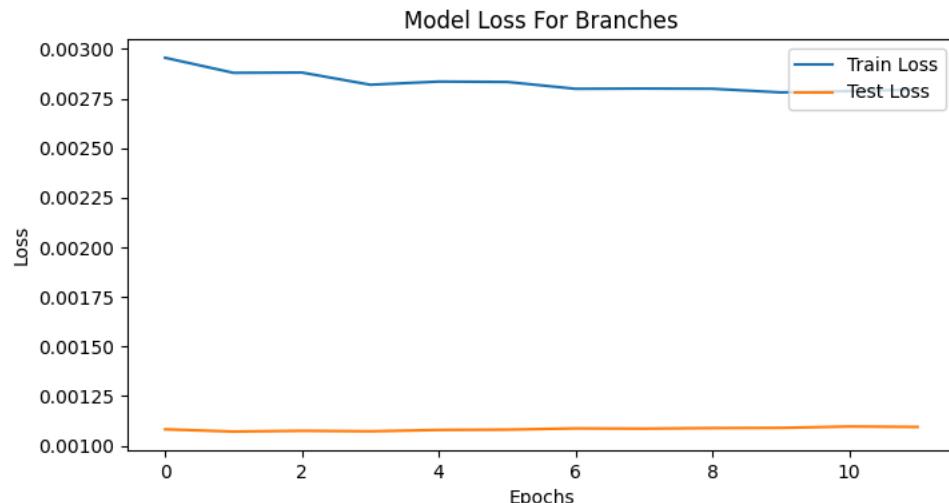
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Microsoft-Autogen

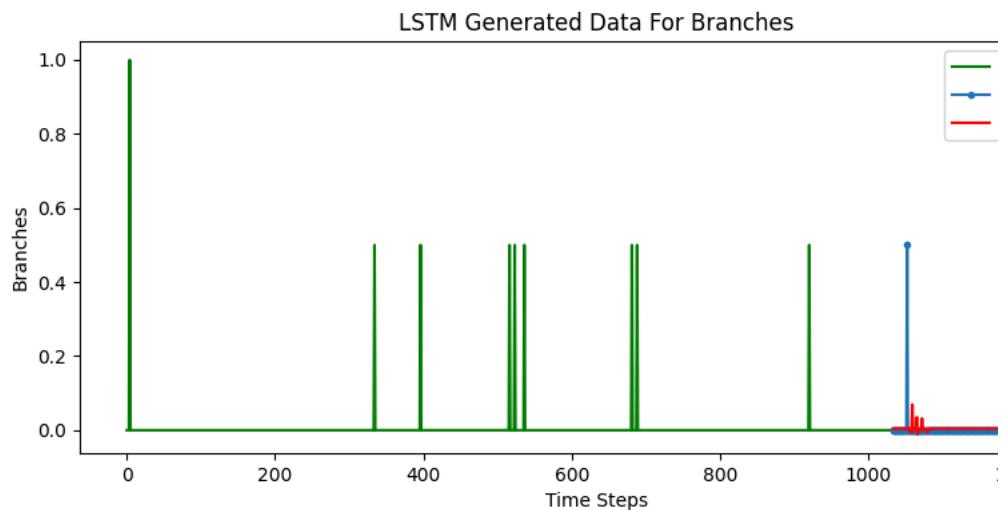
Openai-Cookbook

elasticsearch

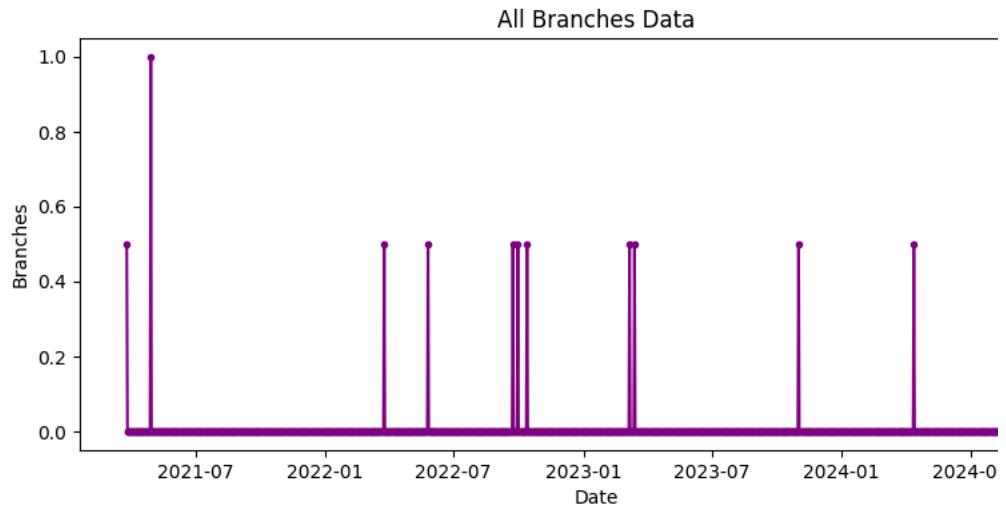
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LSTM Generated Data for Branches



All Issues Data for Branches

**Timeseries Forecasting of Branches using StatsModel**

Observation Graph of Branches

Number of stars

Number of forks

LangChainai-Langchain

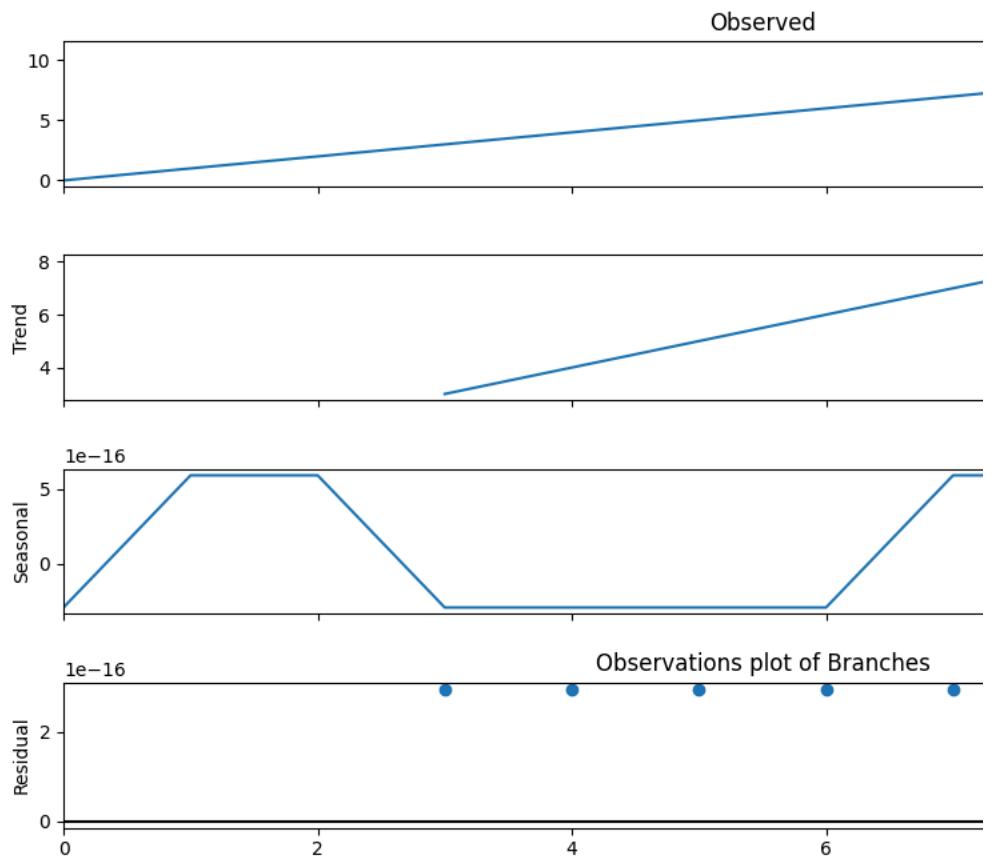
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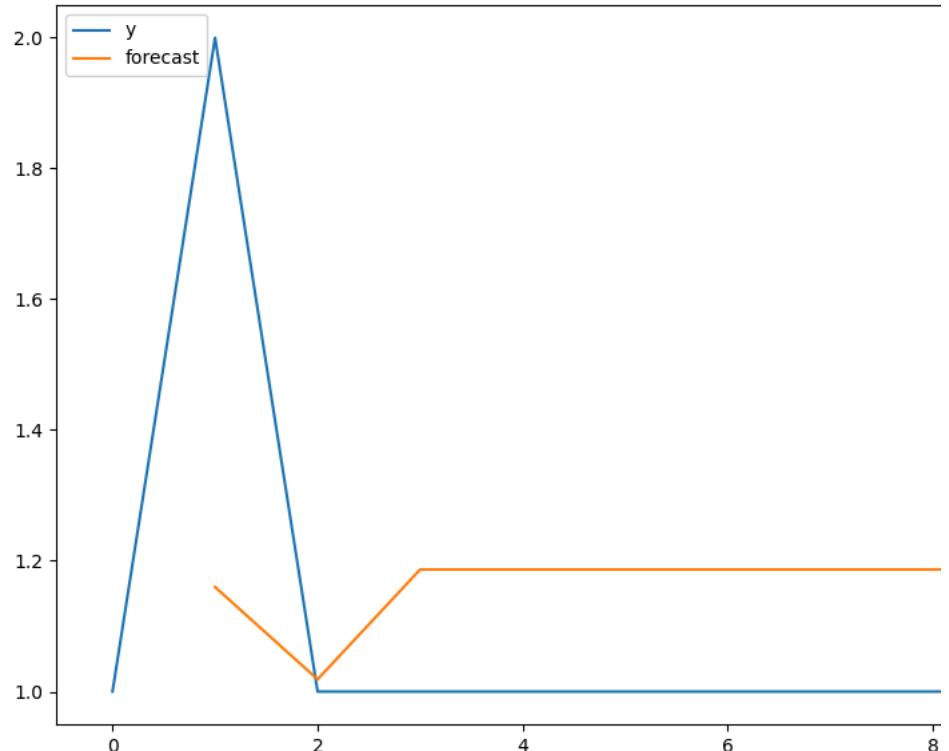
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Time Series Forecasting of Branches

Timeseries forecasting of Branches



Timeseries Forecasting of Branches using Facebook/Prophet

Forecast of Branches

Number of stars

Number of forks

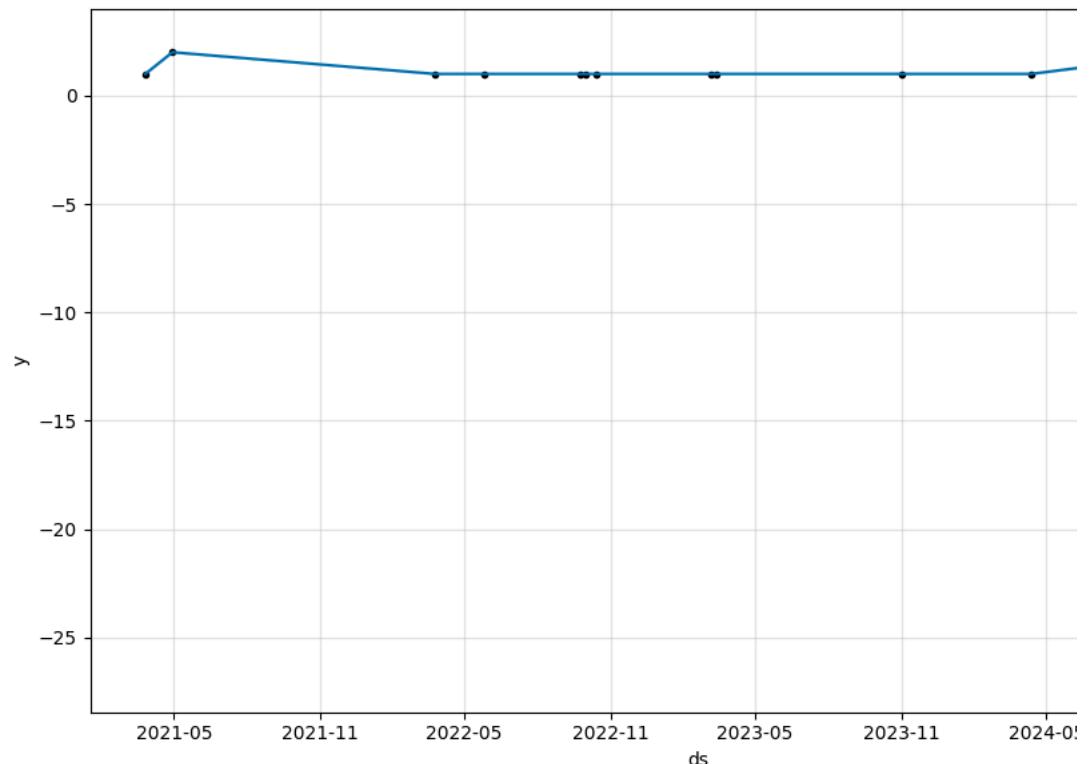
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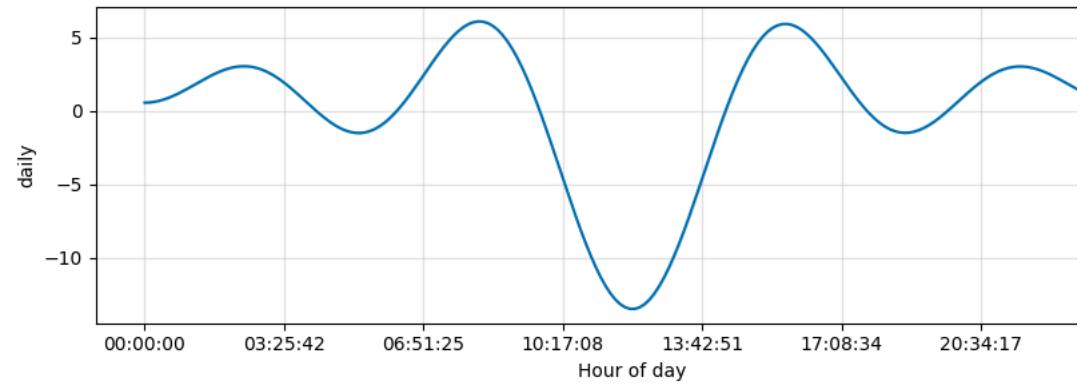
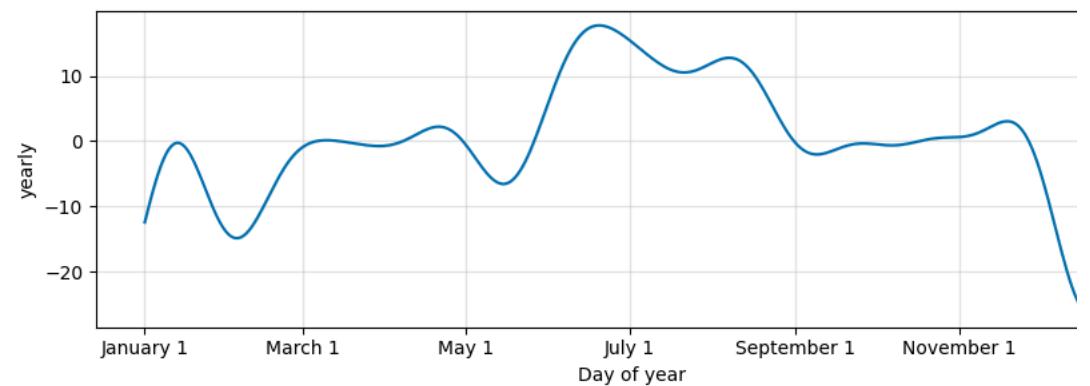
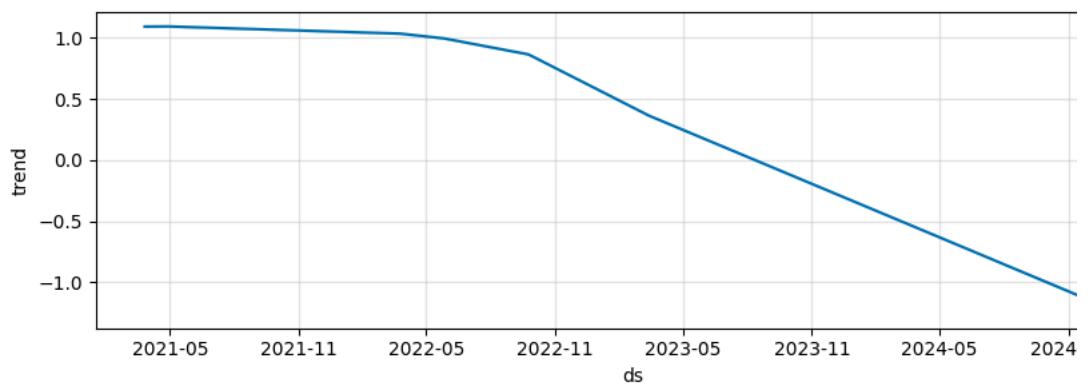
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Forecast Components of Branches



Timeseries Forecasting

Number of stars

Number of forks

LangChainai-Langchain

LangChainai-Langgraph

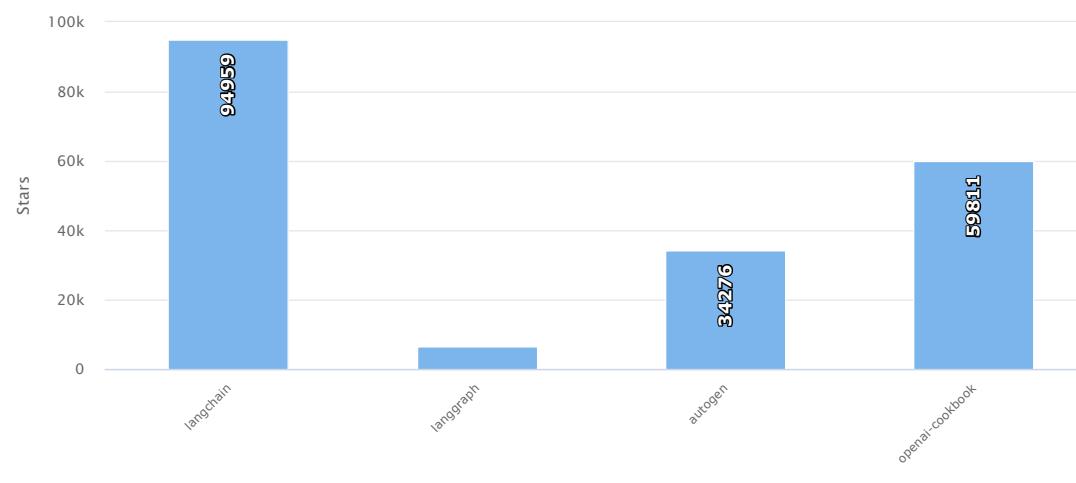
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Number of stars for each repository



Timeseries Forecasting

Number of stars

Number of forks

LangChainai-Langchain

LangChainai-Langgraph

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Number of forks for each repository

