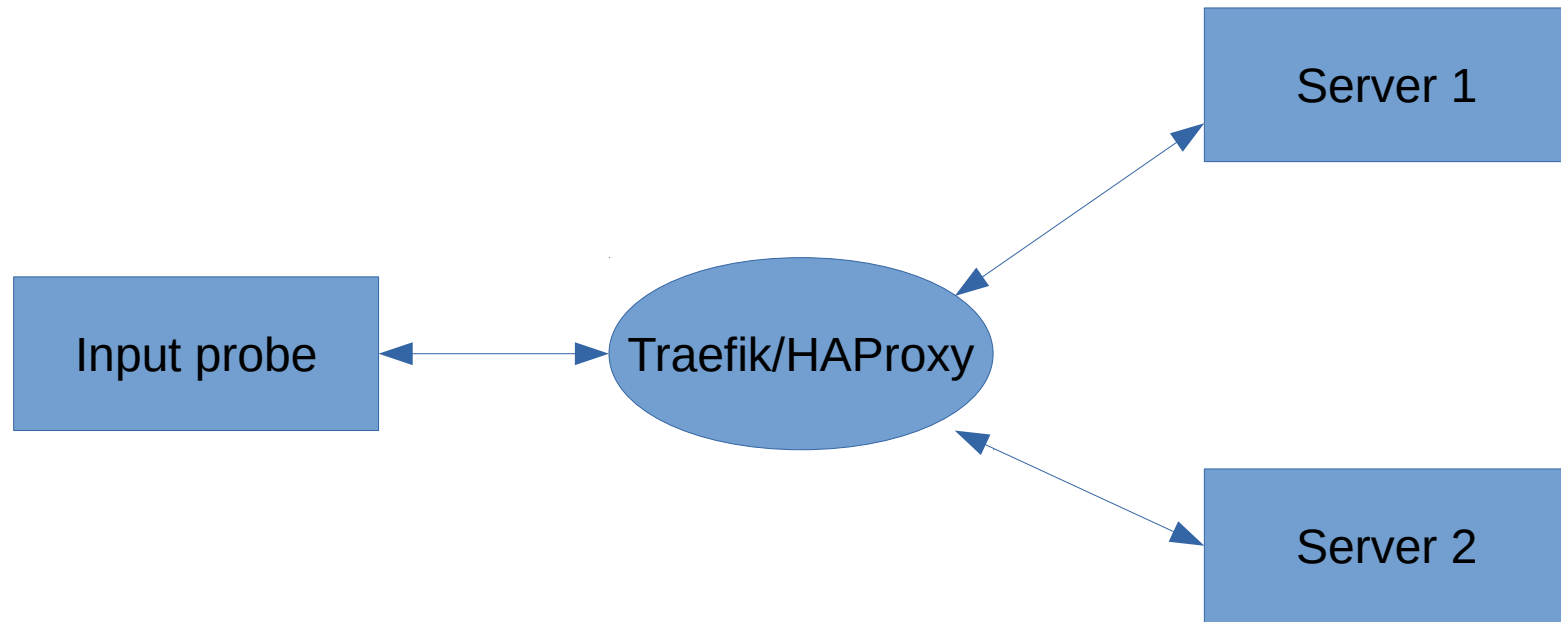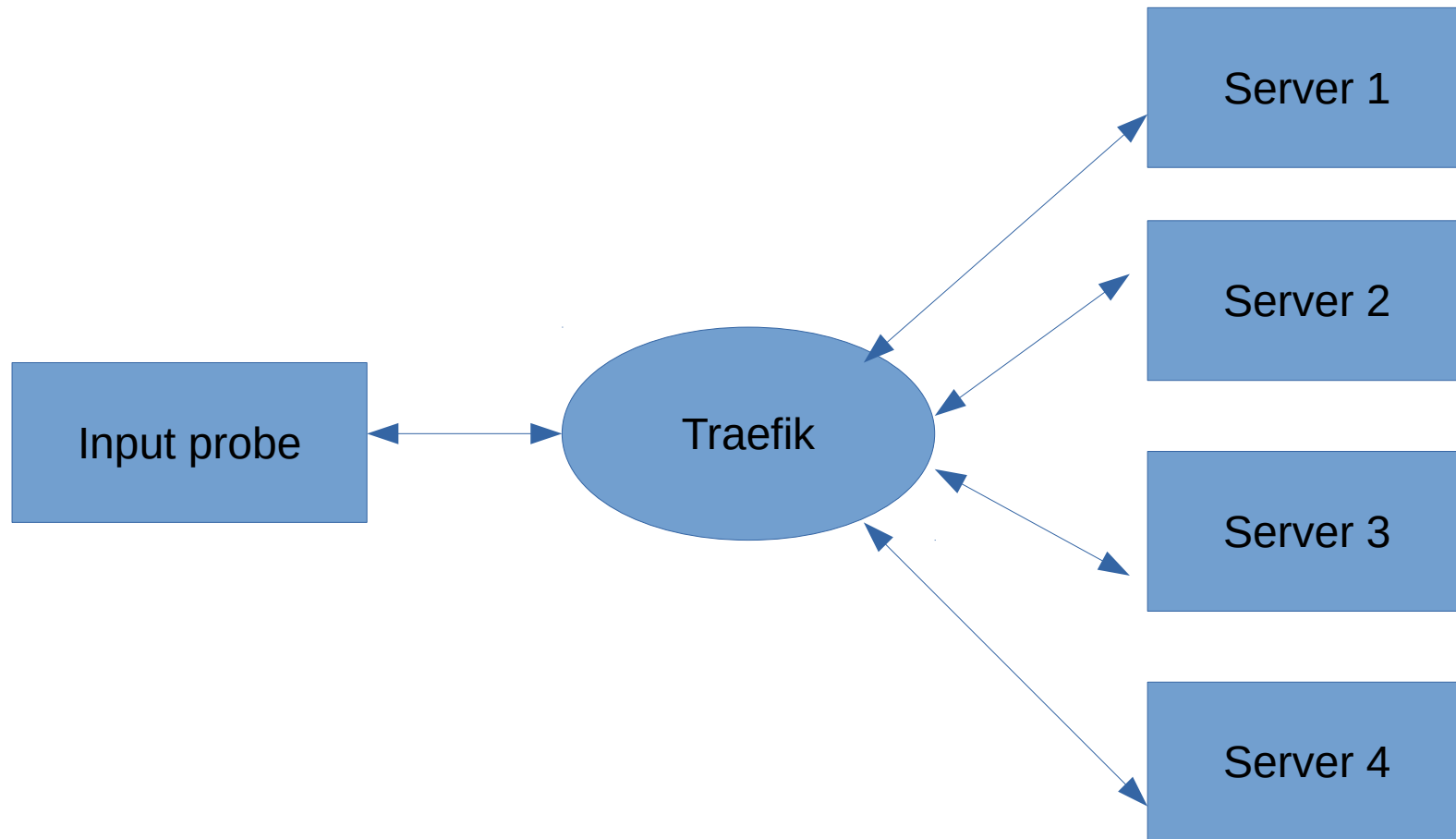# Traefik and Mitmproxy Data analysis

Ishwariya Raveendran

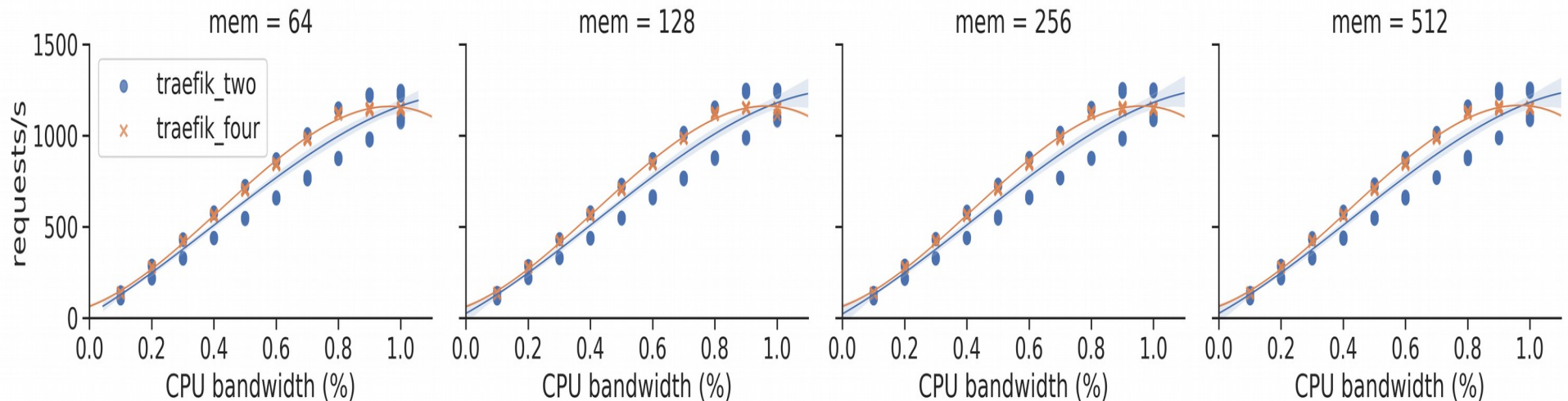# Experimental setup (Load balancer) – Simple scenario

Server 1

Input probe

Traefik/HAProxy
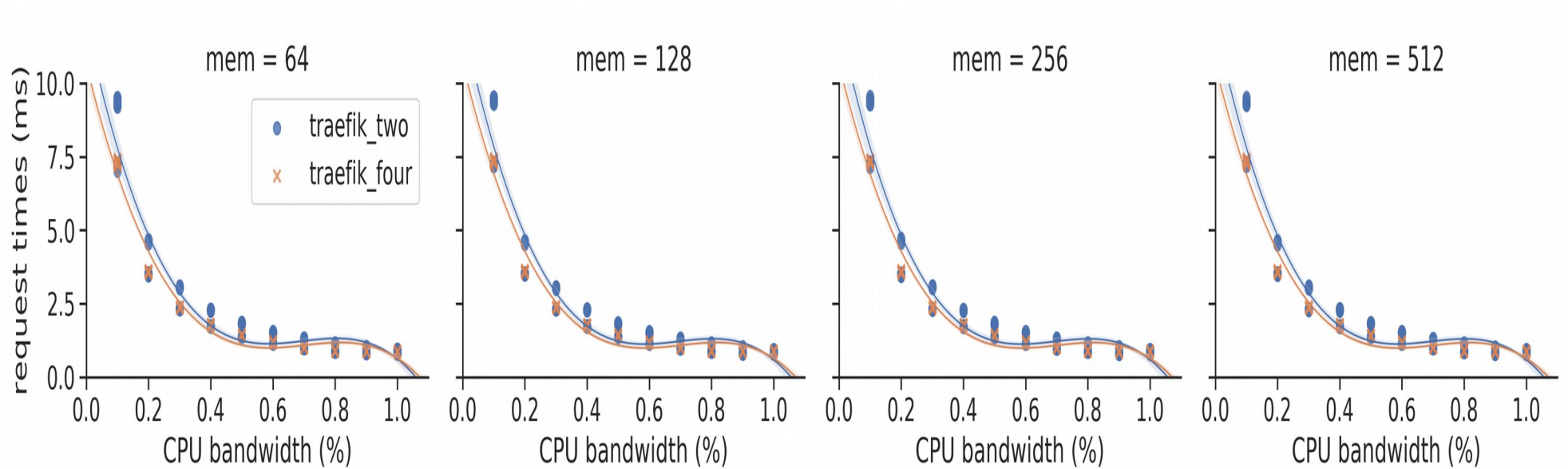
Server 2

Experimental setup – Multiple servers scenario

https://github.com/CN-UPB/pg-backflip-experiments/tree/master/vnfs/Load_balancer/Traefik_5
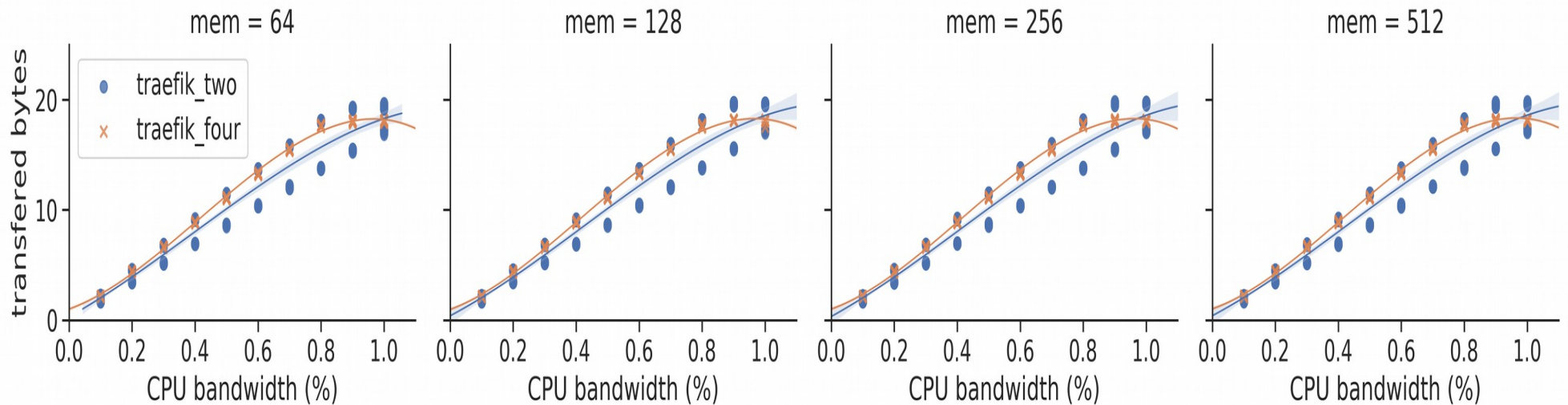
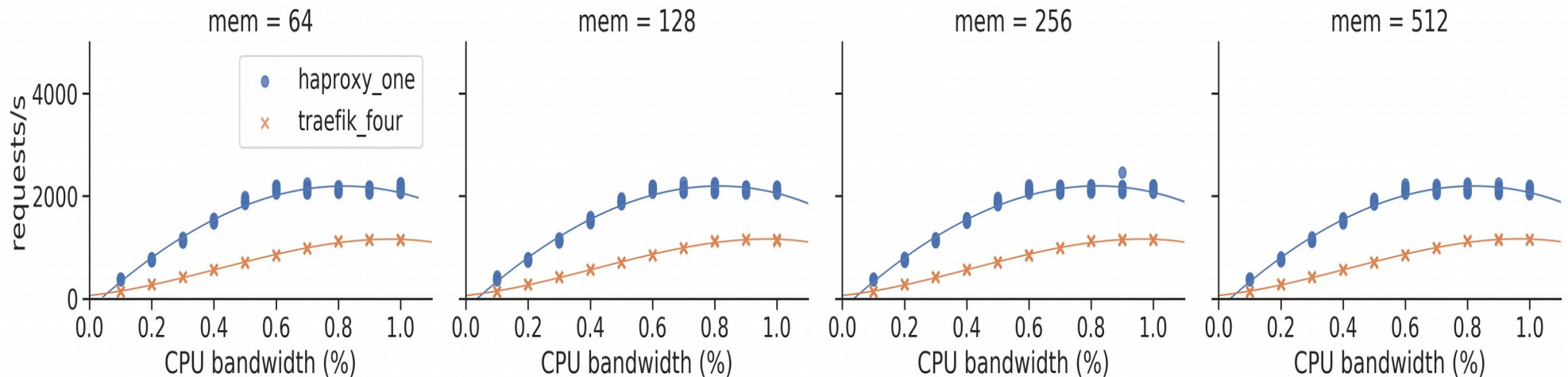# Simple vs Multiple (Traefik) requests per sec vs CPU bw
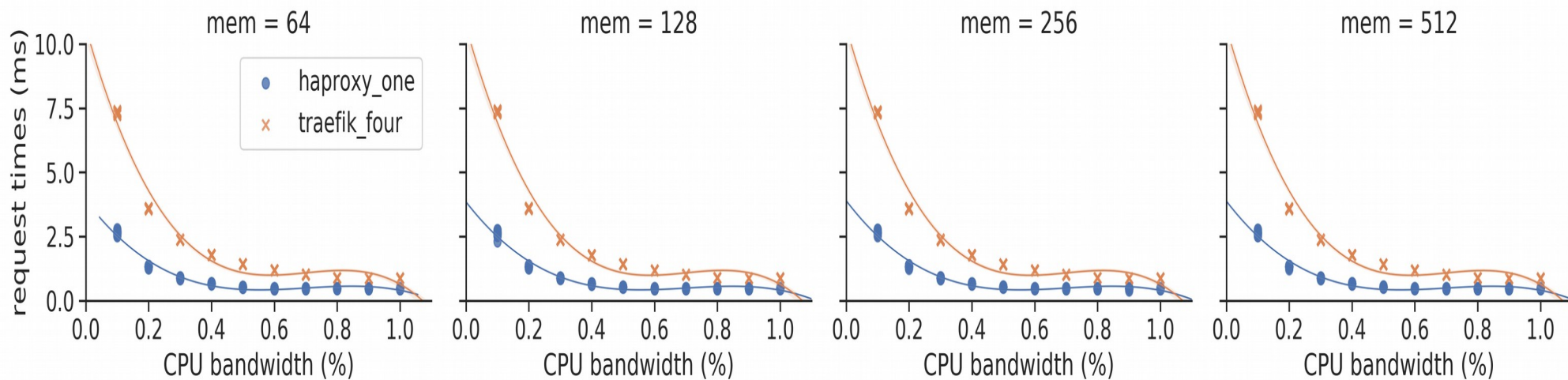
Response time vs CPU bw

Transferred bytes vs CPU bw

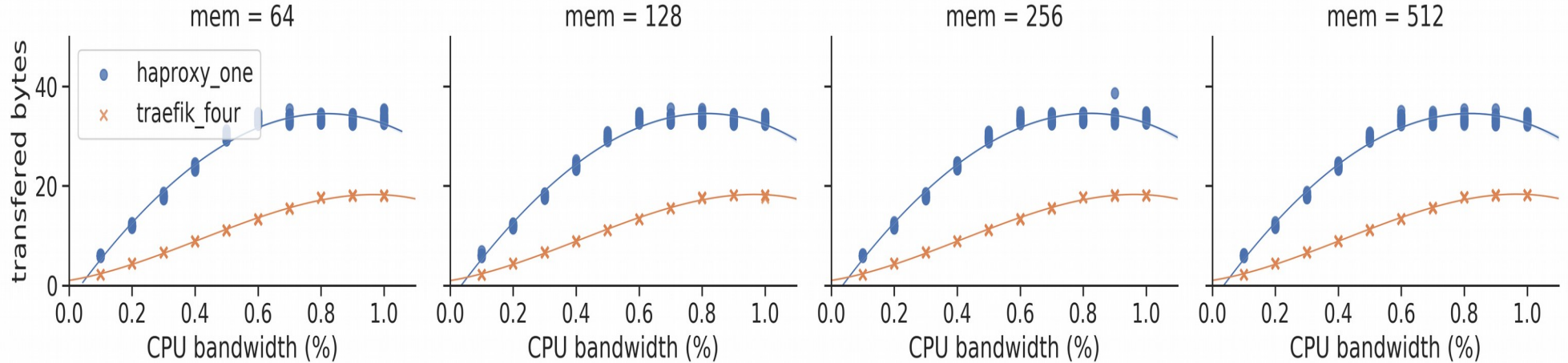# Traefik multiple vs HAProxy with one server

Traefik multiple vs HAProxy with one server

Traefik multiple vs HAProxy with one server

Observations

vs

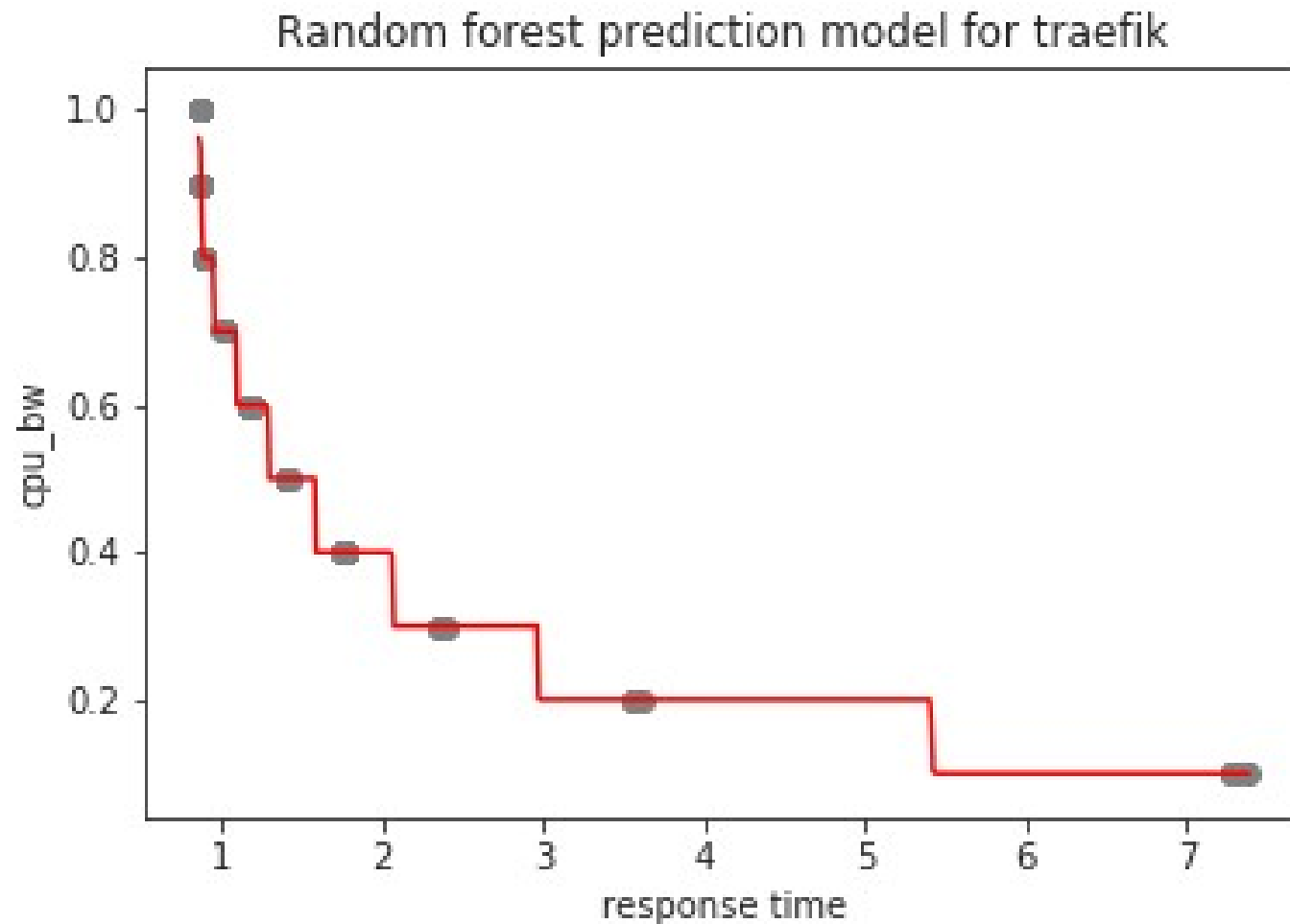| Load balancer	CPU bw	Memory	Increased servers	
			Requests per second	Response time
Traefik	+	-	+ But less than HAProxy	+ But greater than HAProxy

HAProxy performs better than Traefik!

Simple prediction model – response time

Random forest prediction model for traefik

Comparison of prediction models
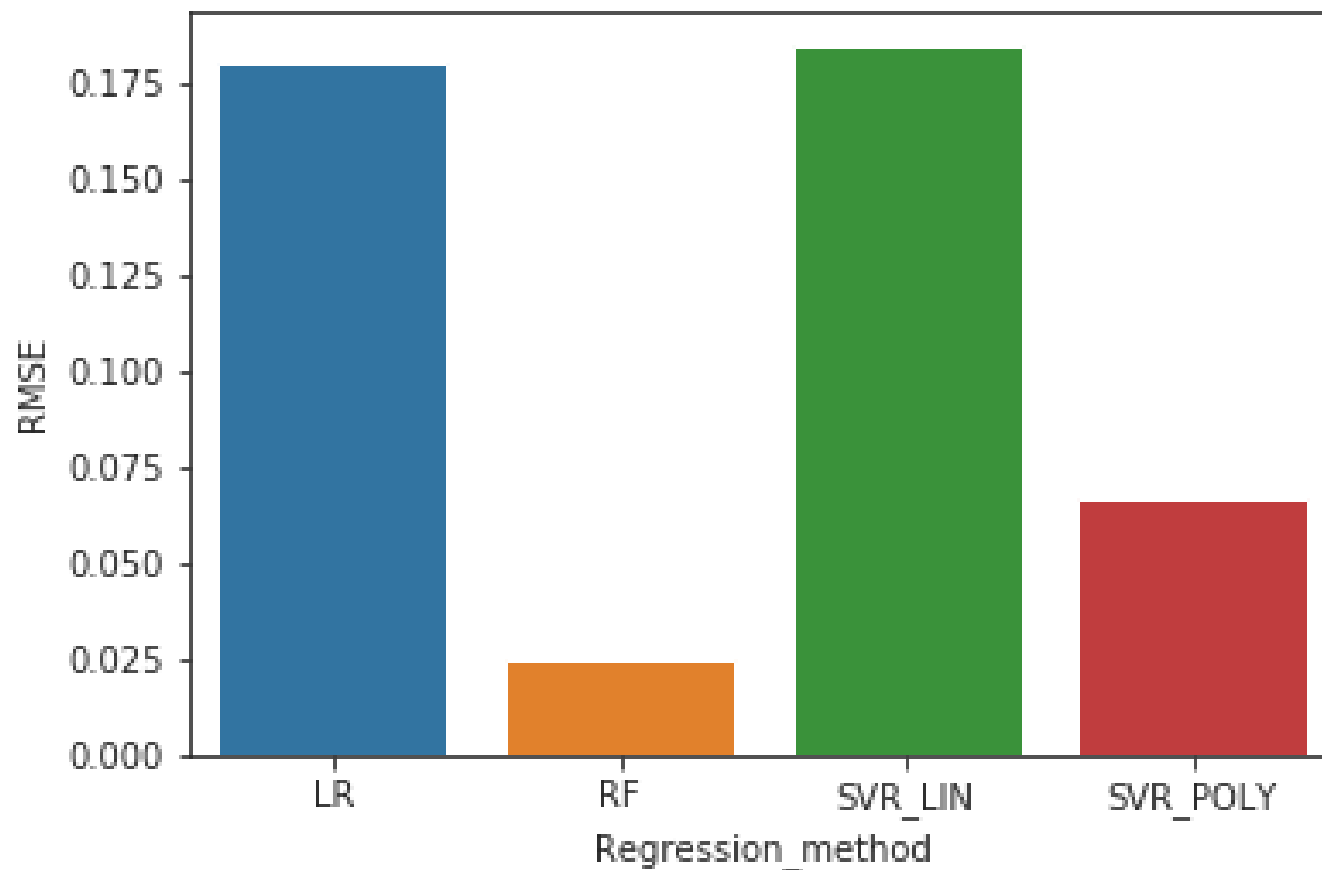
Sample prediction

```
In [*]:  ▶| # Since random forest makes the best prediction, here you can predict required cpu bw
            X_new = [[input("Enter the required response time: ")]]

            predict = regressor1.predict(X_new)
            print("Approx. cpu bandwidth required: ", predict)

         Enter the required response time:  [_____]
```

```
In [31]:  ▶| # Since random forest makes the best prediction, here you can predict required cpu bw
             X_new = [[input("Enter the required response time: ")]]

             predict = regressor1.predict(X_new)
             print("Approx. cpu bandwidth required: ", predict)

          Enter the required response time: 0.2
          Approx. cpu bandwidth required:  [0.96267893]
```

http://localhost:8888/notebooks/project/project/prediction_model.ipynb

Correlation matrix - Traefik
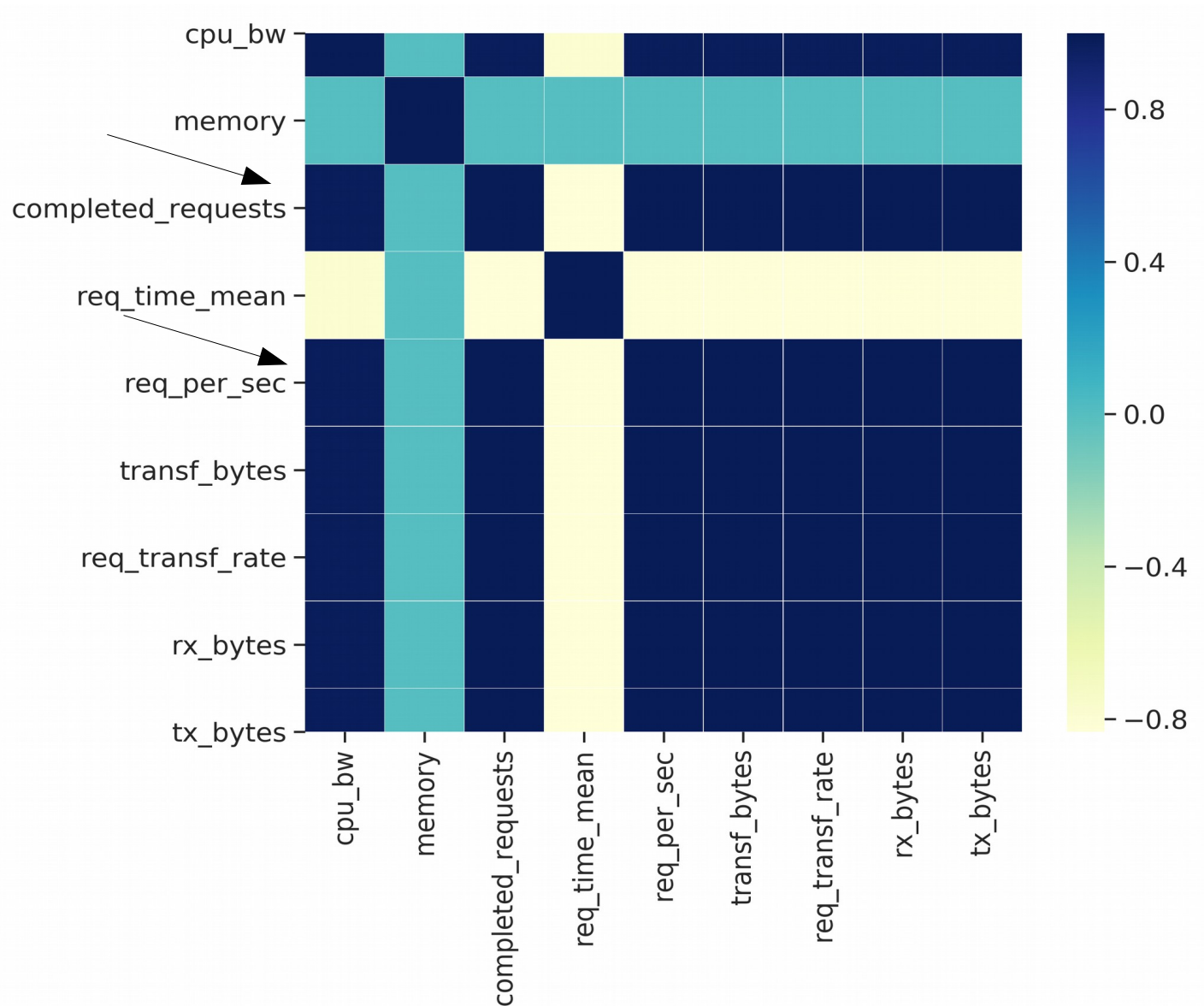
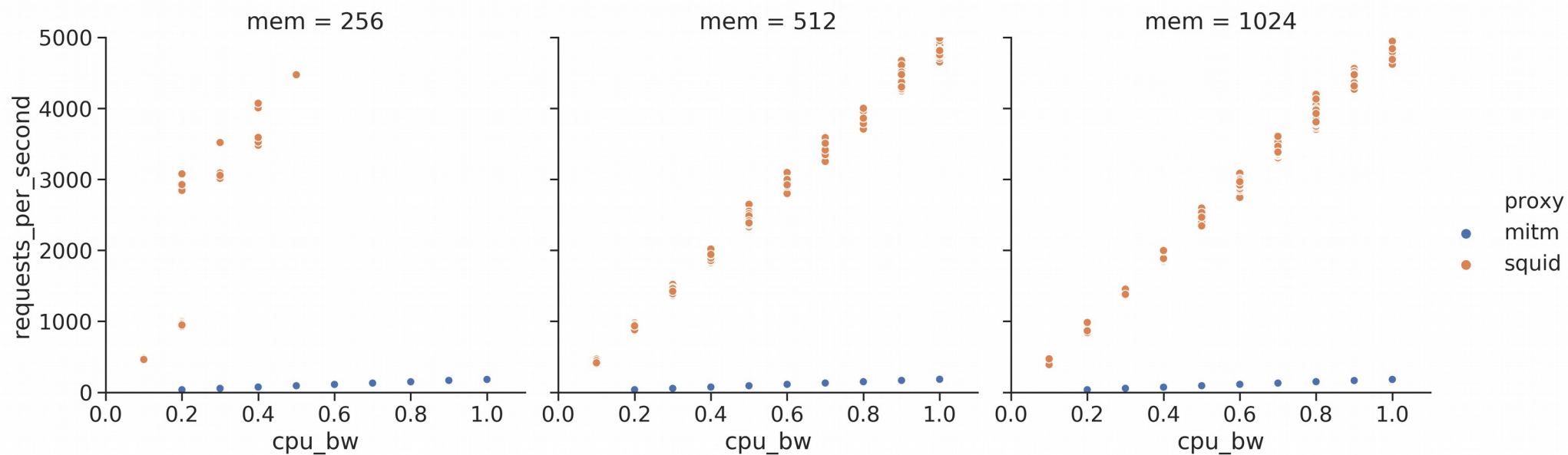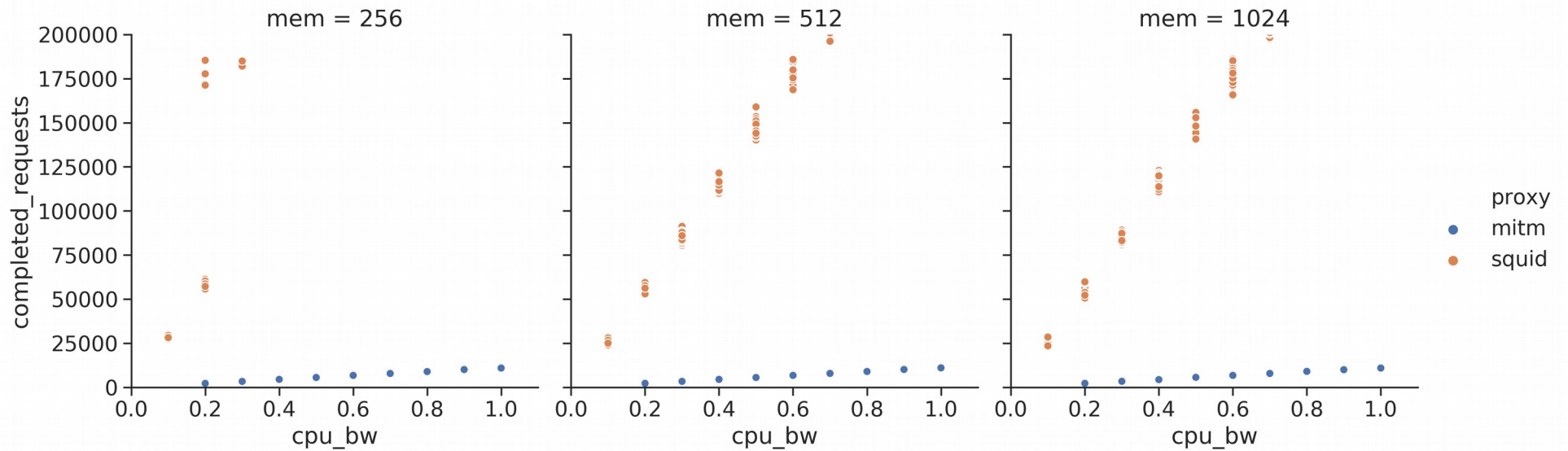# mitmproxy
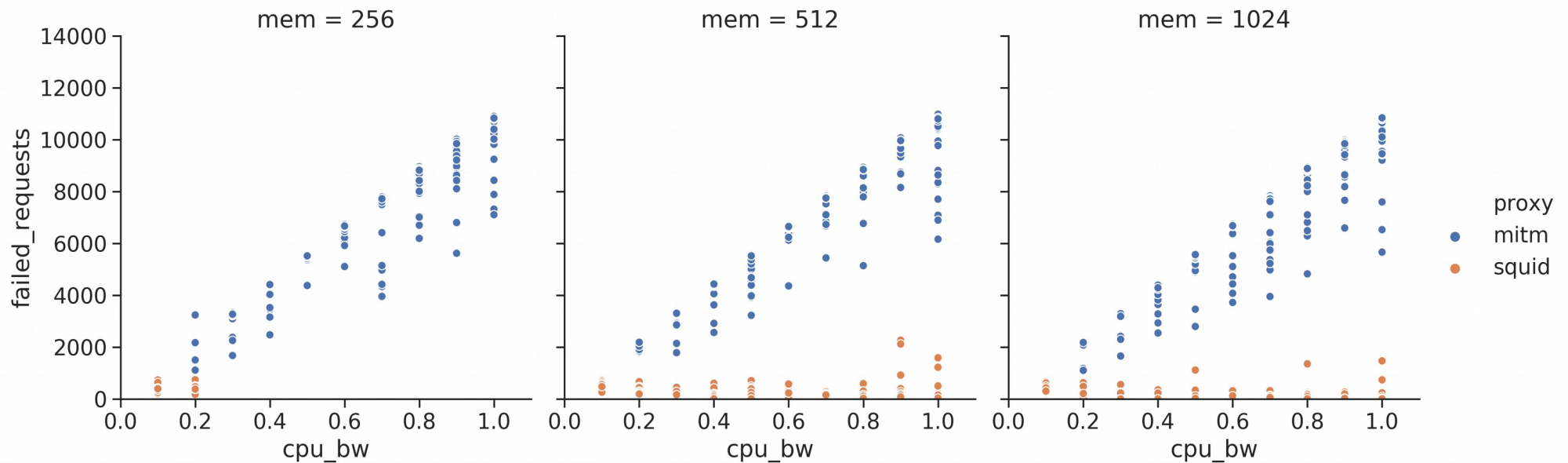
Experimental setup (Proxy)
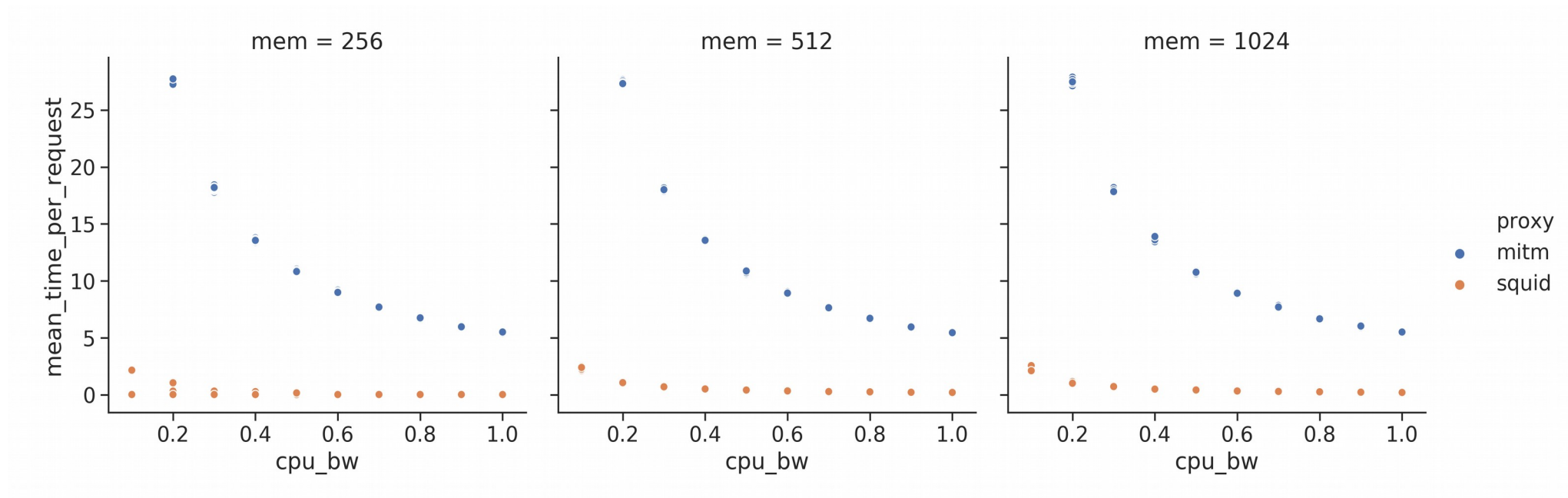
Requests per second vs CPU bw

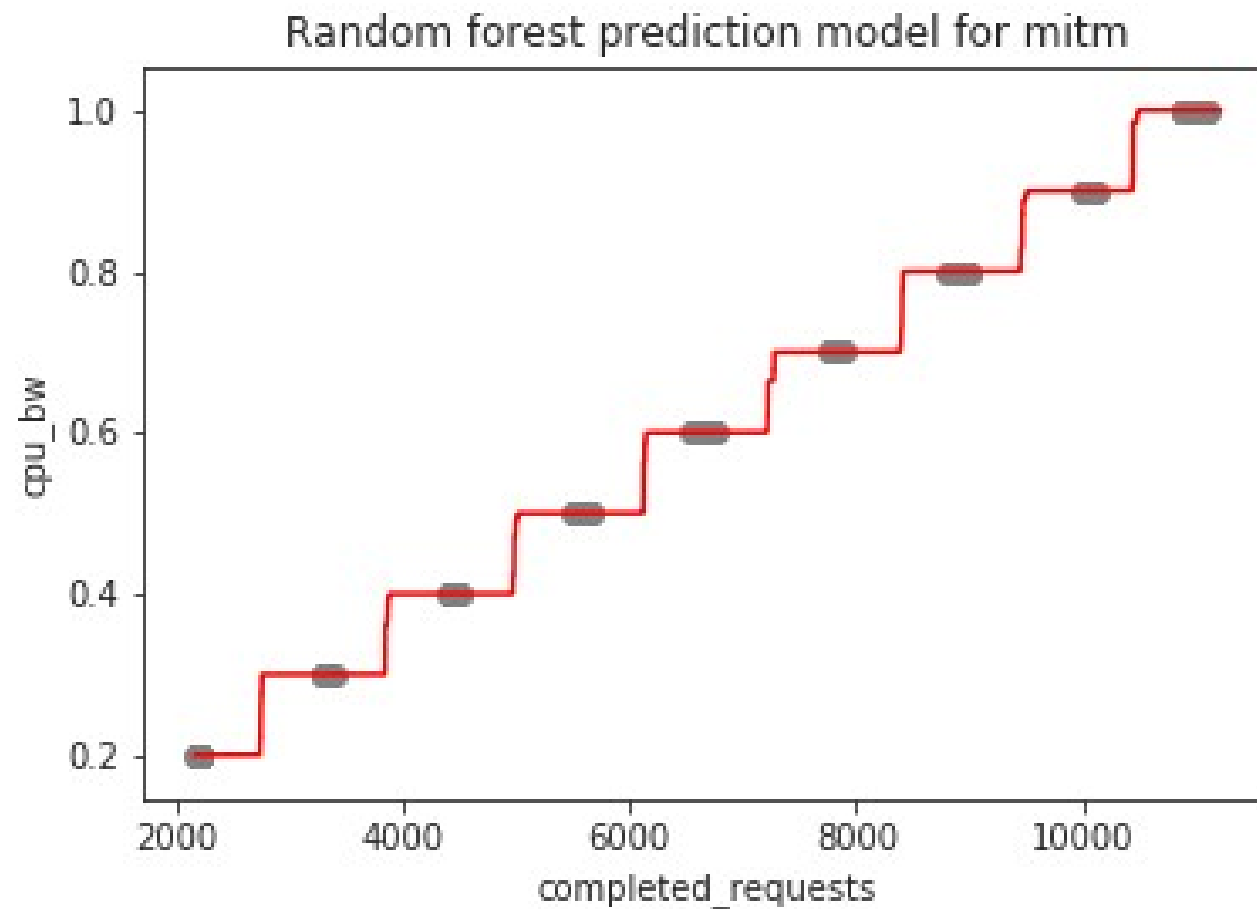# Completed requests vs CPU bw

Failed requests vs CPU bw

Response time vs CPU bw

Observations

Proxy	CPU bw	Memory	Completed requests	Failed requests
mitmproxy	+	+ (above 64MB)	- But increases with CPU bw	+ Also increases with cpu bw
squid	+	+ (above 256 MB)	+ Increases with CPU bw	- Not much as compared to mitmproxy

Simple prediction model - Mitmproxy

Random forest prediction model for mitm
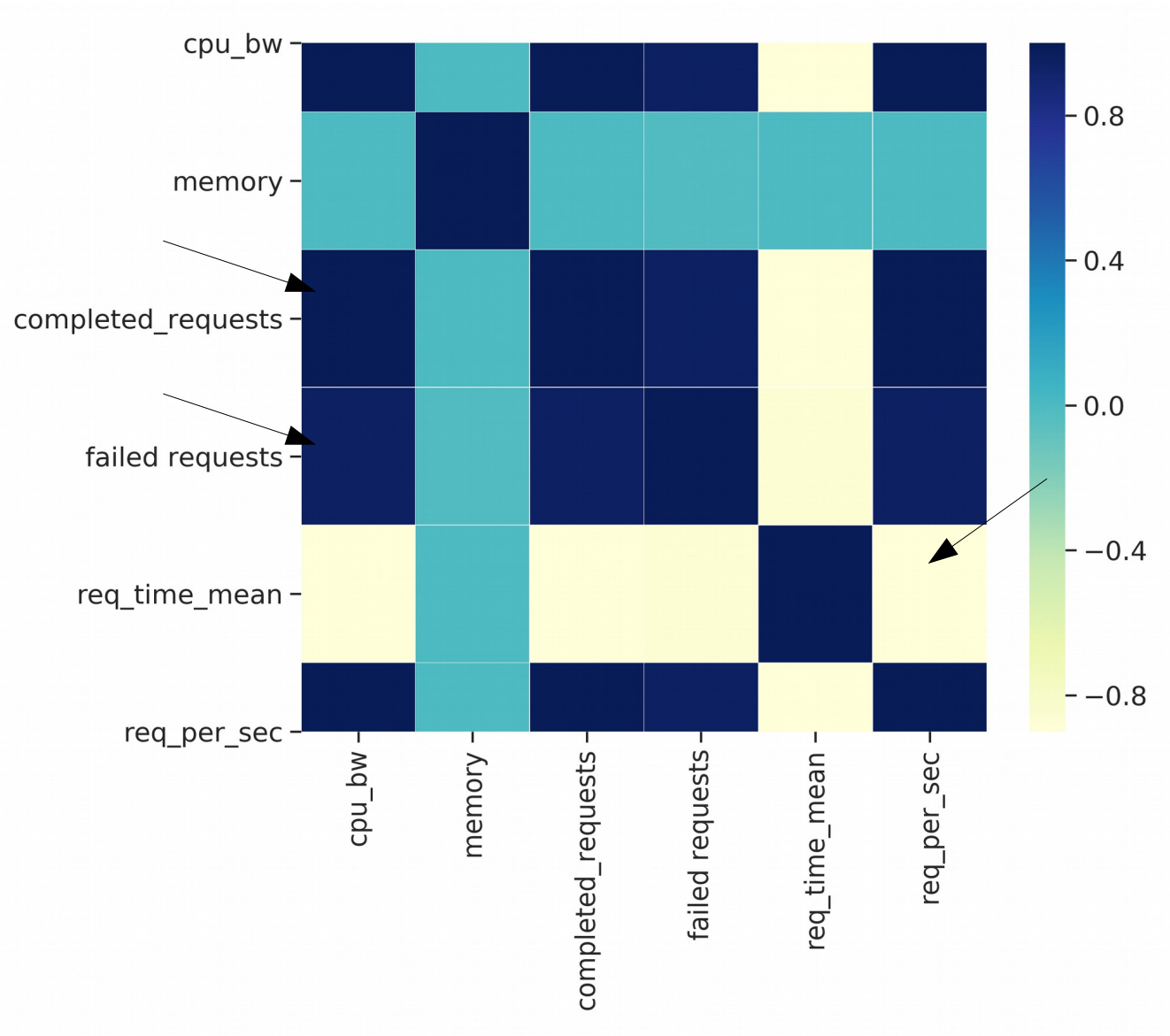
Sample prediction

```
In [15]:  ▶| # Here you can make a prediction for available cpu bandwidth

             X_new = [[input("Required amount of completed requests: ")]]

             predict = regressor.predict(X_new)
             print("CPU bw to be used ", predict)

             Required amount of completed requests: 5000
             CPU bw to be used  [0.4899]
```

http://localhost:8888/notebooks/project/project/random_forest.ipynb

Correlation matrix - Mitmproxy

THANKS!