

# Machine Learning techniques to Model Data Intensive Application Performance

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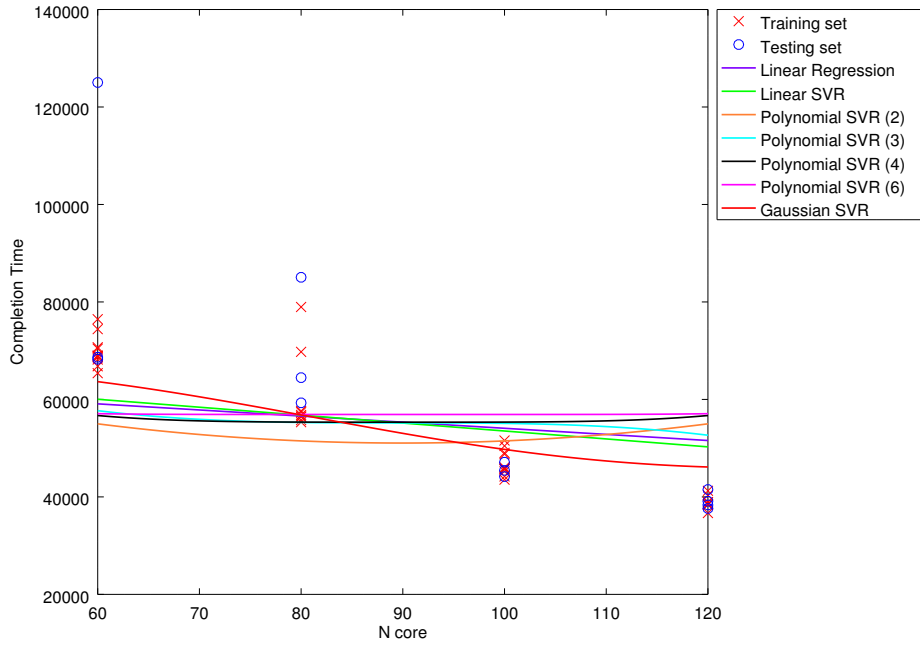
# 1 Fixed Datasize, All the Features

## 1.1 Query R1

### 1.1.1 Query R1 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.3041	0.9591	57811	0.1197	-0.1014
Linear SVR	0.3418	0.9830	58151	0.1379	-0.1117
Polynomial SVR (2)	0.7566	0.7509	65973	5.1551	0.0961
Polynomial SVR (3)	4.2307	0.7818	78538	0.9196	1.2843
Polynomial SVR (4)	1.1959	0.4622	66397	2.9871	-0.1070
Polynomial SVR (6)	5.3772	0.4964	92865	10.5804	1.0027
Gaussian SVR	1.2070	0.4548	63139	2.0853	-0.3691

**Table 1:** Results for R1-250

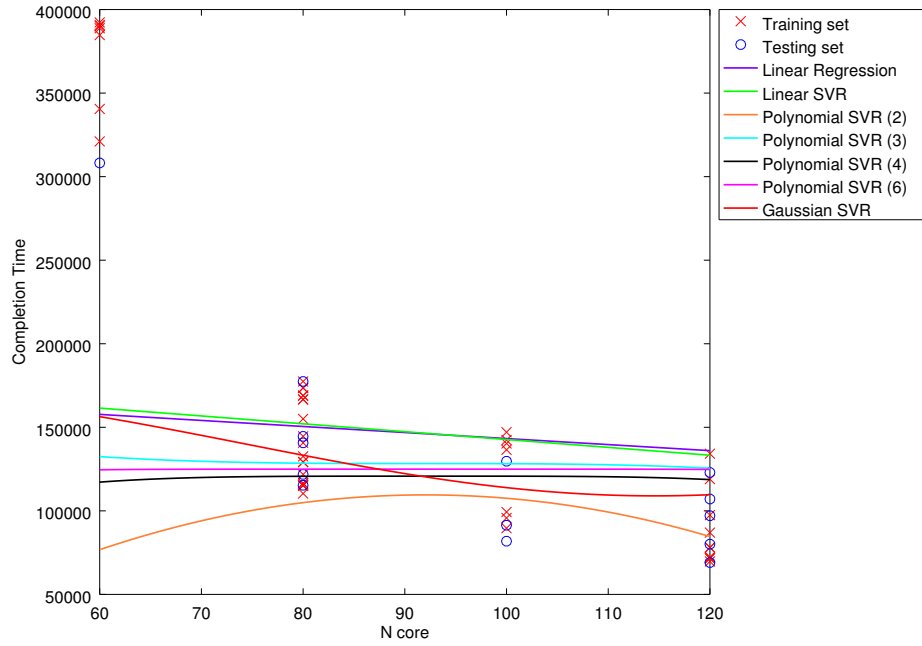


**Figure 1:** Completion time vs ncores for query R1 with datasize 250

### 1.1.2 Query R1 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0542	0.9938	149334	0.1271	-0.0207
Linear SVR	0.0751	0.9895	151476	0.2409	-0.0116
Polynomial SVR (2)	0.4332	0.6640	169212	1.0417	-0.0427
Polynomial SVR (3)	0.3357	0.8853	163273	0.5244	-0.0205
Polynomial SVR (4)	0.5014	0.6016	169259	1.0401	-0.0484
Polynomial SVR (6)	0.5554	0.4560	172257	2.6883	-0.0169
Gaussian SVR	0.3650	0.8383	162324	0.8210	-0.0202

**Table 2:** Results for R1-500

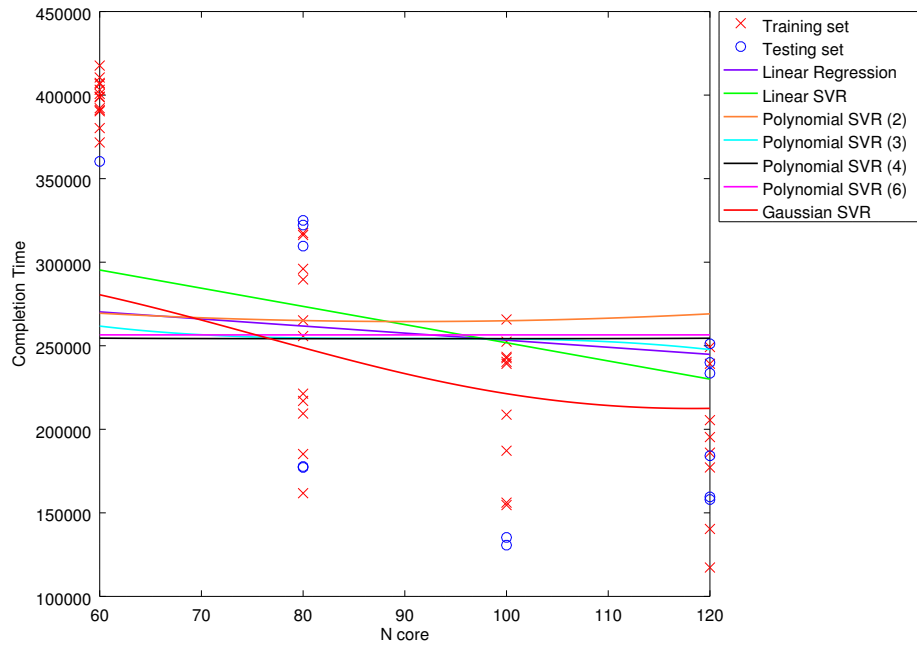


**Figure 2:** Completion time vs ncores for query R1 with datasize 500

### 1.1.3 Query R1 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.1572	0.9665	266884	0.1727	0.0236
Linear SVR	0.2120	0.9688	272955	0.2542	0.1291
Polynomial SVR (2)	0.7508	0.3524	315378	3.4186	0.2712
Polynomial SVR (3)	0.3593	0.9177	283626	0.7417	0.0705
Polynomial SVR (4)	0.7471	0.3213	313379	60.2071	0.1553
Polynomial SVR (6)	0.7398	0.3099	312928	72.9881	0.1585
Gaussian SVR	0.2646	0.9347	275101	0.3102	0.1353

**Table 3:** Results for R1-750

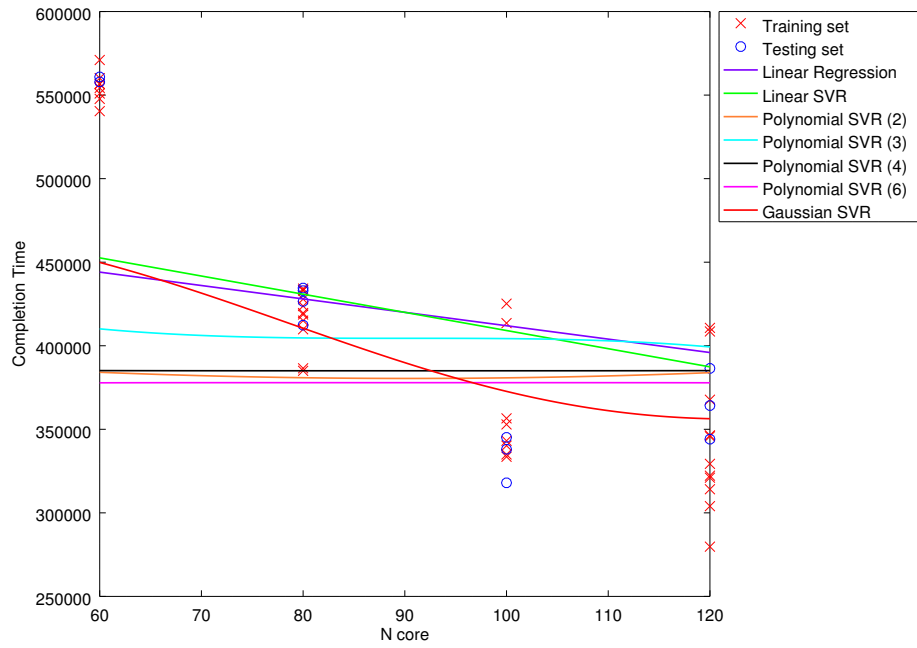


**Figure 3:** Completion time vs ncores for query R1 with datasize 750

### 1.1.4 Query R1 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.1415	0.9746	428799	12.4975	0.0202
Linear SVR	0.1468	0.9778	429594	0.4042	0.0313
Polynomial SVR (2)	0.8789	0.1424	485672	6.3522	0.1723
Polynomial SVR (3)	1.0942	0.6134	471899	0.9966	-0.3248
Polynomial SVR (4)	0.9412	0.1817	478644	1.5192	0.2905
Polynomial SVR (6)	4.8069	0.0294	603664	0.9923	1.7839
Gaussian SVR	0.4428	0.8139	442219	5.7558	0.2039

**Table 4:** Results for R1-1000



**Figure 4:** Completion time vs ncores for query R1 with datasize 1000

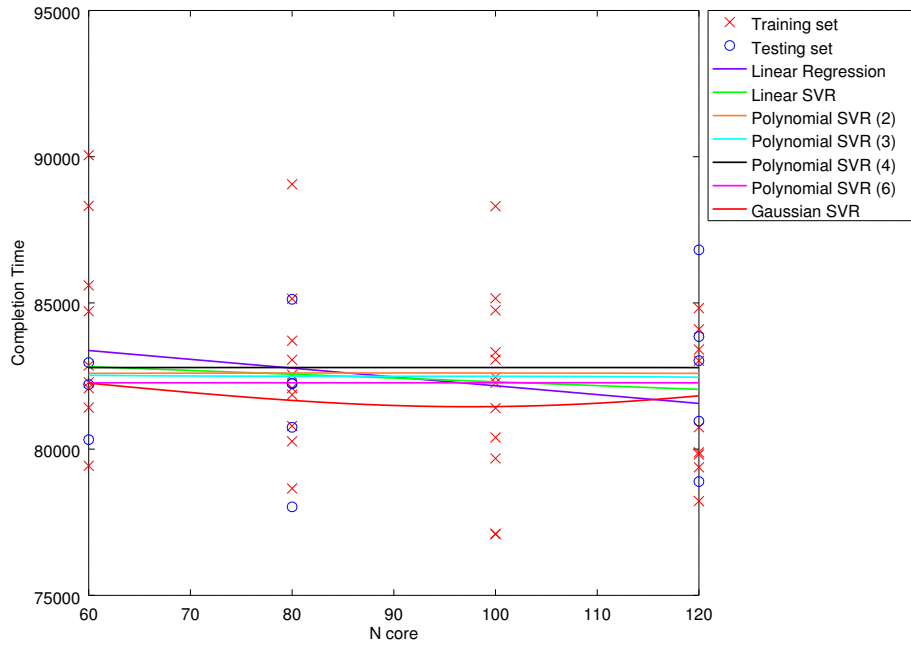


## 1.2 Query R2

### 1.2.1 Query R2 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2833	0.8674	83142	0.6094	0.1530
Linear SVR	0.2360	0.9197	83061	0.9073	0.0259
Polynomial SVR (2)	0.9310	0.0443	84553	3.0651	0.1369
Polynomial SVR (3)	0.6599	0.6297	83769	6.0596	0.2908
Polynomial SVR (4)	0.7044	0.5309	84118	4.1167	0.2338
Polynomial SVR (6)	0.7484	0.4866	84168	14.5076	0.0498
Gaussian SVR	0.3253	0.8273	83303	0.6058	0.0159

**Table 5:** Results for R2-250

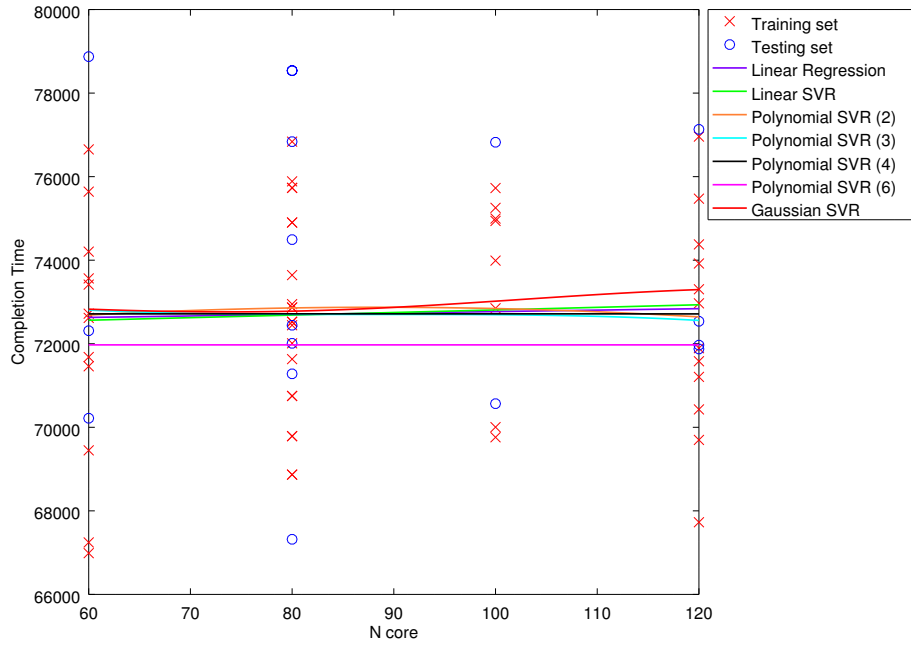


**Figure 5:** Completion time vs ncores for query R2 with datasize 250

### 1.2.2 Query R2 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2486	0.9587	73222	0.5333	-0.0463
Linear SVR	0.2416	0.9633	73182	0.4394	-0.0307
Polynomial SVR (2)	2.2423	0.0470	76750	2.9641	-0.1625
Polynomial SVR (3)	4.4063	0.3043	77823	2.0078	0.9745
Polynomial SVR (4)	1.6306	0.0087	76066	15.9898	-0.2811
Polynomial SVR (6)	1.3874	0.0000	75520	3.6901	-0.6539
Gaussian SVR	0.7416	0.7166	74076	3.4206	-0.2667

**Table 6:** Results for R2-500

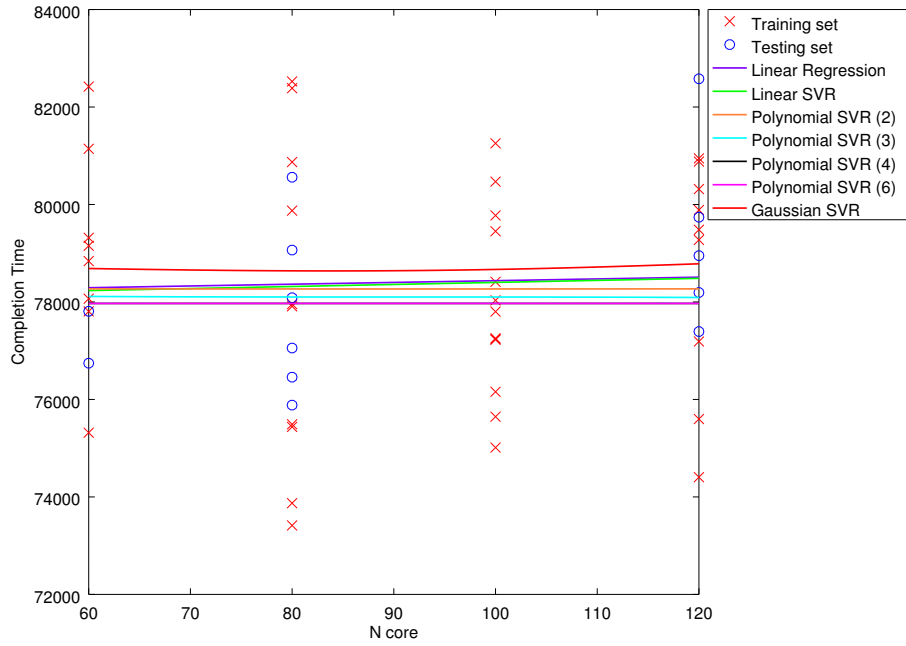


**Figure 6:** Completion time vs ncores for query R2 with datasize 500

### 1.2.3 Query R2 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2218	0.9212	78832	0.9479	0.0374
Linear SVR	0.2474	0.9477	78888	1.5734	0.0137
Polynomial SVR (2)	0.8172	0.2052	79812	6.7278	-0.0623
Polynomial SVR (3)	0.5008	0.7150	79358	3.0113	-0.0459
Polynomial SVR (4)	0.8079	-0.0000	79779	3.1582	-0.1683
Polynomial SVR (6)	0.8079	-0.0000	79779	3.1582	-0.1683
Gaussian SVR	0.4815	0.7359	79228	2.3664	0.1155

**Table 7:** Results for R2-750

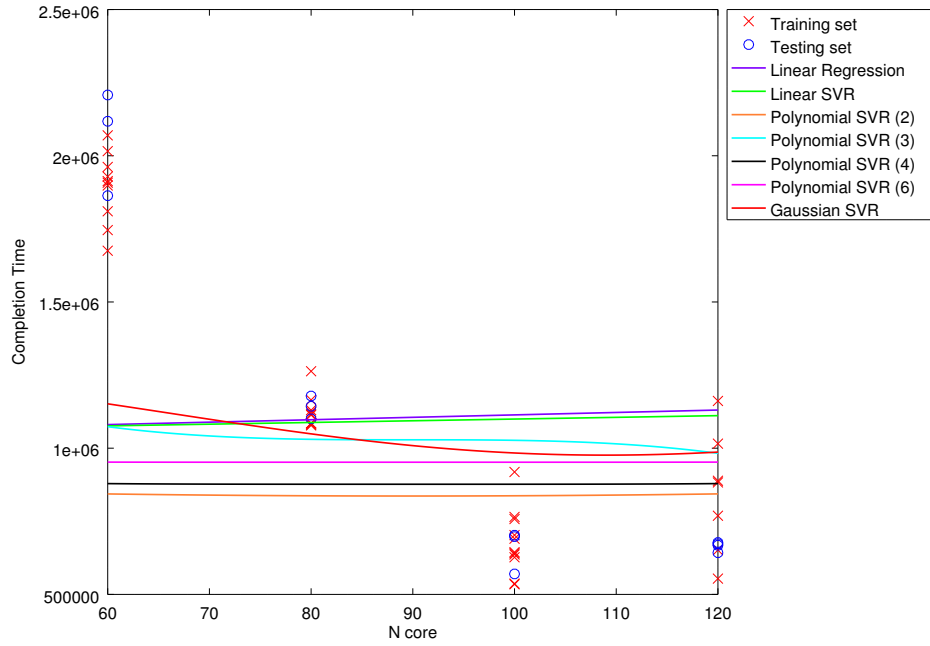


**Figure 7:** Completion time vs ncores for query R2 with datasize 750

### 1.2.4 Query R2 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0461	0.9983	1123883	0.1832	0.0106
Linear SVR	0.0795	0.9955	1140986	0.2159	-0.0181
Polynomial SVR (2)	0.7956	0.5804	1491974	8.3707	0.0548
Polynomial SVR (3)	0.4919	0.9200	1280834	0.6962	0.1826
Polynomial SVR (4)	0.8016	0.6890	1454684	2.8509	0.3630
Polynomial SVR (6)	0.5958	0.7861	1386601	3.8379	0.2563
Gaussian SVR	0.2389	0.9715	1180539	0.3227	-0.0662

**Table 8:** Results for R2-1000



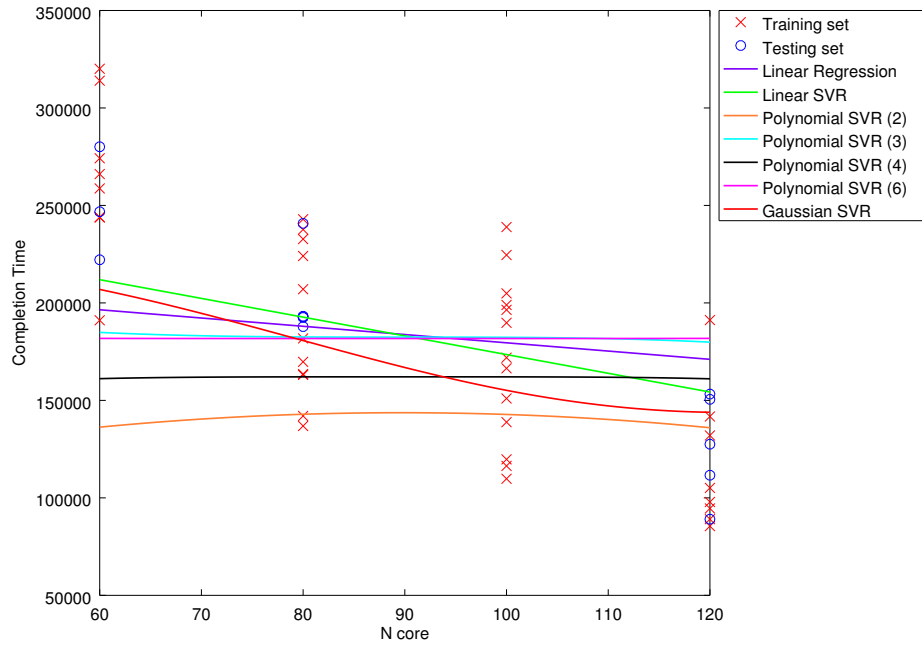
**Figure 8:** Completion time vs ncores for query R2 with datasize 1000

### 1.3 Query R3

#### 1.3.1 Query R3 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2164	0.9356	189440	0.1617	-0.0659
Linear SVR	0.1819	0.9594	190378	0.2102	-0.0492
Polynomial SVR (2)	0.7504	0.3004	226788	2.4661	-0.2155
Polynomial SVR (3)	0.5266	0.8156	211407	11.8470	-0.0840
Polynomial SVR (4)	1.1775	0.0110	230749	2.6098	0.2008
Polynomial SVR (6)	0.7168	0.3378	223057	15.8449	-0.1608
Gaussian SVR	0.3876	0.8415	198753	0.6241	0.0112

**Table 9:** Results for R3-250

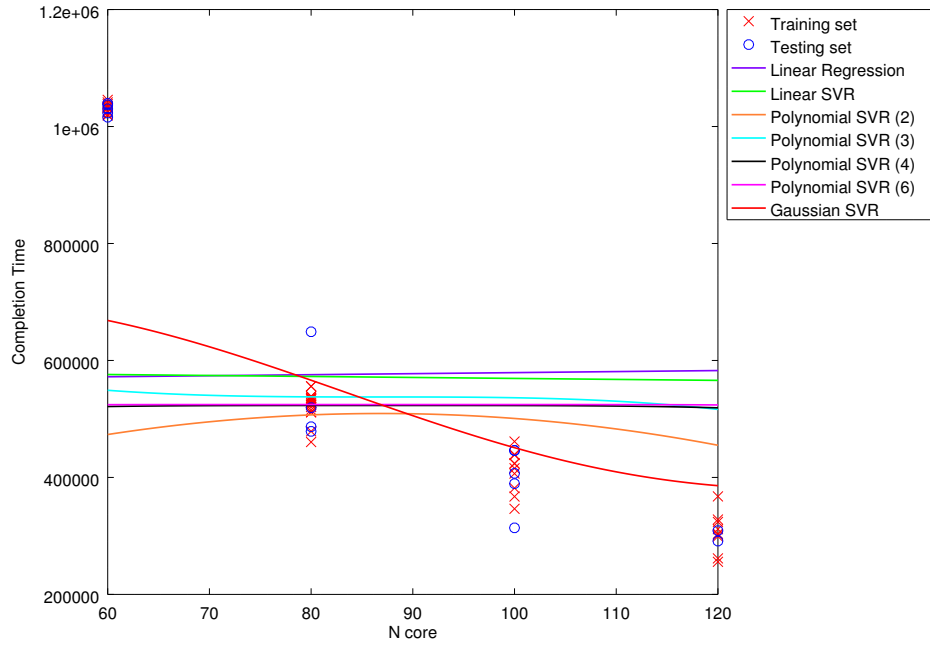


**Figure 9:** Completion time vs ncores for query R3 with datasize 250

### 1.3.2 Query R3 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0510	0.9978	586577	0.0743	-0.0177
Linear SVR	0.0672	0.9981	591662	0.0863	-0.0430
Polynomial SVR (2)	0.5754	0.7757	704864	0.7898	-0.1907
Polynomial SVR (3)	0.2858	0.9404	645340	0.7538	-0.0068
Polynomial SVR (4)	0.4466	0.9154	681401	0.7641	-0.0798
Polynomial SVR (6)	0.5459	0.8250	699037	1.0813	-0.0932
Gaussian SVR	0.1400	0.9840	605179	93.5190	-0.0230

**Table 10:** Results for R3-500

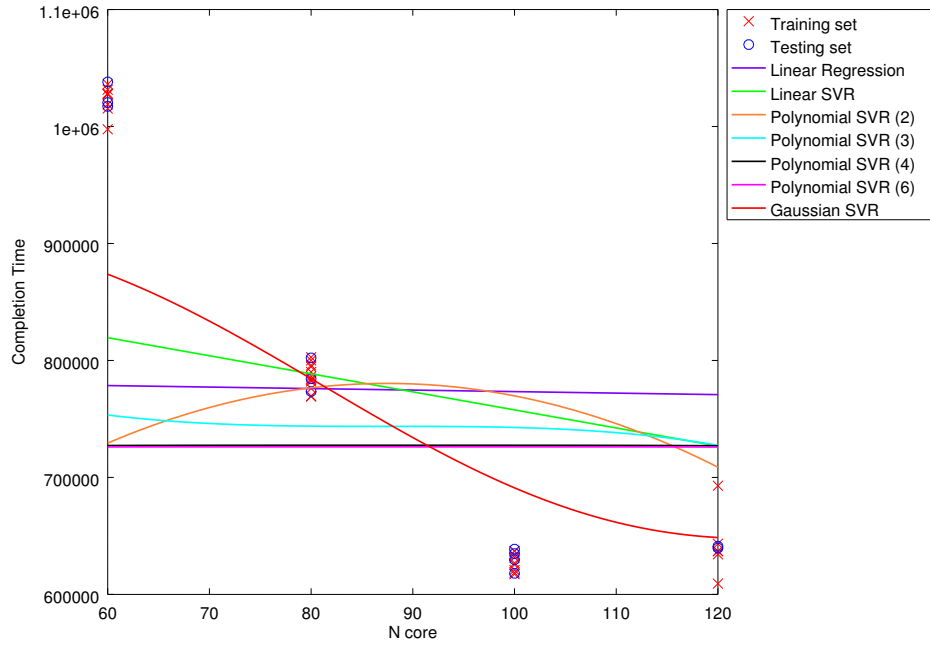


**Figure 10:** Completion time vs ncores for query R3 with datasize 500

### 1.3.3 Query R3 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0194	0.9996	777482	0.1082	-0.0036
Linear SVR	0.0993	0.9928	790154	0.2445	0.0098
Polynomial SVR (2)	0.6979	0.5785	872326	1.1036	-0.0927
Polynomial SVR (3)	0.3900	0.8646	826245	1.0606	-0.0070
Polynomial SVR (4)	0.6745	0.6525	871989	1.9560	0.0237
Polynomial SVR (6)	0.7360	0.6058	878198	2.6868	-0.0398
Gaussian SVR	0.2505	0.9566	804169	0.4213	0.1072

**Table 11:** Results for R3-750

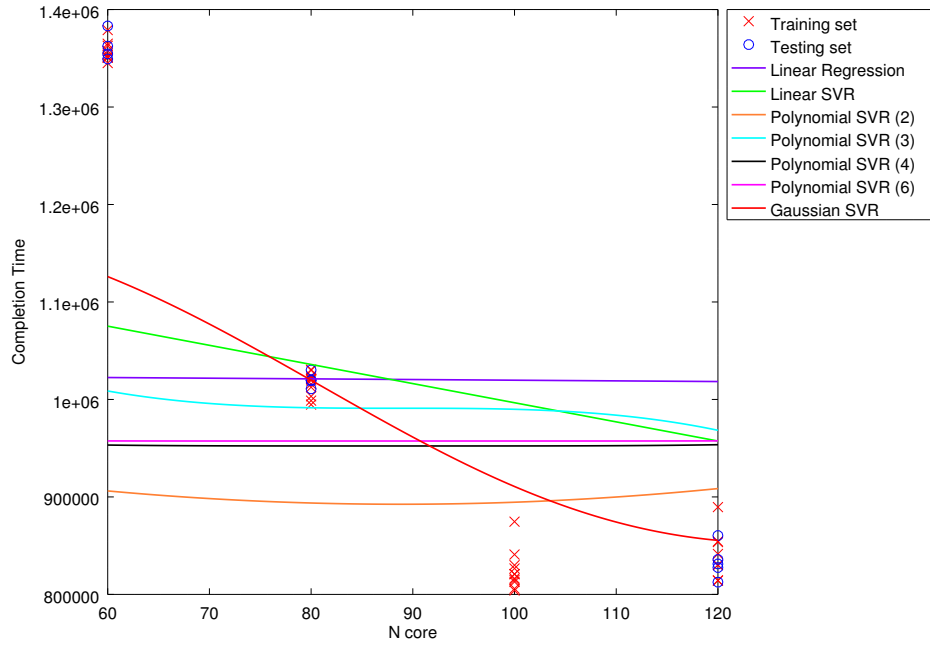


**Figure 11:** Completion time vs ncores for query R3 with datasize 750

### 1.3.4 Query R3 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0992	0.9903	1030310	0.4165	-0.0382
Linear SVR	0.1375	0.9868	1045712	0.4131	-0.0644
Polynomial SVR (2)	0.9305	0.1595	1201890	19.7317	0.0096
Polynomial SVR (3)	0.5255	0.8592	1092985	0.5579	-0.1767
Polynomial SVR (4)	1.0806	0.0030	1216549	10.6991	-0.0933
Polynomial SVR (6)	1.1681	0.0031	1221010	6.4095	-0.1238
Gaussian SVR	0.4074	0.8877	1087163	1.5362	-0.0031

**Table 12:** Results for R3-1000



**Figure 12:** Completion time vs ncores for query R3 with datasize 1000

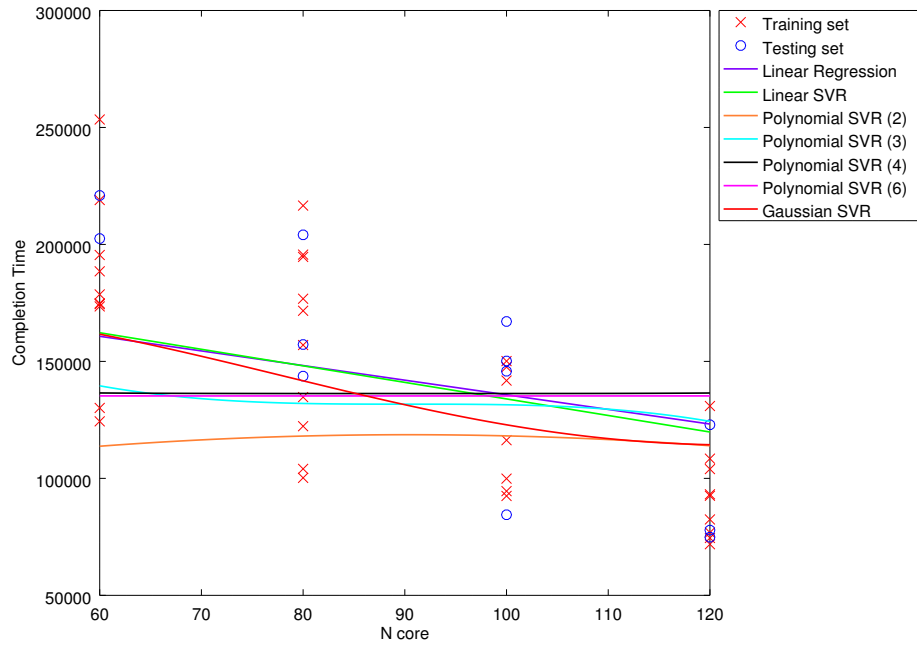


## 1.4 Query R4

### 1.4.1 Query R4 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0978	0.9896	145623	0.1950	0.0402
Linear SVR	0.0868	0.9921	145413	0.1698	0.0139
Polynomial SVR (2)	0.9021	0.3769	176046	4.1390	0.0449
Polynomial SVR (3)	0.4383	0.8109	158227	1.5337	-0.0472
Polynomial SVR (4)	0.7075	0.4704	166908	5.1402	-0.1096
Polynomial SVR (6)	0.7548	0.4287	169159	6.1307	-0.2045
Gaussian SVR	0.1831	0.9780	148802	0.3789	-0.0181

**Table 13:** Results for R4-250

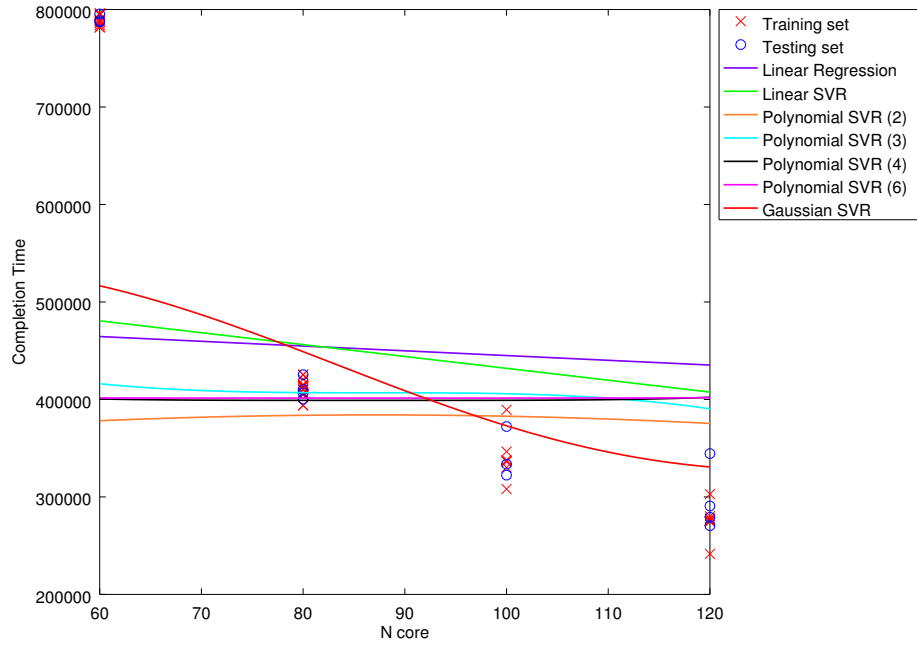


**Figure 13:** Completion time vs ncores for query R4 with datasize 250

### 1.4.2 Query R4 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.1108	0.9886	462365	0.0884	-0.0602
Linear SVR	0.1631	0.9825	470614	0.1566	-0.0834
Polynomial SVR (2)	0.7309	0.5773	544504	1.9639	0.2660
Polynomial SVR (3)	0.3500	0.9056	485019	0.2526	-0.0776
Polynomial SVR (4)	0.6397	0.6977	523293	1.0907	0.2907
Polynomial SVR (6)	0.5599	0.7797	515591	4.6778	0.2777
Gaussian SVR	0.1726	0.9821	470779	0.4858	0.0942

**Table 14:** Results for R4-500

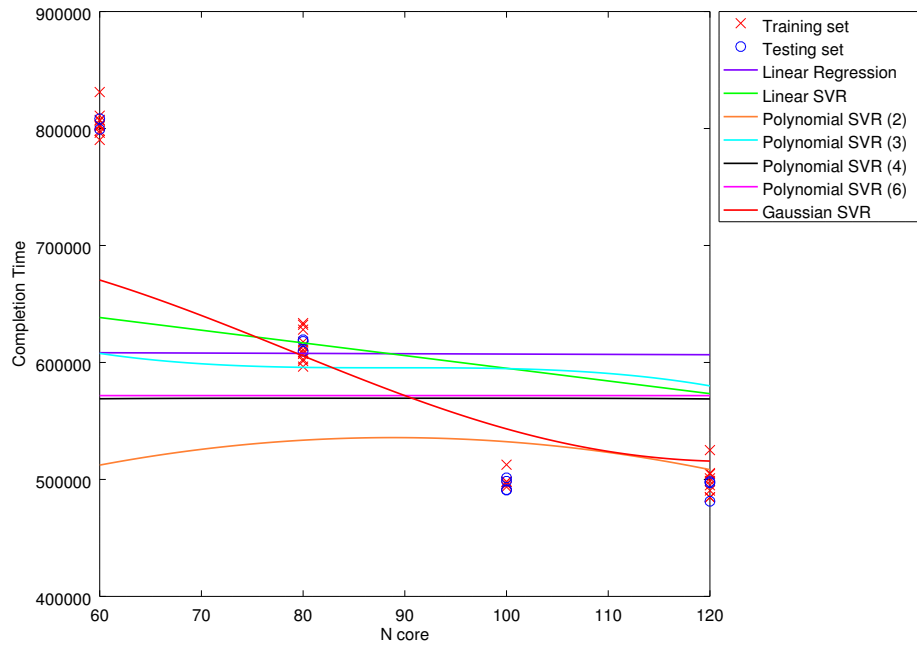


**Figure 14:** Completion time vs ncores for query R4 with datasize 500

### 1.4.3 Query R4 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0255	0.9992	609804	0.0775	-0.0103
Linear SVR	0.0855	0.9918	617776	0.2040	-0.0011
Polynomial SVR (2)	0.6525	0.5467	687086	1.5598	0.0196
Polynomial SVR (3)	0.2783	0.9260	633333	5.1457	0.1062
Polynomial SVR (4)	0.7808	0.5636	693469	18.2217	0.0076
Polynomial SVR (6)	0.8117	0.6201	696905	4.7255	0.0330
Gaussian SVR	0.2473	0.9547	631812	0.5078	0.0401

**Table 15:** Results for R4-750

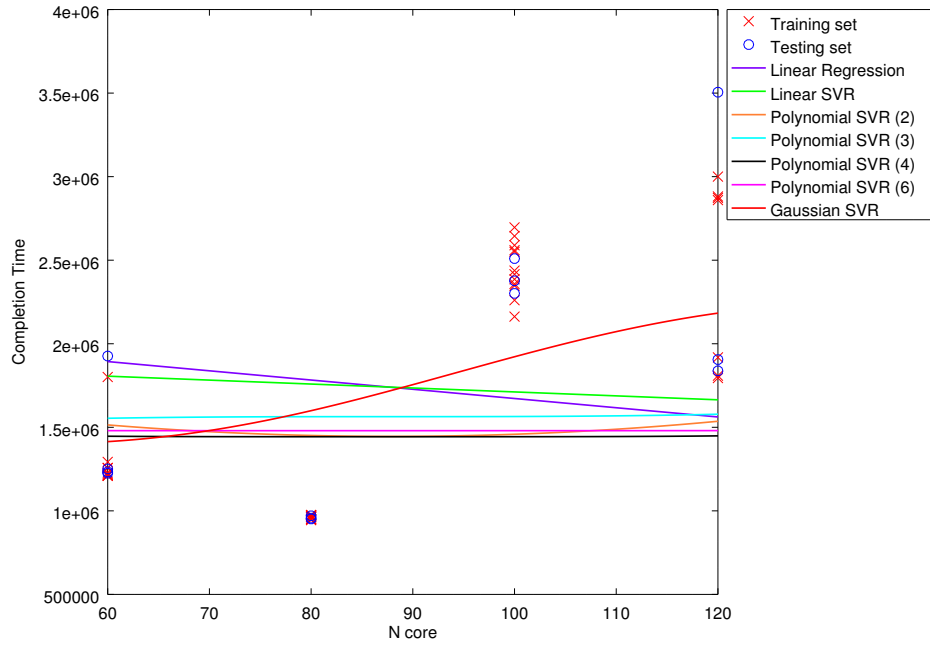


**Figure 15:** Completion time vs ncores for query R4 with datasize 750

#### 1.4.4 Query R4 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.1381	0.9805	1804008	0.4600	-0.0308
Linear SVR	0.1499	0.9780	1813721	0.3504	-0.0294
Polynomial SVR (2)	0.6424	0.6139	2199589	4.4349	0.1704
Polynomial SVR (3)	0.9305	0.6699	2185478	7.9108	0.2080
Polynomial SVR (4)	1.6562	0.5290	2441940	7.0451	0.3639
Polynomial SVR (6)	2.7937	0.4828	2740708	6.7236	0.6345
Gaussian SVR	0.3607	0.8849	1876365	0.3316	-0.1021

**Table 16:** Results for R4-1000



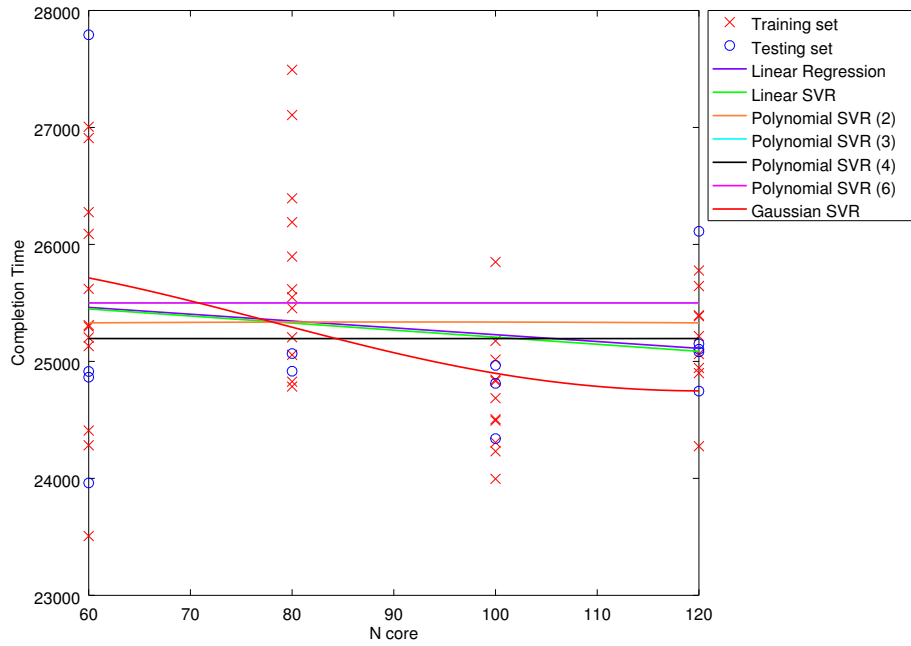
**Figure 16:** Completion time vs ncores for query R4 with datasize 1000

## 1.5 Query R5

### 1.5.1 Query R5 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.7965	0.4265	25688	1.2827	0.0152
Linear SVR	0.8069	0.4848	25686	2.0375	0.0249
Polynomial SVR (2)	1.0778	0.0441	25968	3.1023	0.0848
Polynomial SVR (3)	1.1435	0.2020	26070	3.6670	0.4487
Polynomial SVR (4)	1.0392	0.0249	25845	38.4714	0.0357
Polynomial SVR (6)	1.1437	0.0000	26070	3.6631	0.4490
Gaussian SVR	0.7553	0.4996	25722	0.9501	-0.1234

**Table 17:** Results for R5-250

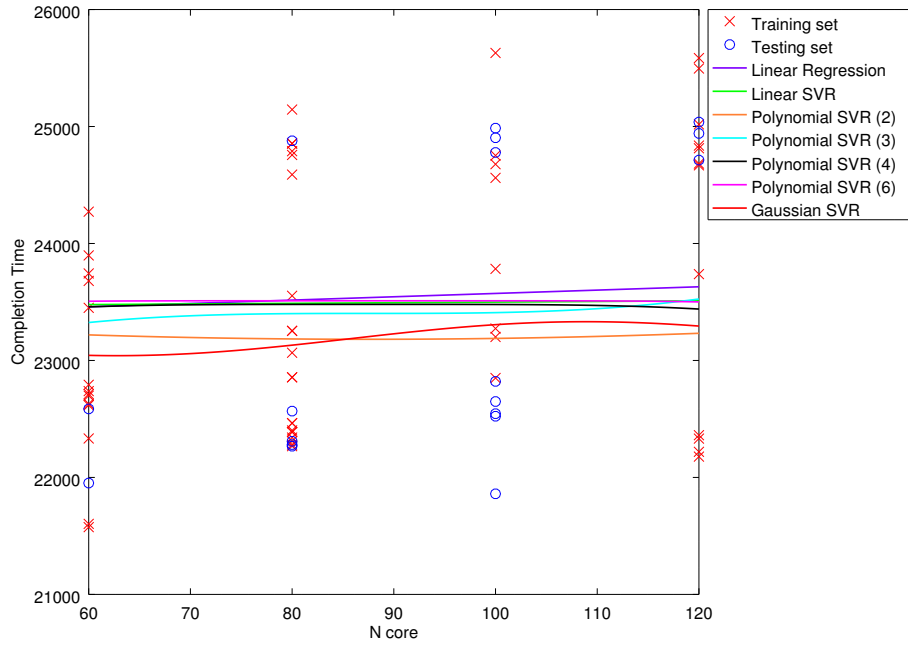


**Figure 17:** Completion time vs ncores for query R5 with datasize 250

### 1.5.2 Query R5 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2335	0.9462	23773	0.2129	-0.0094
Linear SVR	0.1635	0.9759	23707	0.1380	-0.0400
Polynomial SVR (2)	0.7958	0.6893	24451	11.3752	0.2039
Polynomial SVR (3)	0.6675	0.6642	24047	0.4970	-0.1076
Polynomial SVR (4)	1.0322	0.1199	24583	5.8286	0.3847
Polynomial SVR (6)	2.7907	0.0083	25512	12.6170	1.0738
Gaussian SVR	0.2252	0.9546	23774	0.2359	-0.0122

**Table 18:** Results for R5-500

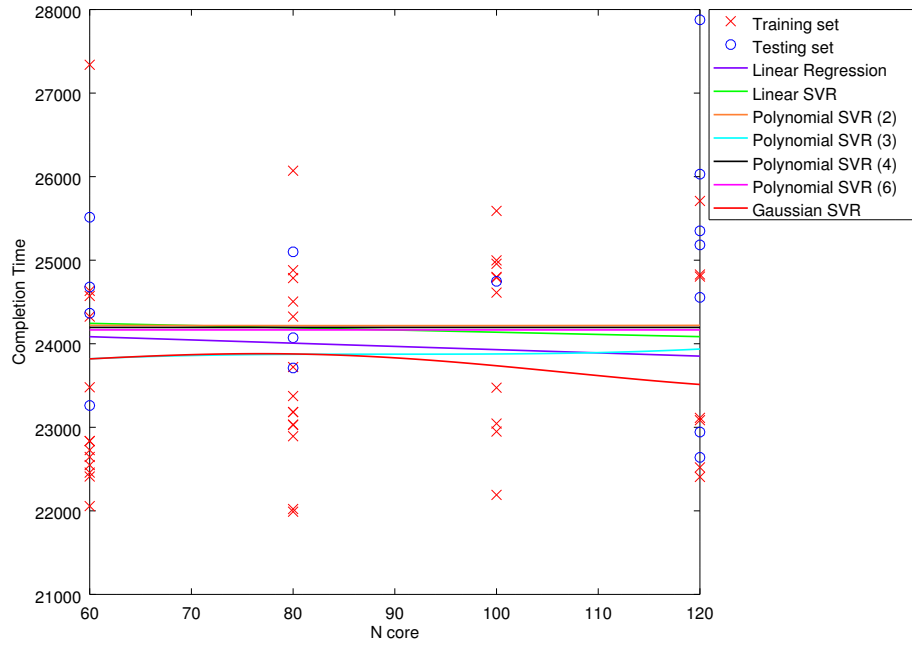


**Figure 18:** Completion time vs ncores for query R5 with datasize 500

### 1.5.3 Query R5 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.2490	-0.6264	24815	1.1406	-0.3032
Linear SVR	1.1195	0.0143	24794	2.7234	-0.2486
Polynomial SVR (2)	1.0444	0.0002	25027	5.3705	-0.3557
Polynomial SVR (3)	1.2104	0.0337	24862	1.5255	-0.3448
Polynomial SVR (4)	1.0613	0.0307	25044	17.5373	-0.3810
Polynomial SVR (6)	1.0719	0.0710	25053	9.2745	-0.4046
Gaussian SVR	0.9913	0.2058	24635	1.2416	-0.3754

**Table 19:** Results for R5-750

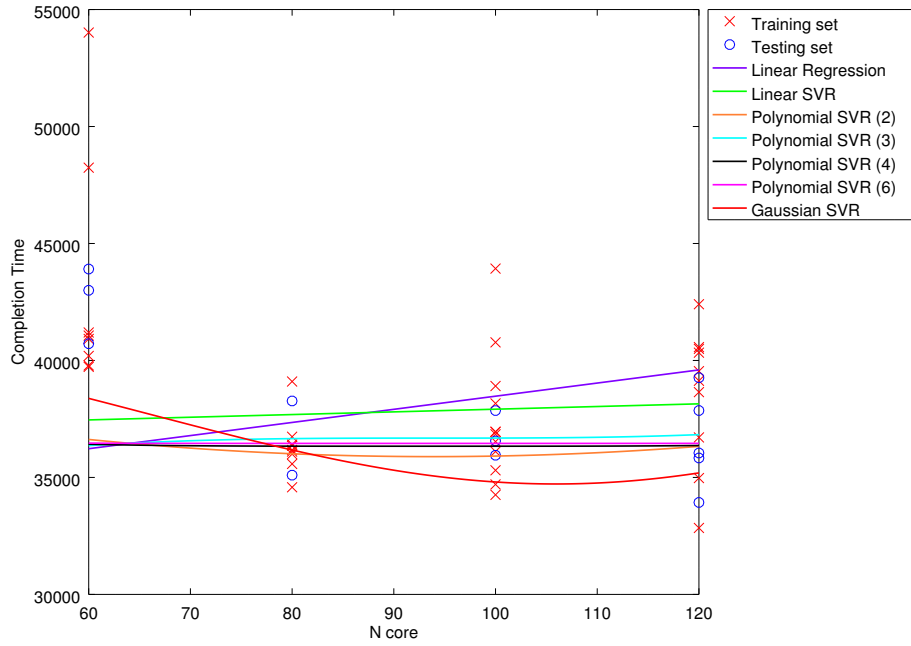


**Figure 19:** Completion time vs ncores for query R5 with datasize 750

### 1.5.4 Query R5 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.7715	0.1365	40268	4.8095	0.1134
Linear SVR	0.4840	0.6667	39598	1.5763	-0.0352
Polynomial SVR (2)	0.5299	0.8033	39459	0.6997	0.1937
Polynomial SVR (3)	0.4527	0.7609	39368	0.6924	0.0637
Polynomial SVR (4)	2.1454	0.6726	41543	0.9574	0.7941
Polynomial SVR (6)	8.5650	0.5560	49272	1.8561	2.9480
Gaussian SVR	0.3378	0.8434	39075	0.6641	0.0550

**Table 20:** Results for R5-1000



**Figure 20:** Completion time vs ncores for query R5 with datasize 1000



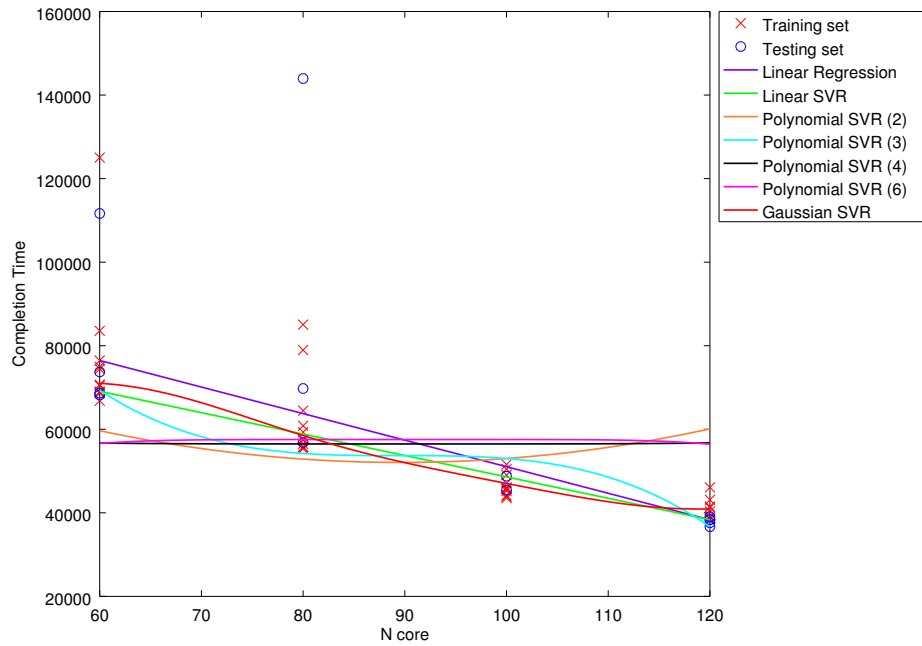
## 2 Fixed Datasize, Only *ncores*

### 2.1 Query R1

#### 2.1.1 Query R1 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.2075	0.3647	68861	1.6258	-0.3635
Linear SVR	1.2849	0.4436	68595	6.2353	-0.4838
Polynomial SVR (2)	1.5934	0.0830	80355	8.0774	-0.2627
Polynomial SVR (3)	1.3520	0.3512	70155	2.7404	-0.5287
Polynomial SVR (4)	1.5463	0.0938	79717	21.6531	-0.3012
Polynomial SVR (6)	1.5344	0.1080	79664	84.7876	-0.2897
Gaussian SVR	1.2809	0.4200	69434	8.6924	-0.4253

**Table 21:** Results for R1-250

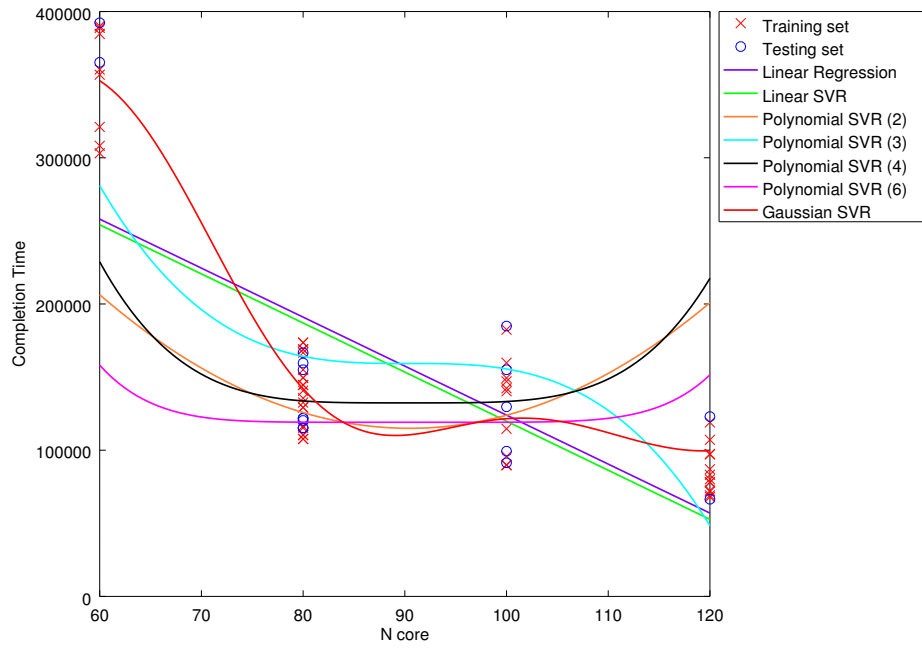


**Figure 21:** Completion time vs ncores for query R1 with datasize 250

### 2.1.2 Query R1 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.7251	0.4405	210667	1.2210	0.0864
Linear SVR	0.7201	0.4486	209619	1.2525	0.0171
Polynomial SVR (2)	0.8432	0.2950	205970	1.2352	-0.1621
Polynomial SVR (3)	0.5801	0.6689	197539	28.1452	0.0446
Polynomial SVR (4)	0.8077	0.3221	206099	1.2816	-0.0362
Polynomial SVR (6)	0.9428	0.3521	206106	13.9256	-0.3429
Gaussian SVR	0.3223	0.8986	181637	1.0628	-0.0234

**Table 22:** Results for R1-500

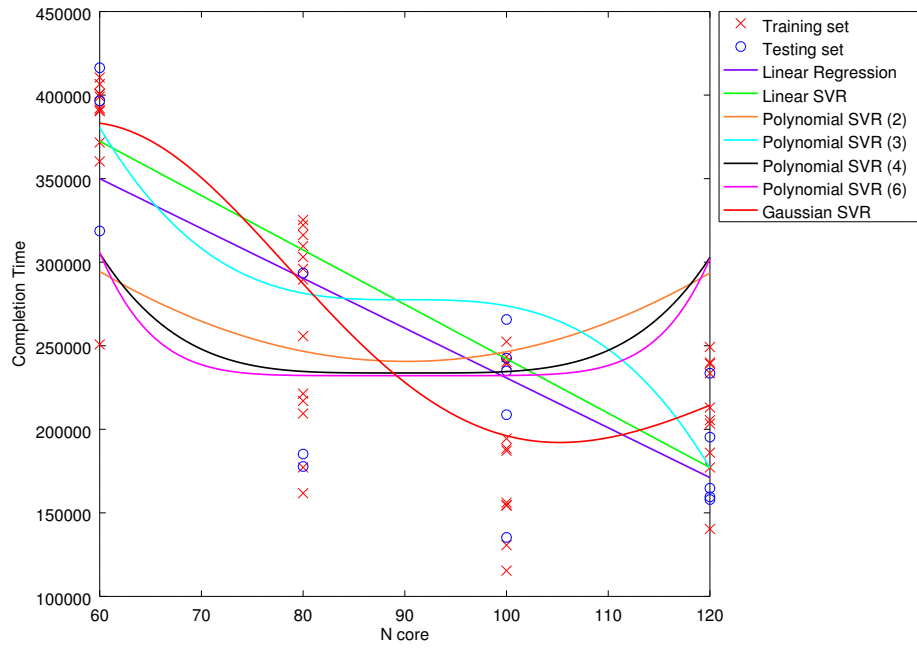


**Figure 22:** Completion time vs ncores for query R1 with datasize 500

### 2.1.3 Query R1 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.6014	0.5593	300870	1.0236	0.0563
Linear SVR	0.6547	0.5657	302818	1.1093	0.2441
Polynomial SVR (2)	0.9570	0.0585	333009	3.1518	0.3754
Polynomial SVR (3)	0.6613	0.5999	305890	2.0590	0.3179
Polynomial SVR (4)	0.9628	0.0628	331953	1.9881	0.3637
Polynomial SVR (6)	0.9559	0.0677	331616	1.9227	0.3491
Gaussian SVR	0.6228	0.5829	307418	1.0560	0.1938

**Table 23:** Results for R1-750

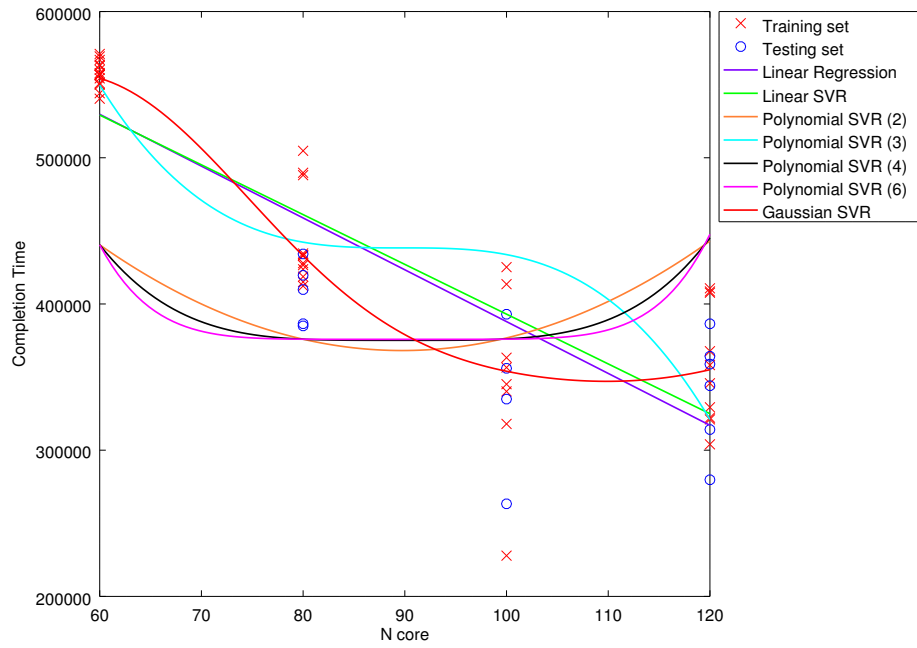


**Figure 23:** Completion time vs ncores for query R1 with datasize 750

### 2.1.4 Query R1 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.6226	-0.4972	473125	1.1210	0.2951
Linear SVR	0.6037	0.3347	471327	1.1101	0.2858
Polynomial SVR (2)	0.8422	0.1330	488214	2.6598	0.4419
Polynomial SVR (3)	0.7066	0.1527	476425	3.5287	0.3181
Polynomial SVR (4)	0.8534	0.1296	488988	2.4699	0.4493
Polynomial SVR (6)	0.8670	0.1289	489939	2.3029	0.4593
Gaussian SVR	0.4298	0.4559	454613	1.3229	0.2022

**Table 24:** Results for R1-1000



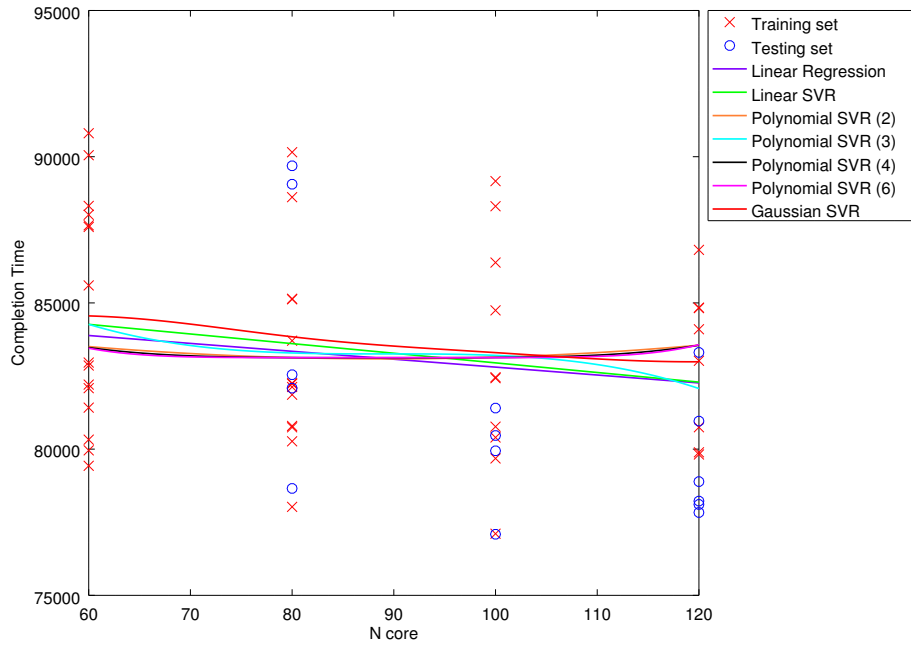
**Figure 24:** Completion time vs ncores for query R1 with datasize 1000

## 2.2 Query R2

### 2.2.1 Query R2 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.1128	-0.1570	86628	14.4978	0.5476
Linear SVR	1.0683	0.3052	86458	9.8909	0.4767
Polynomial SVR (2)	1.2109	0.1481	86848	59.8285	0.5888
Polynomial SVR (3)	1.0758	0.1577	86446	16.1503	0.4411
Polynomial SVR (4)	1.2102	0.1394	86844	66.2597	0.5879
Polynomial SVR (6)	1.2118	0.1377	86850	68.0304	0.5896
Gaussian SVR	1.1490	0.3419	86752	19.4207	0.6036

**Table 25:** Results for R2-250

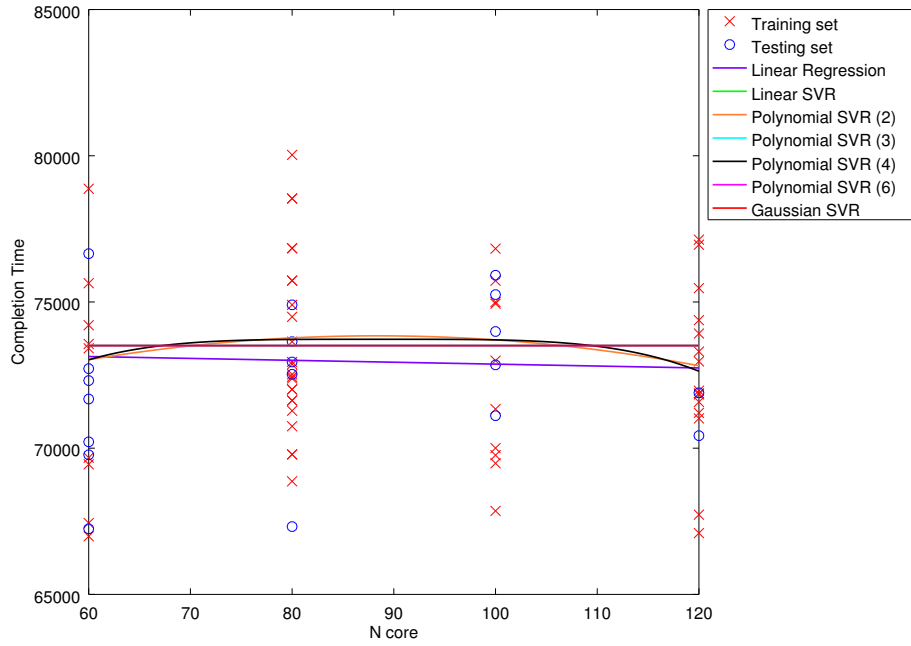


**Figure 25:** Completion time vs ncores for query R2 with datasize 250

### 2.2.2 Query R2 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.8543	-0.0920	74969	46.7605	0.2171
Linear SVR	0.9098	0.0000	75155	3.9493	0.3992
Polynomial SVR (2)	0.8651	0.0946	74972	15.1417	0.3568
Polynomial SVR (3)	0.9098	0.0000	75155	3.9493	0.3992
Polynomial SVR (4)	0.8587	0.0997	74944	14.3128	0.3458
Polynomial SVR (6)	0.9098	0.0000	75155	3.9493	0.3992
Gaussian SVR	0.9098	0.0000	75155	3.9493	0.3992

**Table 26:** Results for R2-500

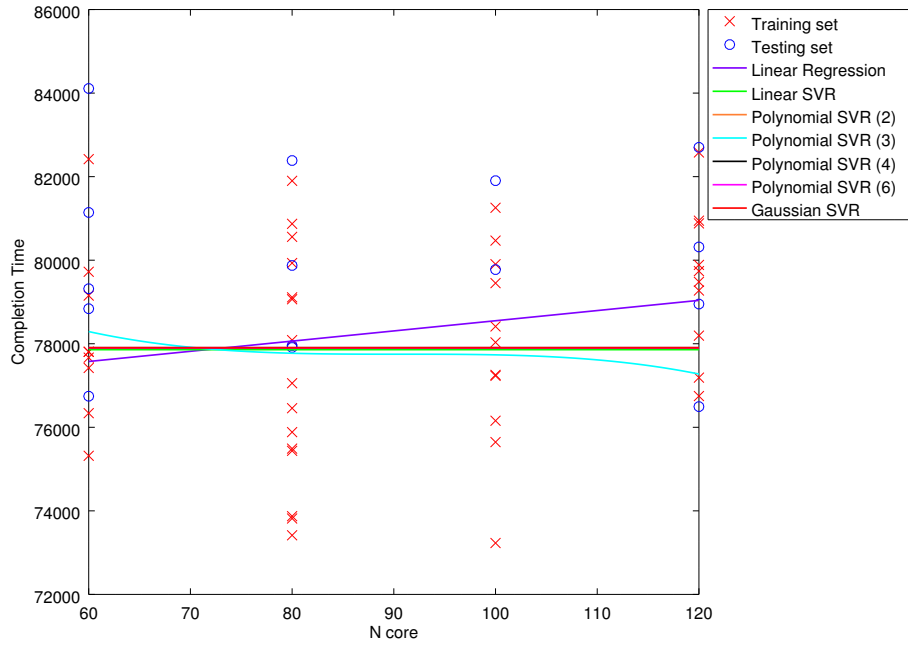


**Figure 26:** Completion time vs ncores for query R2 with datasize 500

### 2.2.3 Query R2 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.1529	-0.8099	80556	7.5370	-0.7282
Linear SVR	1.1811	-0.0000	80690	5.0940	-0.8127
Polynomial SVR (2)	1.1685	0.0000	80656	5.5732	-0.7944
Polynomial SVR (3)	1.1980	0.0043	80720	27.0542	-0.8330
Polynomial SVR (4)	1.1685	0.0000	80656	5.5732	-0.7944
Polynomial SVR (6)	1.1685	0.0000	80656	5.5732	-0.7944
Gaussian SVR	1.1685	0.0000	80656	5.5732	-0.7944

**Table 27:** Results for R2-750

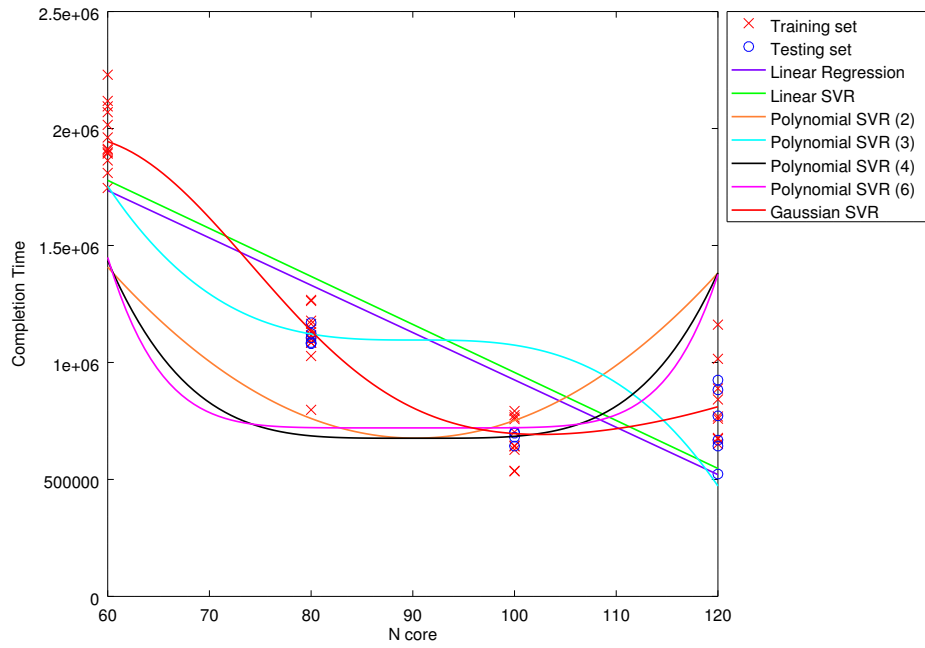


**Figure 27:** Completion time vs ncores for query R2 with datasize 750

### 2.2.4 Query R2 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.4726	-0.3327	1347093	0.8336	0.1087
Linear SVR	0.4949	0.5506	1359787	0.9295	0.1621
Polynomial SVR (2)	0.9099	0.1794	1517625	1.3713	0.3120
Polynomial SVR (3)	0.5414	0.2285	1342325	13.9279	0.0046
Polynomial SVR (4)	0.9474	0.1850	1528852	1.3313	0.2292
Polynomial SVR (6)	0.9214	0.1863	1519870	1.3624	0.2656
Gaussian SVR	0.2025	0.7958	1194571	1.1252	0.0811

**Table 28:** Results for R2-1000



**Figure 28:** Completion time vs ncores for query R2 with datasize 1000

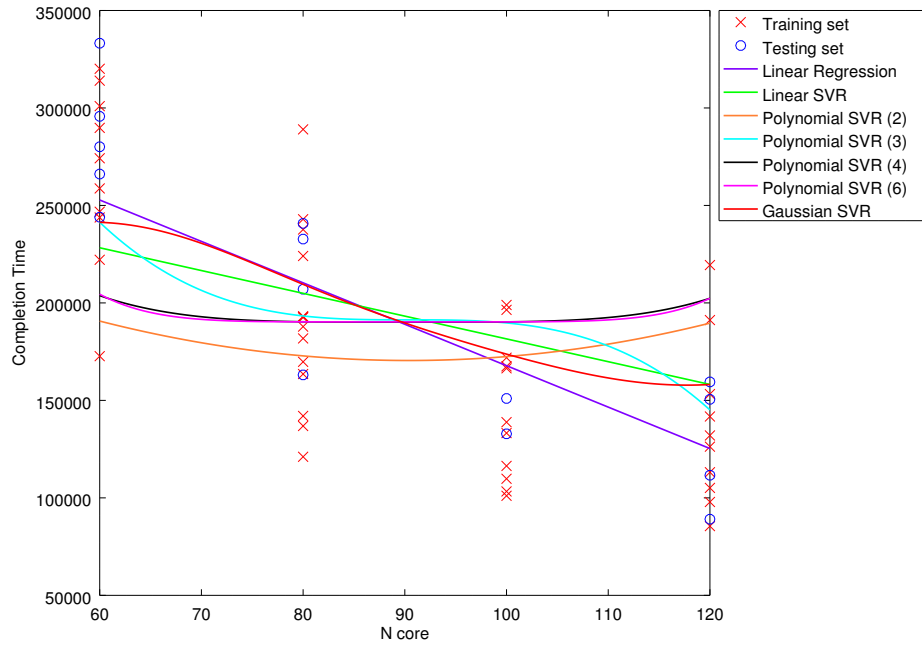


## 2.3 Query R3

### 2.3.1 Query R3 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.5664	0.7343	218173	0.8842	-0.2177
Linear SVR	0.7419	0.8058	227474	1.9607	-0.1042
Polynomial SVR (2)	1.1232	0.0518	251296	25.0240	-0.3209
Polynomial SVR (3)	0.6689	0.7611	224745	6.2864	-0.1218
Polynomial SVR (4)	1.0818	0.0654	250379	10.5097	-0.0906
Polynomial SVR (6)	1.0776	0.0830	250143	10.5079	-0.0870
Gaussian SVR	0.6532	0.8353	221799	1.1592	-0.0336

**Table 29:** Results for R3-250

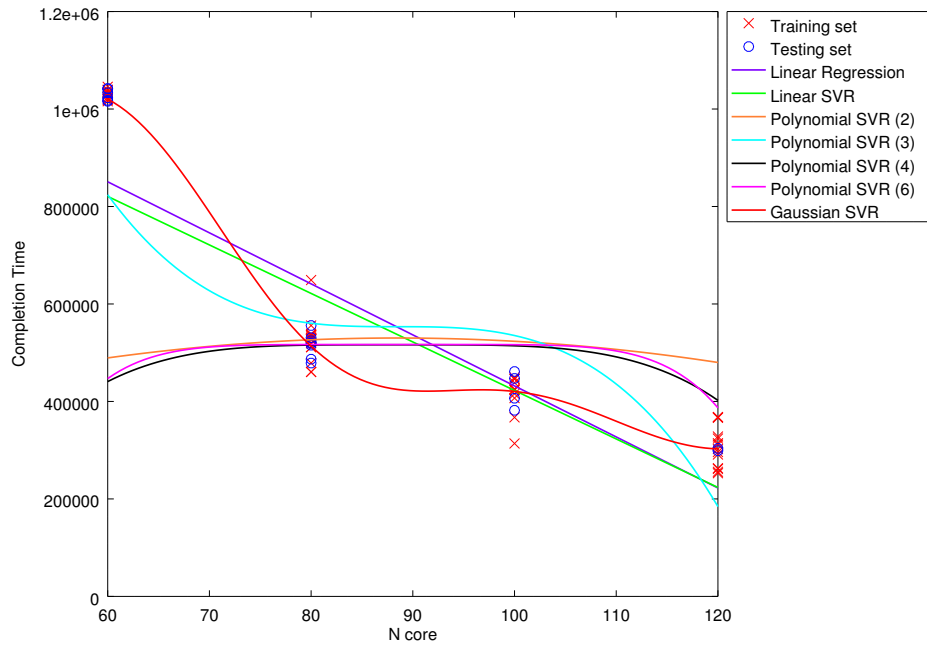


**Figure 29:** Completion time vs ncores for query R3 with datasize 250

### 2.3.2 Query R3 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.5105	0.7694	670050	0.7943	-0.0100
Linear SVR	0.5363	0.7945	671087	0.9138	-0.1126
Polynomial SVR (2)	1.2030	0.2948	759712	3.7549	-0.4740
Polynomial SVR (3)	0.5238	0.8230	665690	3.8134	-0.1315
Polynomial SVR (4)	1.2895	0.2034	764200	2.2969	-0.5865
Polynomial SVR (6)	1.2753	0.1148	761187	2.3991	-0.5818
Gaussian SVR	0.0857	0.9939	569642	0.2404	-0.0176

**Table 30:** Results for R3-500

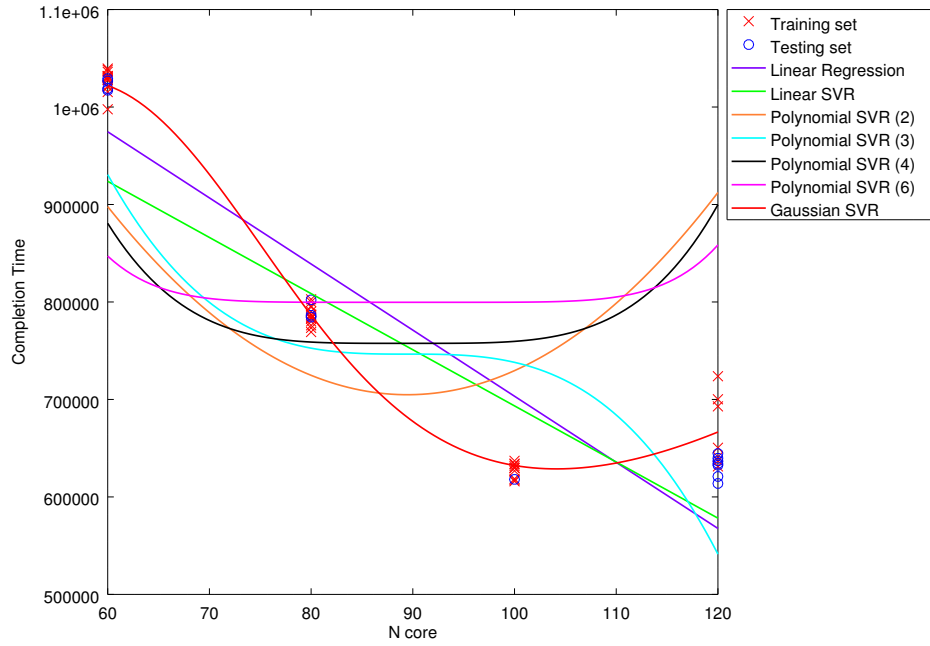


**Figure 30:** Completion time vs ncores for query R3 with datasize 500

### 2.3.3 Query R3 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.3758	0.8659	834166	0.4393	-0.1866
Linear SVR	0.4126	0.9086	834817	0.4707	-0.2649
Polynomial SVR (2)	1.2743	0.0000	959740	1.6523	0.5658
Polynomial SVR (3)	0.5313	0.8931	857338	0.9029	-0.4105
Polynomial SVR (4)	1.2419	0.0035	953661	2.3823	0.5559
Polynomial SVR (6)	1.1462	0.0137	941681	2.4817	0.4486
Gaussian SVR	0.1570	0.9928	794470	0.2633	0.0987

**Table 31:** Results for R3-750

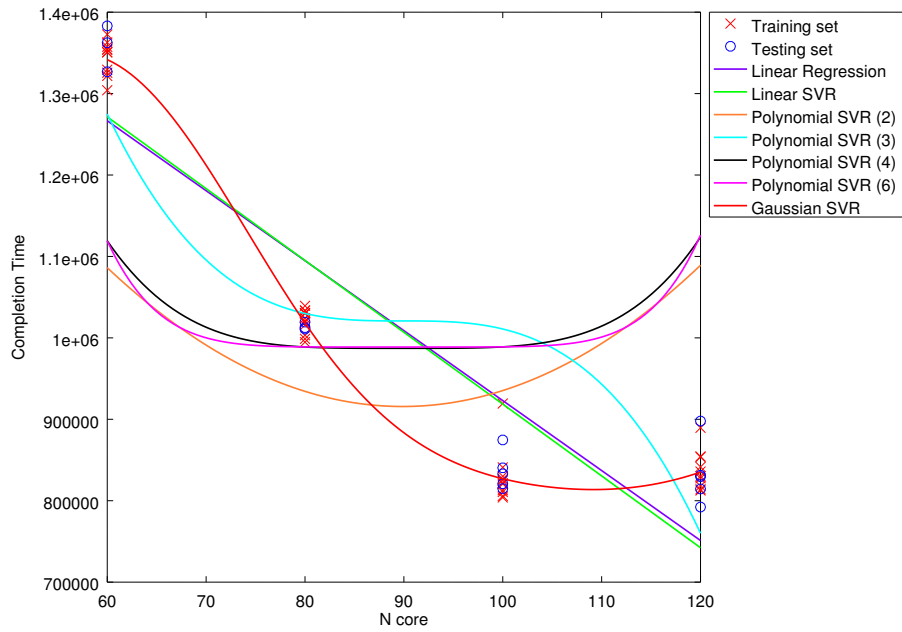


**Figure 31:** Completion time vs ncores for query R3 with datasize 750

### 2.3.4 Query R3 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.4194	0.8055	1094689	0.6156	-0.0390
Linear SVR	0.4203	0.8082	1095259	0.6260	-0.0178
Polynomial SVR (2)	0.9347	0.0904	1186674	2.2891	0.2124
Polynomial SVR (3)	0.5406	0.6895	1105677	61.6506	0.0900
Polynomial SVR (4)	1.0026	0.0854	1197870	3.6921	0.4202
Polynomial SVR (6)	1.0073	0.0796	1198563	3.6827	0.4237
Gaussian SVR	0.1259	0.9834	1029516	0.1996	-0.0218

**Table 32:** Results for R3-1000



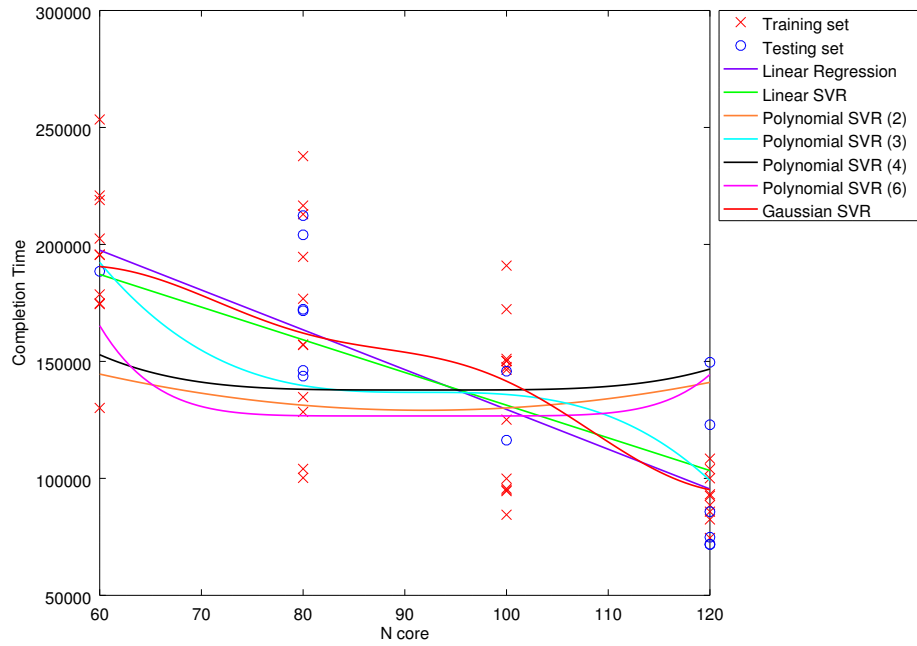
**Figure 32:** Completion time vs ncores for query R3 with datasize 1000

## 2.4 Query R4

### 2.4.1 Query R4 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.5465	0.6549	165901	0.8526	-0.1000
Linear SVR	0.5680	0.6694	167035	1.0912	-0.0712
Polynomial SVR (2)	0.9898	0.2418	184689	12.6648	-0.0528
Polynomial SVR (3)	0.6954	0.5387	170652	4.5525	-0.2458
Polynomial SVR (4)	0.9815	0.1822	182938	9.2999	0.0814
Polynomial SVR (6)	1.0310	0.1063	185998	17.8055	-0.0432
Gaussian SVR	0.5537	0.6586	165610	1.9384	-0.0821

**Table 33:** Results for R4-250

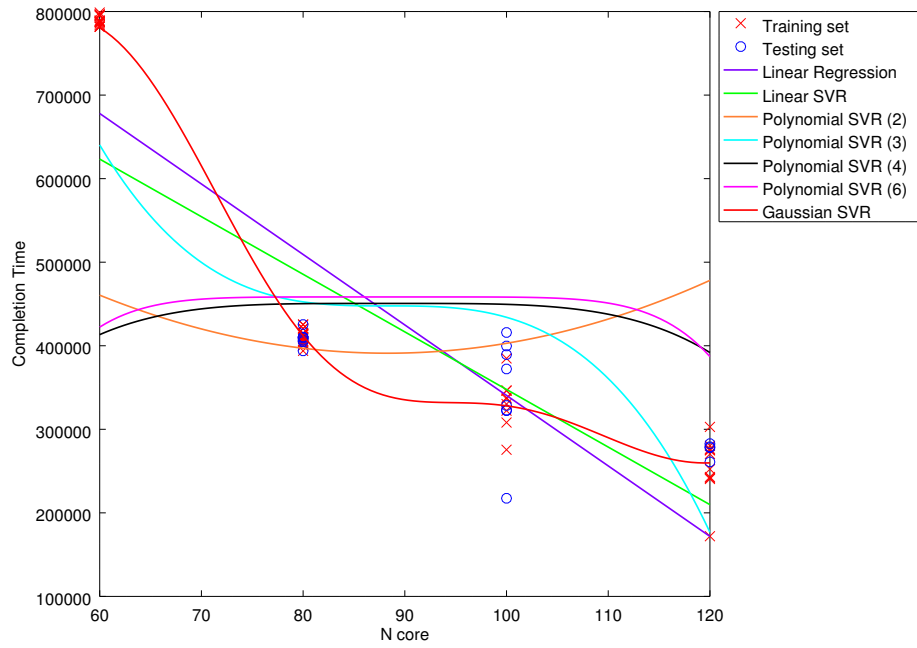


**Figure 33:** Completion time vs ncores for query R4 with datasize 250

### 2.4.2 Query R4 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.4870	-0.9682	519719	0.8143	0.1174
Linear SVR	0.3741	0.6131	501668	0.8938	0.0839
Polynomial SVR (2)	0.5943	0.4650	511952	1.9030	0.3440
Polynomial SVR (3)	0.4785	0.4615	513181	8.3968	0.1791
Polynomial SVR (4)	0.5385	0.4285	522766	6.1419	0.4602
Polynomial SVR (6)	0.5614	0.4212	528365	3.9017	0.4911
Gaussian SVR	0.2286	0.6072	465503	0.2974	-0.0529

**Table 34:** Results for R4-500

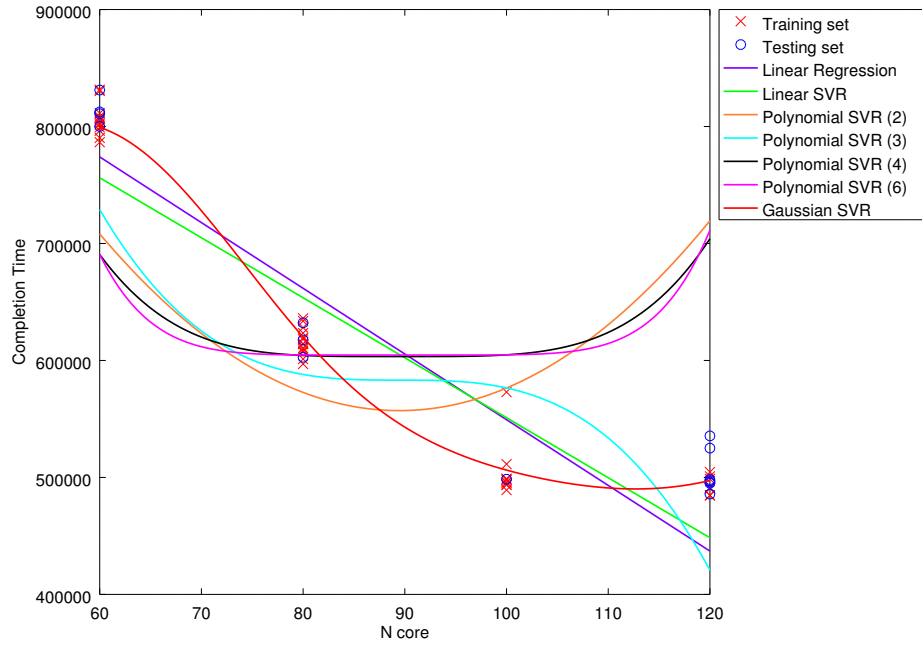


**Figure 34:** Completion time vs ncores for query R4 with datasize 500

### 2.4.3 Query R4 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.4796	0.7842	665860	0.4782	-0.2843
Linear SVR	0.4299	0.8858	660845	0.4889	-0.2422
Polynomial SVR (2)	1.2544	0.0006	751087	1.5979	0.5369
Polynomial SVR (3)	0.6072	0.8817	681405	0.8451	-0.4905
Polynomial SVR (4)	1.2062	0.0009	744379	3.9300	0.5079
Polynomial SVR (6)	1.2406	0.0079	747721	3.9595	0.5350
Gaussian SVR	0.1315	0.9867	620515	0.2601	-0.0488

**Table 35:** Results for R4-750

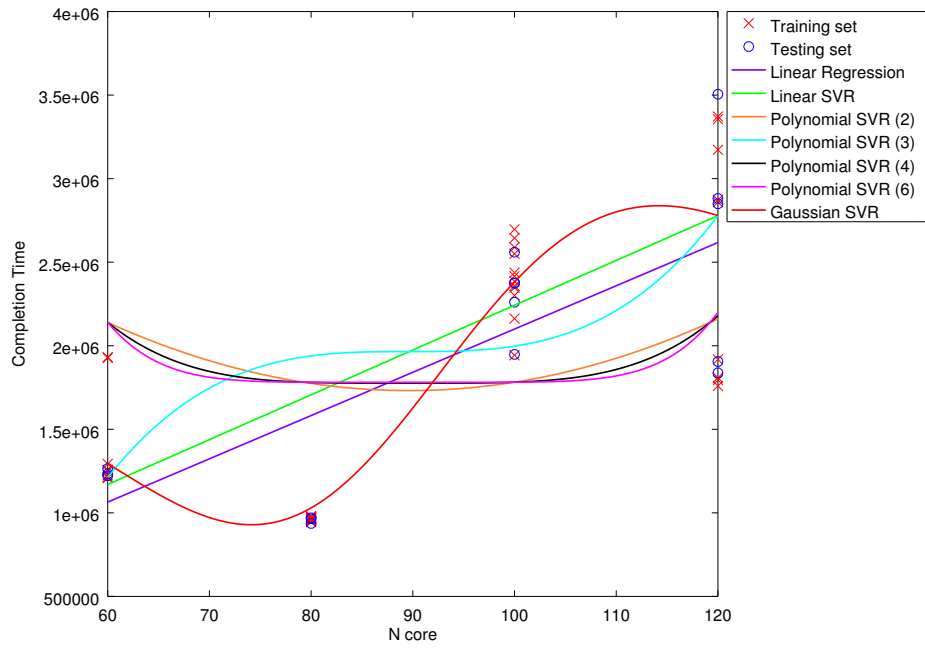


**Figure 35:** Completion time vs ncores for query R4 with datasize 750

#### 2.4.4 Query R4 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.5953	0.6065	2256524	1.0838	-0.0301
Linear SVR	0.6276	0.6095	2210275	1.4608	0.2046
Polynomial SVR (2)	0.9265	0.0485	2524263	7.2145	0.0283
Polynomial SVR (3)	0.7427	0.4249	2292008	2.5018	0.1736
Polynomial SVR (4)	0.9240	0.0540	2524220	7.5100	0.0366
Polynomial SVR (6)	0.9199	0.0628	2523162	7.5533	0.0449
Gaussian SVR	0.4845	0.7610	2071198	0.2998	0.1305

**Table 36:** Results for R4-1000



**Figure 36:** Completion time vs ncores for query R4 with datasize 1000

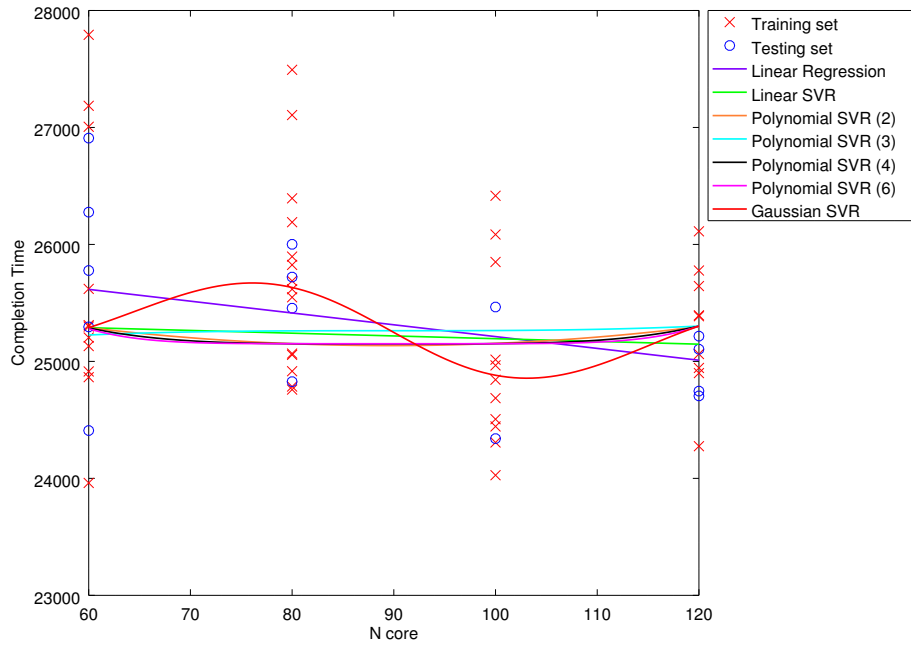


## 2.5 Query R5

### 2.5.1 Query R5 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.7328	0.1952	25784	7.4799	0.1355
Linear SVR	0.7999	0.2432	25846	11.8519	-0.1475
Polynomial SVR (2)	0.8293	0.0011	25888	15.1312	-0.1350
Polynomial SVR (3)	0.8399	0.2039	25888	12.9326	-0.1059
Polynomial SVR (4)	0.8305	0.0004	25890	16.2640	-0.1345
Polynomial SVR (6)	0.8322	0.0000	25892	14.7004	-0.1373
Gaussian SVR	0.7986	0.0547	25849	16.2030	-0.0241

**Table 37:** Results for R5-250

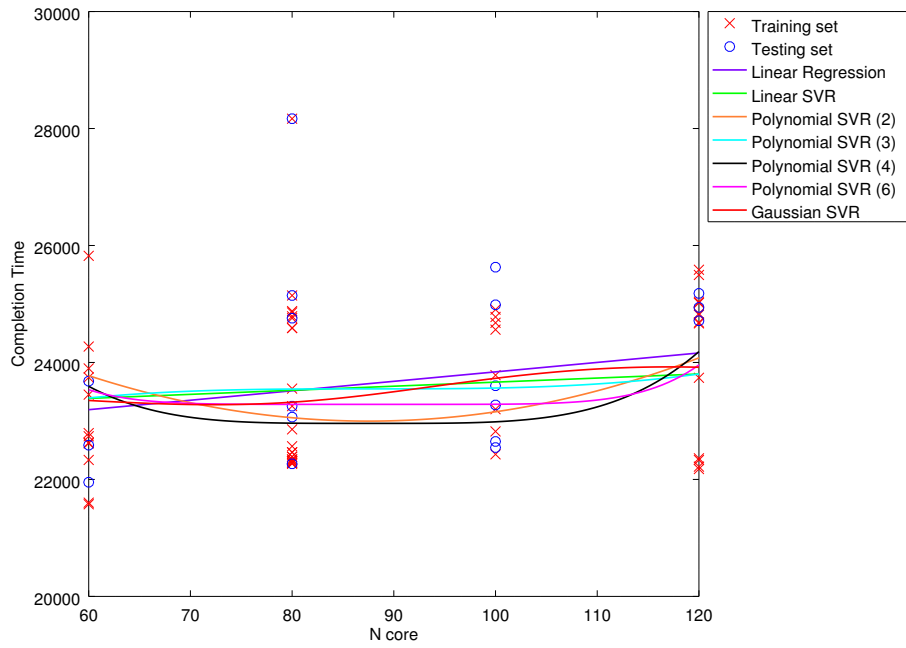


**Figure 37:** Completion time vs ncores for query R5 with datasize 250

### 2.5.2 Query R5 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.0764	0.0163	24770	5.8800	-0.2806
Linear SVR	1.1037	0.0931	24821	18.8609	-0.3077
Polynomial SVR (2)	1.2157	0.0001	24837	3.2243	-0.4619
Polynomial SVR (3)	1.1038	0.1516	24815	11.7193	-0.3258
Polynomial SVR (4)	1.2335	0.0054	24838	4.9444	-0.5344
Polynomial SVR (6)	1.1551	0.0177	24797	4.3414	-0.4196
Gaussian SVR	1.1236	0.0213	24807	6.4001	-0.3311

**Table 38:** Results for R5-500

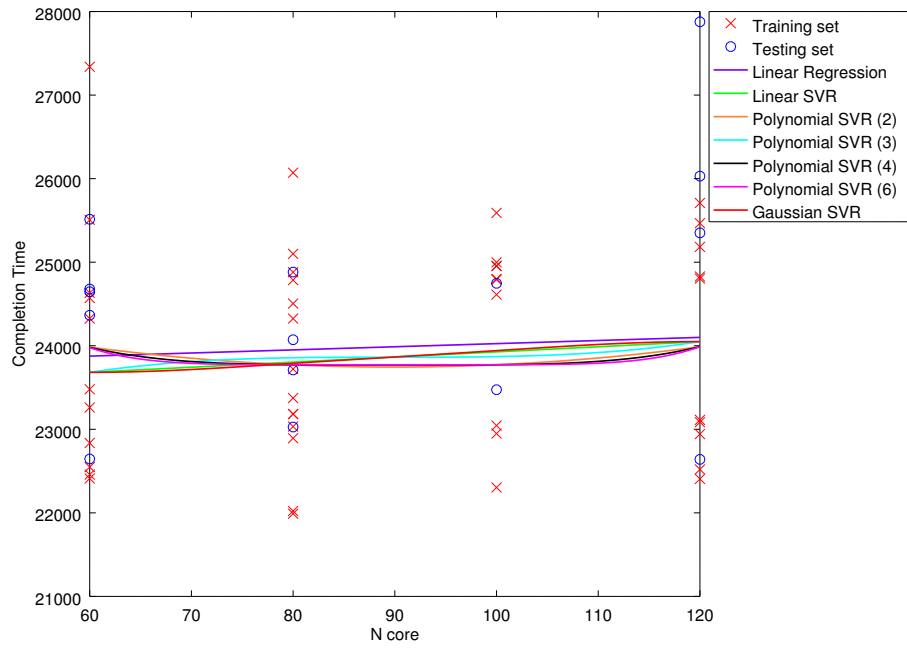


**Figure 38:** Completion time vs ncores for query R5 with datasize 500

### 2.5.3 Query R5 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.0876	-0.1187	25108	14.6027	-0.4073
Linear SVR	1.1221	0.1018	25156	12.5852	-0.5129
Polynomial SVR (2)	1.1094	0.1066	25103	662.9814	-0.4704
Polynomial SVR (3)	1.1223	0.0909	25156	12.2314	-0.5079
Polynomial SVR (4)	1.1096	0.1091	25104	615.7160	-0.4710
Polynomial SVR (6)	1.1098	0.1119	25105	599.4620	-0.4719
Gaussian SVR	1.1222	0.1033	25156	12.9801	-0.5144

**Table 39:** Results for R5-750

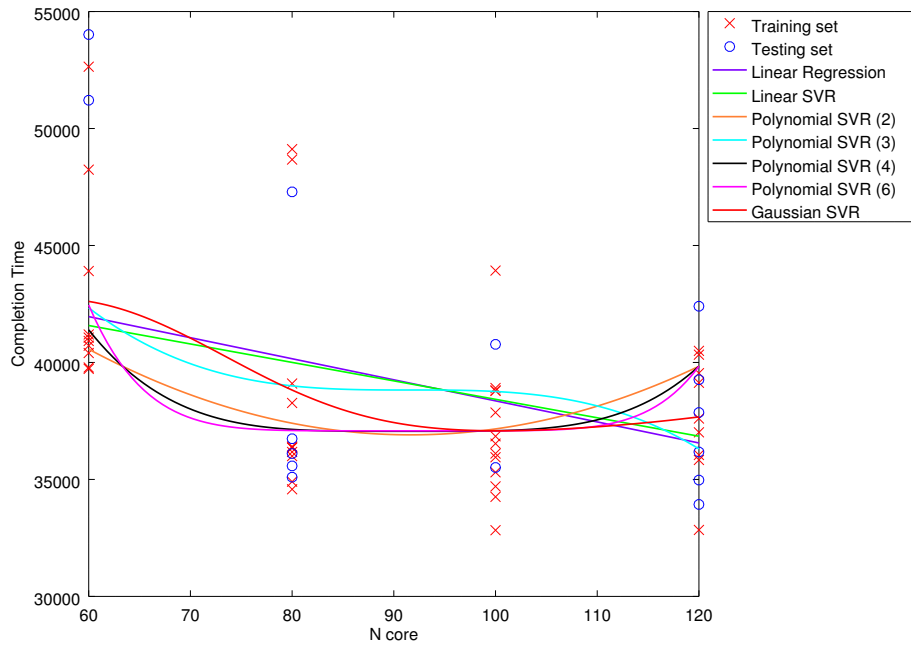


**Figure 39:** Completion time vs ncores for query R5 with datasize 750

### 2.5.4 Query R5 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.1760	0.2105	43437	3.4328	-0.3100
Linear SVR	1.1734	0.3227	43479	3.3087	-0.2301
Polynomial SVR (2)	1.2608	0.1464	43434	3.6967	-0.2246
Polynomial SVR (3)	1.1189	0.4733	43178	14.3300	-0.3185
Polynomial SVR (4)	1.2150	0.2306	43271	3.1325	-0.2220
Polynomial SVR (6)	1.1549	0.3291	43120	2.8657	-0.1946
Gaussian SVR	1.0927	0.6095	43105	5.8926	-0.2533

**Table 40:** Results for R5-1000



**Figure 40:** Completion time vs ncores for query R5 with datasize 1000

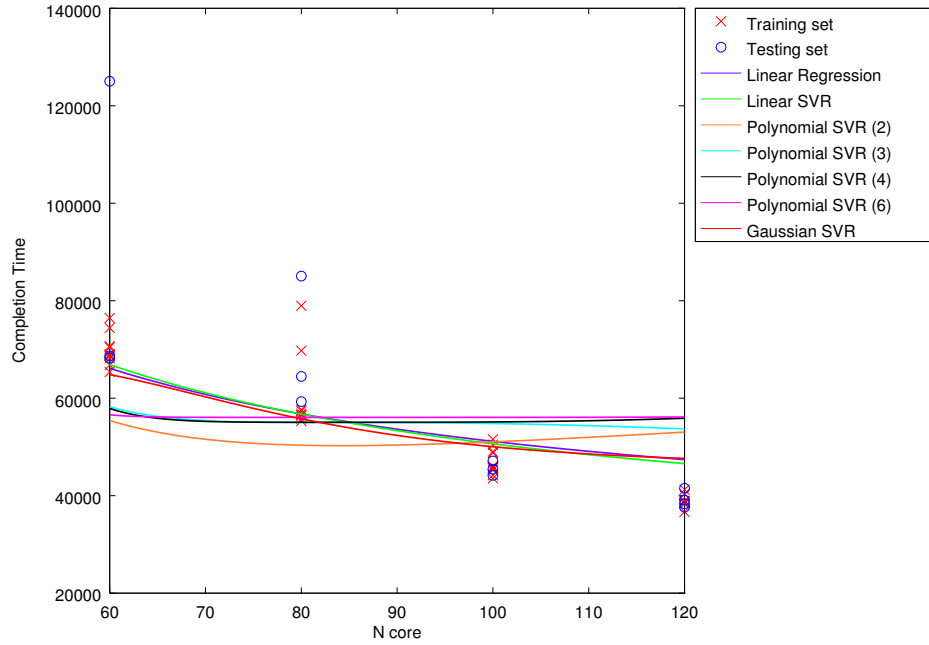
### 3 Fixed Datasize, $ncores^{-1}$ , All the Features

#### 3.1 Query R1

##### 3.1.1 Query R1 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.3569	0.9437	57917	0.1222	-0.1020
Linear SVR	0.3897	0.9727	58167	0.1350	-0.1083
Polynomial SVR (2)	0.7267	0.7759	66118	61.3335	0.1183
Polynomial SVR (3)	3.6861	0.7898	76246	1.3885	1.1331
Polynomial SVR (4)	2.1868	0.2291	74023	2.8312	-0.6560
Polynomial SVR (6)	3.1348	0.3153	80690	8.4469	-1.0235
Gaussian SVR	1.2154	0.4402	63043	2.3972	-0.3644

**Table 41:** Results for R1-250 with non-linear  $1/ncores$  feature

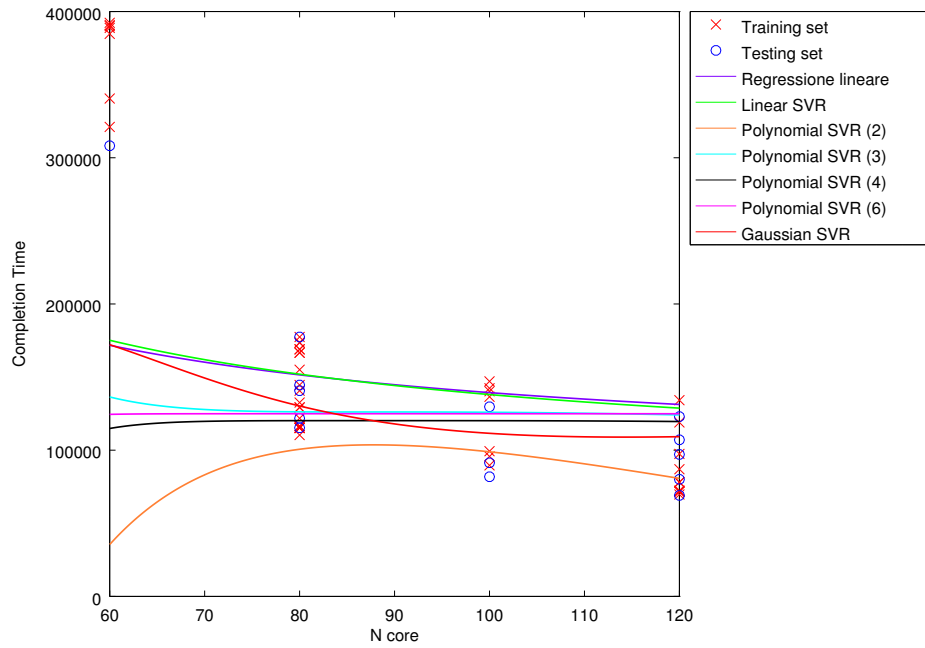


**Figure 41:** Completion time vs ncores for query R1 with datasize 250

### 3.1.2 Query R1 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0506	0.9946	149372	1.1926	-0.0195
Linear SVR	0.0713	0.9903	151285	0.3085	-0.0185
Polynomial SVR (2)	0.4531	0.6440	168894	0.9474	-0.0613
Polynomial SVR (3)	0.2676	0.9424	159376	0.3461	-0.0354
Polynomial SVR (4)	0.5083	0.6031	169800	1.1381	-0.0573
Polynomial SVR (6)	0.5413	0.5082	172592	1.7399	-0.0119
Gaussian SVR	0.3465	0.8506	162296	0.9260	-0.0197

**Table 42:** Results for R1-500 with non-linear 1/ncore feature

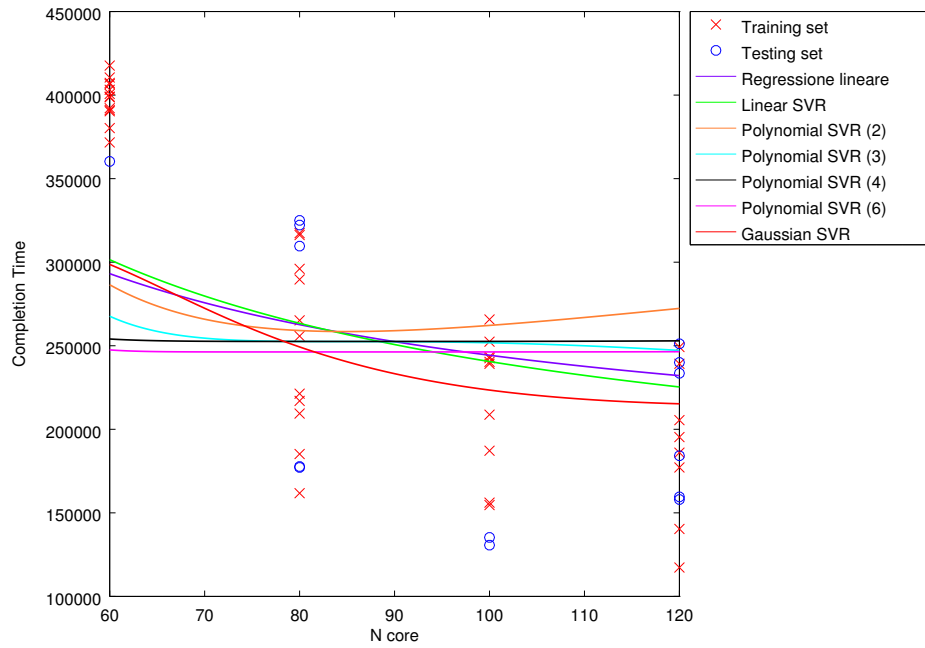


**Figure 42:** Completion time vs ncores for query R1 with datasize 500

### 3.1.3 Query R1 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.1375	0.9744	266690	0.1768	0.0079
Linear SVR	0.1334	0.9761	267032	0.1951	0.0088
Polynomial SVR (2)	0.7191	0.3759	313187	6.5148	0.2147
Polynomial SVR (3)	0.3711	0.8732	284595	1.1409	0.0472
Polynomial SVR (4)	0.7398	0.3292	312671	15.8989	0.1402
Polynomial SVR (6)	0.6509	0.4372	303665	3.8494	-0.0005
Gaussian SVR	0.2336	0.9523	272389	0.2649	0.1202

**Table 43:** Results for R1-750 with non-linear 1/ncore feature

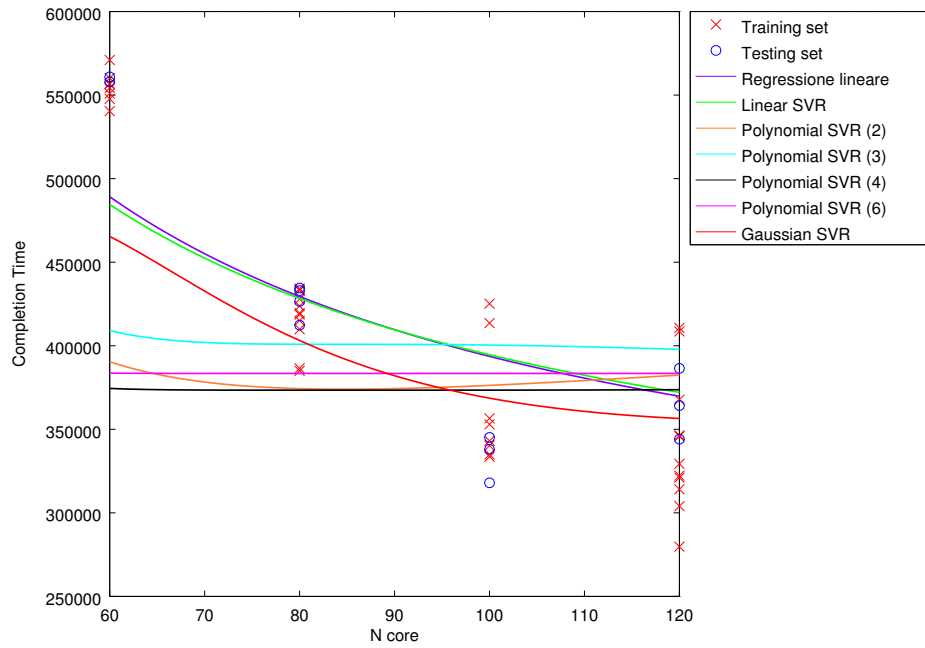


**Figure 43:** Completion time vs ncores for query R1 with datasize 750

### 3.1.4 Query R1 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.1306	0.9784	429351	2.8409	0.0007
Linear SVR	0.1450	0.9810	429604	0.5520	0.0338
Polynomial SVR (2)	0.8082	0.2162	482601	3.1941	0.0858
Polynomial SVR (3)	1.0487	0.6466	470855	0.8020	-0.3499
Polynomial SVR (4)	3.4474	0.0260	563434	1.7449	1.3551
Polynomial SVR (6)	2.3471	0.0011	523457	1.0844	0.8945
Gaussian SVR	0.4470	0.8010	443462	4.8244	0.1893

**Table 44:** Results for R1-1000 with non-linear 1/ncores feature



**Figure 44:** Completion time vs ncores for query R1 with datasize 1000

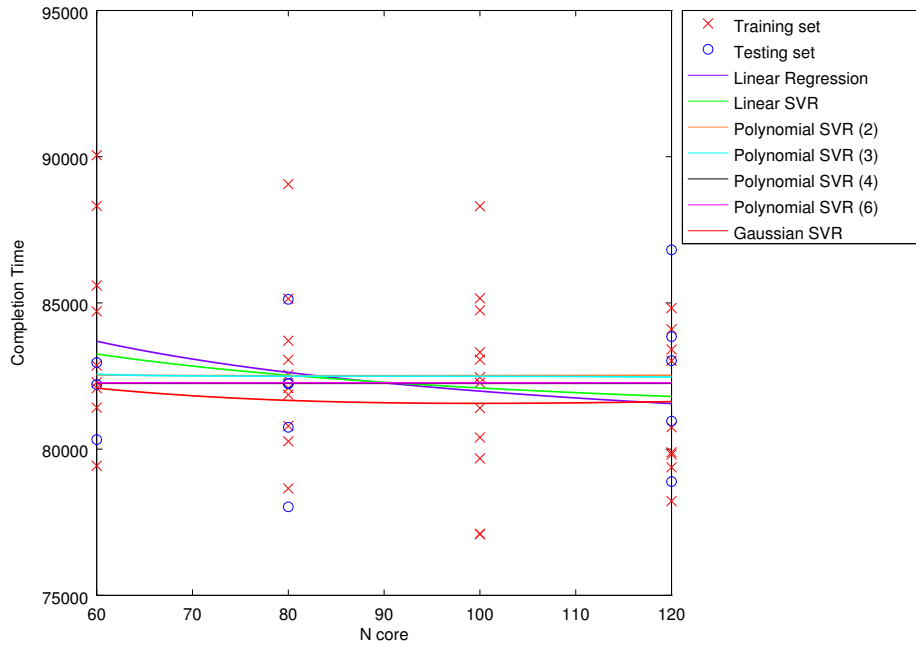


### 3.2 Query R2

#### 3.2.1 Query R2 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.3084	0.8429	83176	0.9116	0.1838
Linear SVR	0.2402	0.9235	83030	0.5897	0.0233
Polynomial SVR (2)	0.8800	0.2967	84417	35.7221	0.1311
Polynomial SVR (3)	0.6423	0.6316	83765	6.7284	0.2887
Polynomial SVR (4)	0.7945	0.0199	84228	21.9735	0.0262
Polynomial SVR (6)	0.7333	0.5682	84141	13.7543	0.0515
Gaussian SVR	0.3433	0.8108	83318	0.5836	0.0294

**Table 45:** Results for R2-250 with non-linear 1/ncore feature

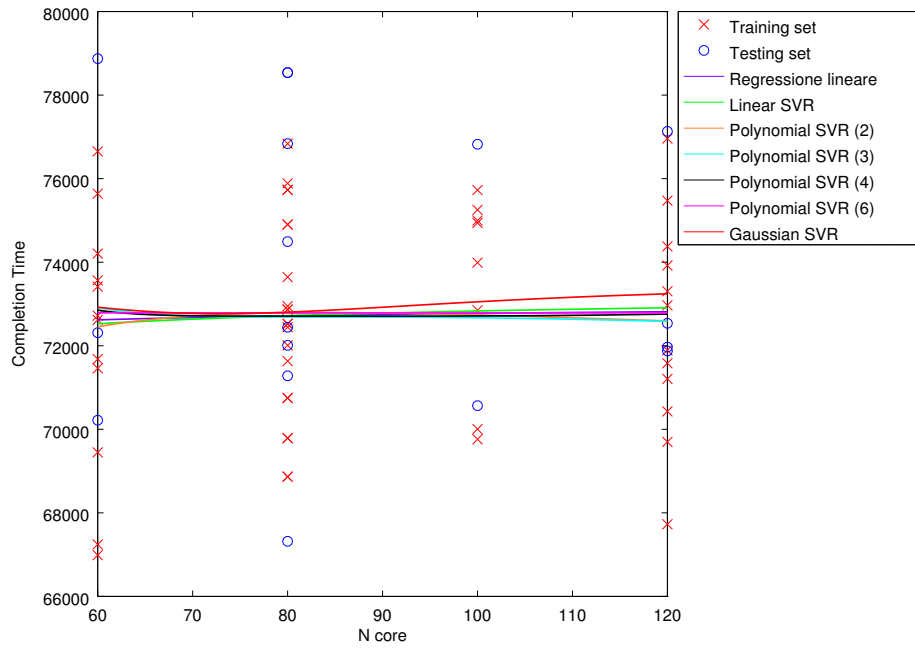


**Figure 45:** Completion time vs ncores for query R2 with datasize 250

### 3.2.2 Query R2 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2504	0.9581	73225	0.5520	-0.0447
Linear SVR	0.2443	0.9617	73192	0.6815	-0.0188
Polynomial SVR (2)	2.2931	0.0395	76764	3.4868	-0.1115
Polynomial SVR (3)	4.3801	0.3401	78078	1.4172	1.0143
Polynomial SVR (4)	3.2640	0.0185	78390	11.5499	-0.2238
Polynomial SVR (6)	3.4982	0.0292	77888	13.3950	0.4314
Gaussian SVR	0.7471	0.7045	74079	3.0922	-0.2571

**Table 46:** Results for R2-500 with non-linear 1/ncores feature

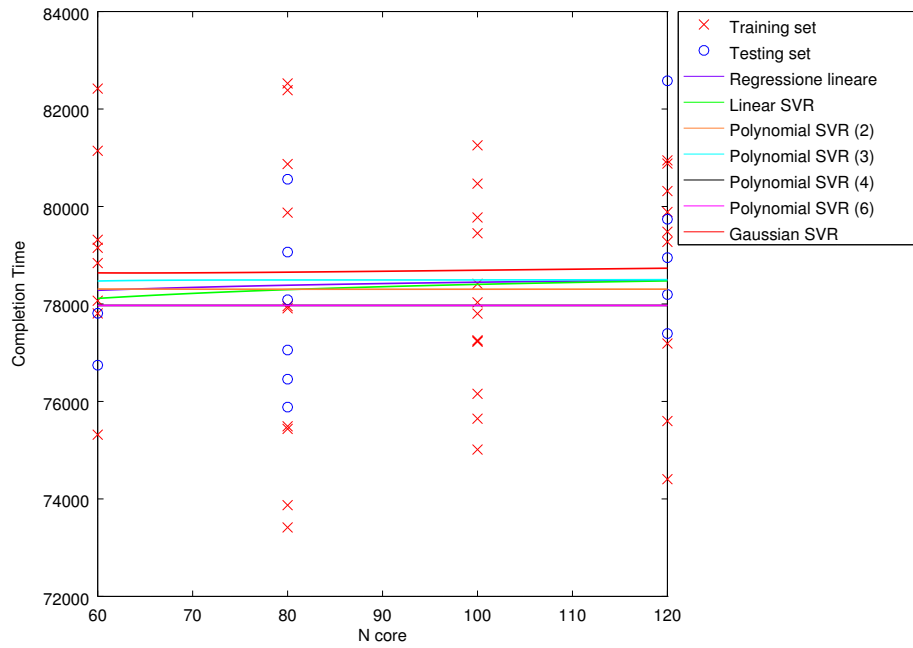


**Figure 46:** Completion time vs ncores for query R2 with datasize 500

### 3.2.3 Query R2 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2224	0.9208	78830	0.9775	0.0385
Linear SVR	0.2328	0.9535	78852	0.9182	-0.0008
Polynomial SVR (2)	0.8134	0.2265	79819	8.6904	-0.0437
Polynomial SVR (3)	0.4734	0.6998	79323	6.8385	0.1398
Polynomial SVR (4)	0.8079	-0.0000	79779	3.1582	-0.1683
Polynomial SVR (6)	0.8079	-0.0000	79779	3.1582	-0.1683
Gaussian SVR	0.4697	0.7362	79193	3.5198	0.1028

**Table 47:** Results for R2-750 with non-linear 1/ncores feature

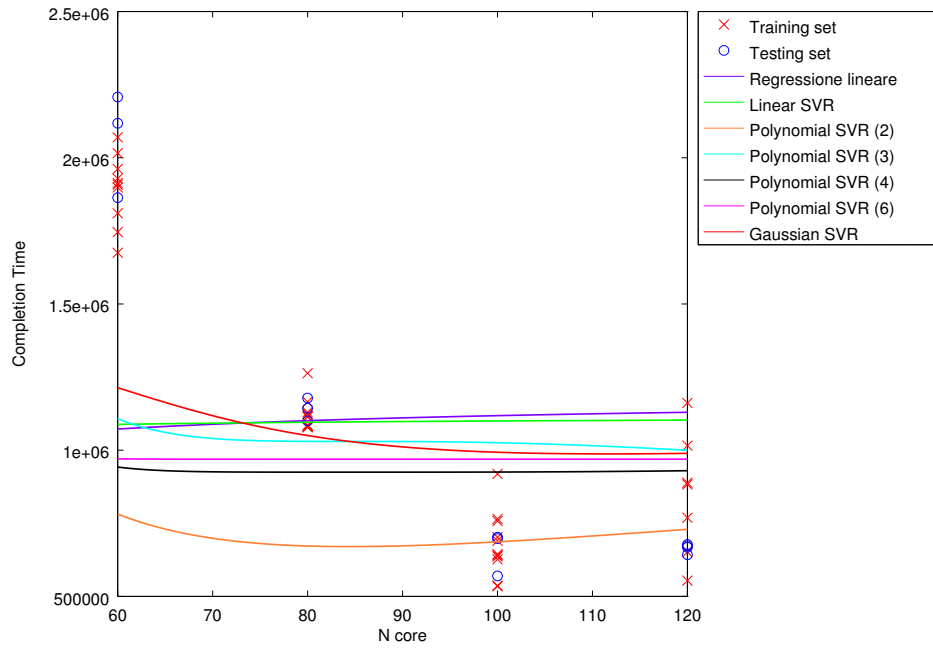


**Figure 47:** Completion time vs ncores for query R2 with datasize 750

### 3.2.4 Query R2 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0462	0.9983	1124528	0.1815	0.0091
Linear SVR	0.0822	0.9949	1140186	0.2180	-0.0168
Polynomial SVR (2)	0.7408	0.5722	1456474	2.1287	0.0114
Polynomial SVR (3)	0.4716	0.9256	1285649	0.7305	0.2304
Polynomial SVR (4)	0.8006	0.5912	1461556	5.8049	0.0416
Polynomial SVR (6)	1.2837	0.0083	1575200	11.0978	-0.2082
Gaussian SVR	0.2323	0.9735	1176463	0.2942	-0.0733

**Table 48:** Results for R2-1000 with non-linear 1/ncores feature



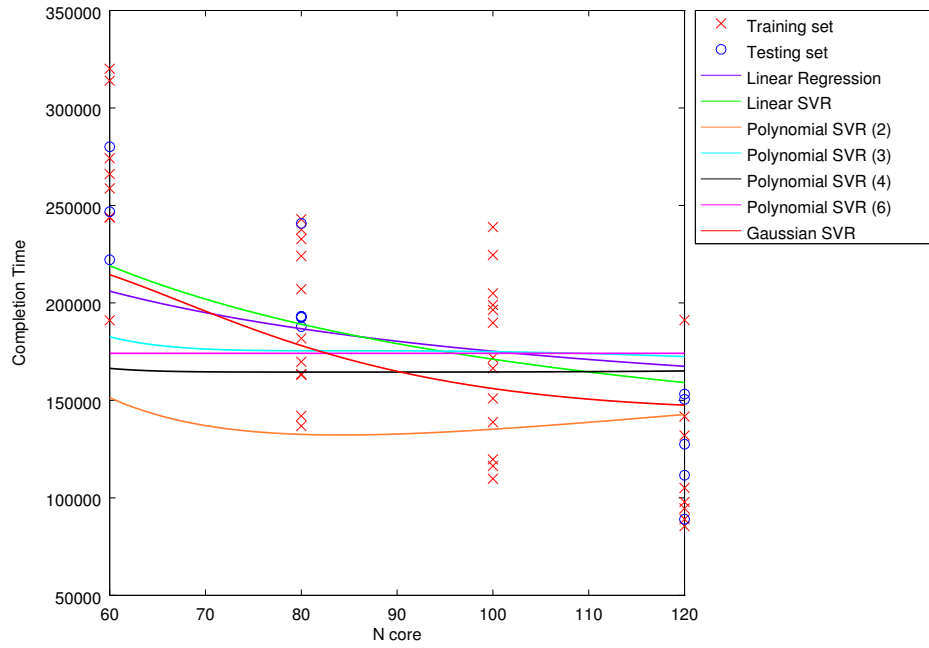
**Figure 48:** Completion time vs ncores for query R2 with datasize 1000

### 3.3 Query R3

#### 3.3.1 Query R3 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.1837	0.9536	188261	0.1659	-0.0515
Linear SVR	0.1351	0.9829	188650	1.4356	-0.0112
Polynomial SVR (2)	0.7236	0.3478	225546	7.5346	-0.2124
Polynomial SVR (3)	0.5047	0.8512	210478	2.4581	-0.1776
Polynomial SVR (4)	0.6953	0.4710	224755	3.3660	-0.1323
Polynomial SVR (6)	0.8553	0.4770	229792	4.8395	-0.1500
Gaussian SVR	0.3731	0.8522	197922	0.5825	0.0201

**Table 49:** Results for R3-250 with non-linear 1/ncore feature

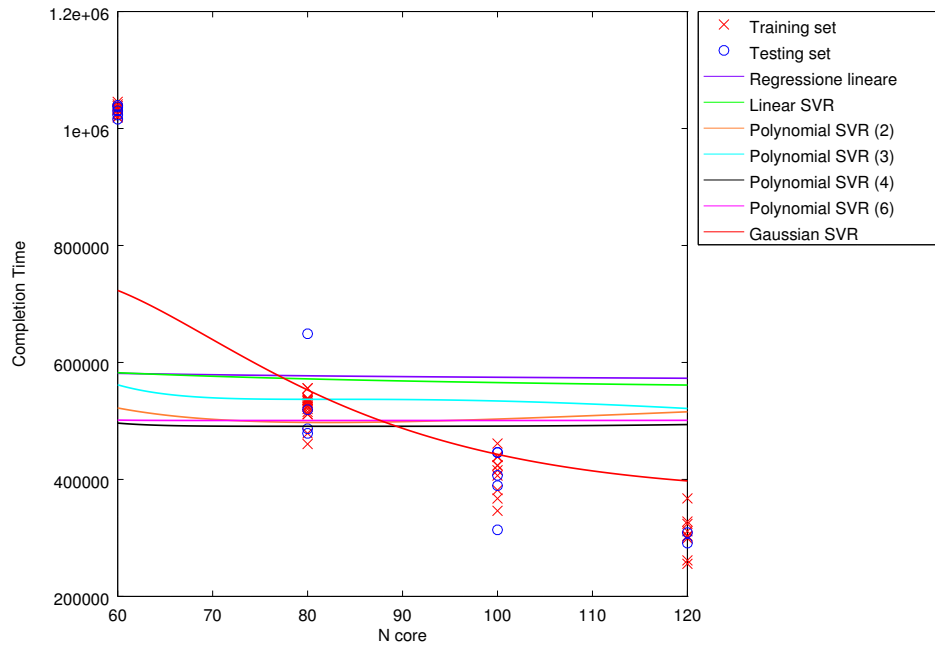


**Figure 49:** Completion time vs ncores for query R3 with datasize 250

### 3.3.2 Query R3 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0492	0.9980	586374	0.0769	-0.0179
Linear SVR	0.0694	0.9979	592263	0.0844	-0.0441
Polynomial SVR (2)	0.4996	0.8693	683733	0.6110	-0.1811
Polynomial SVR (3)	0.2543	0.9661	637551	0.6338	-0.0207
Polynomial SVR (4)	0.4166	0.9154	665945	0.5385	-0.1210
Polynomial SVR (6)	0.5017	0.8823	680924	0.7386	-0.1239
Gaussian SVR	0.1371	0.9846	604365	9.4363	-0.0214

**Table 50:** Results for R3-500 with non-linear 1/ncores feature

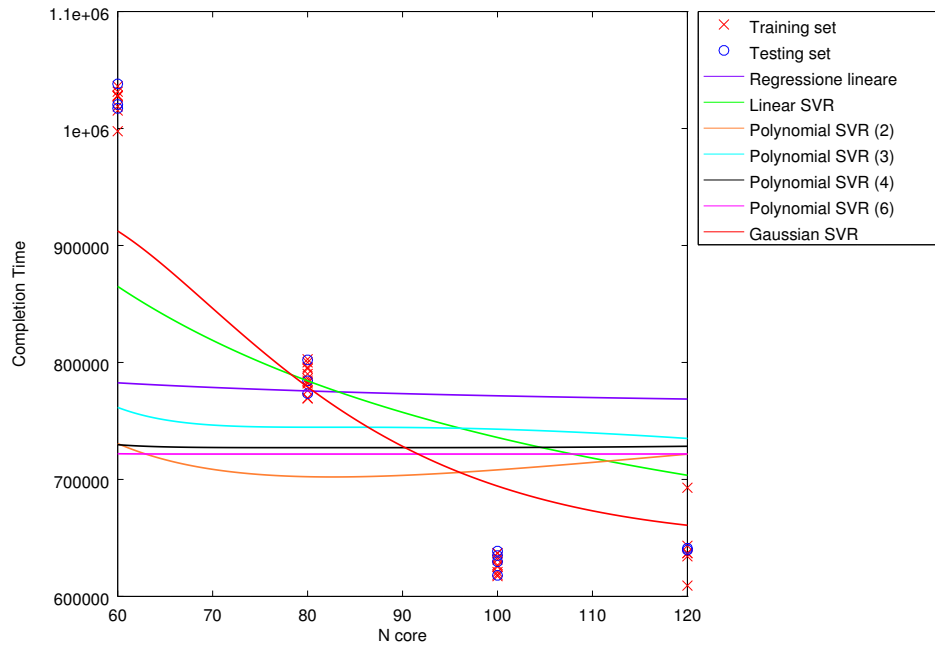


**Figure 50:** Completion time vs ncores for query R3 with datasize 500

### 3.3.3 Query R3 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0188	0.9997	777381	0.0691	-0.0031
Linear SVR	0.0940	0.9929	787385	0.2265	0.0245
Polynomial SVR (2)	0.6773	0.5680	867860	2.0158	-0.0217
Polynomial SVR (3)	0.3555	0.9149	820888	0.9252	0.0371
Polynomial SVR (4)	0.6696	0.6658	871623	2.3705	0.0400
Polynomial SVR (6)	0.6893	0.6707	872687	1.9120	-0.0459
Gaussian SVR	0.2402	0.9602	802960	0.3887	0.1019

**Table 51:** Results for R3-750 with non-linear 1/ncores feature

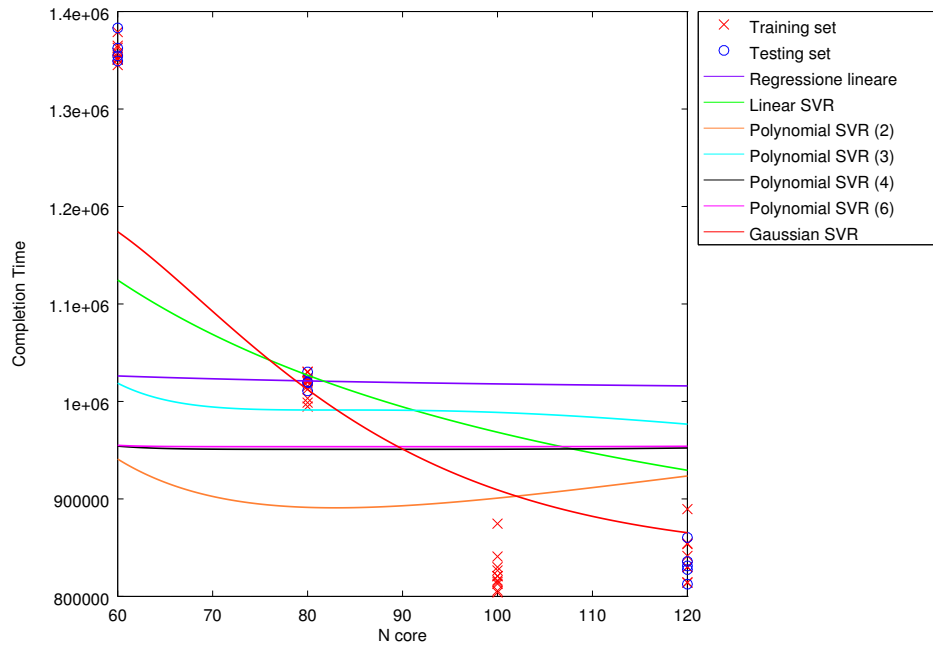


**Figure 51:** Completion time vs ncores for query R3 with datasize 750

### 3.3.4 Query R3 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0982	0.9905	1030253	0.4656	-0.0388
Linear SVR	0.1197	0.9920	1041486	0.4661	-0.0713
Polynomial SVR (2)	0.8322	0.3184	1192377	5.5161	-0.0309
Polynomial SVR (3)	0.3814	0.8902	1076692	0.5328	-0.0773
Polynomial SVR (4)	0.9713	0.0859	1199980	3.3847	-0.1187
Polynomial SVR (6)	0.7545	0.6282	1164586	6.4512	-0.1462
Gaussian SVR	0.3937	0.8968	1085557	1.8102	-0.0157

**Table 52:** Results for R3-1000 with non-linear 1/ncores feature



**Figure 52:** Completion time vs ncores for query R3 with datasize 1000

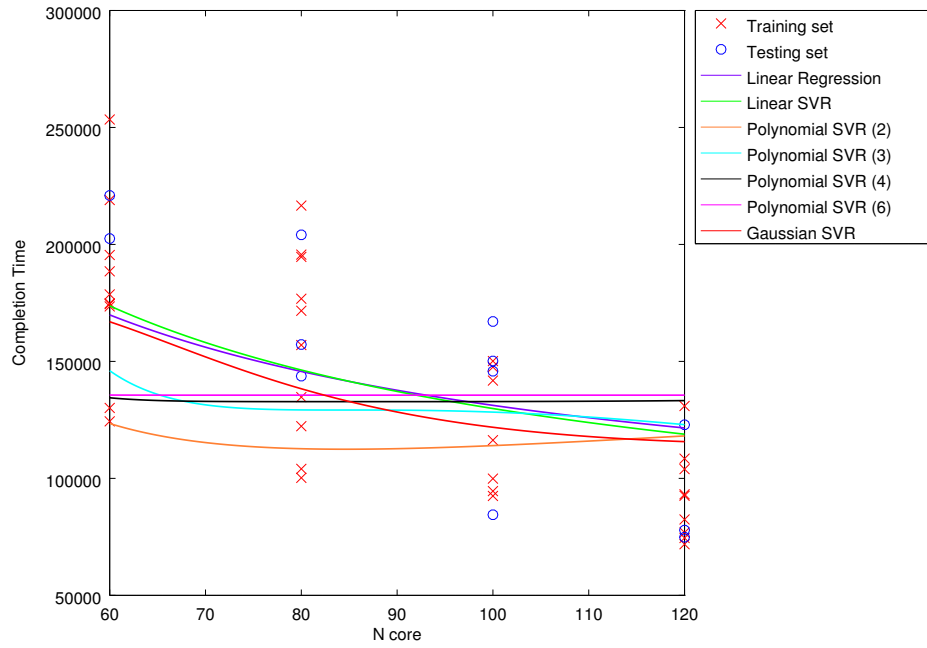


### 3.4 Query R4

#### 3.4.1 Query R4 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0844	0.9923	144609	0.1360	0.0280
Linear SVR	0.1151	0.9898	145968	0.2666	0.0488
Polynomial SVR (2)	0.6884	0.4993	169863	1.7471	0.0032
Polynomial SVR (3)	0.3741	0.8762	155294	0.5718	-0.0005
Polynomial SVR (4)	0.7028	0.4946	167225	6.1995	-0.1481
Polynomial SVR (6)	0.8019	0.4416	173122	6.2652	-0.1848
Gaussian SVR	0.1906	0.9723	148942	2.0154	-0.0117

**Table 53:** Results for R4-250 with non-linear 1/ncore feature

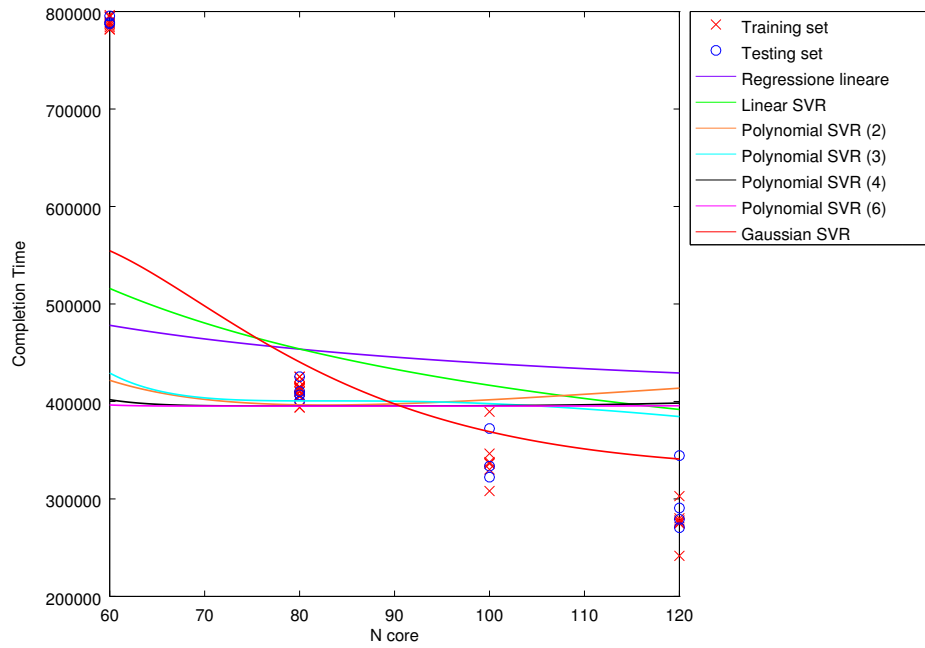


**Figure 53:** Completion time vs ncores for query R4 with datasize 250

### 3.4.2 Query R4 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.1039	0.9899	461984	0.0853	-0.0575
Linear SVR	0.1437	0.9863	469854	0.1652	-0.0741
Polynomial SVR (2)	0.7181	0.5918	554632	1.8115	0.2603
Polynomial SVR (3)	0.1830	0.9713	471892	0.1837	-0.0402
Polynomial SVR (4)	0.4879	0.8301	513705	3.3636	0.2170
Polynomial SVR (6)	0.3941	0.8979	504258	0.9466	0.1937
Gaussian SVR	0.1715	0.9822	470231	0.4231	0.0912

**Table 54:** Results for R4-500 with non-linear 1/ncores feature

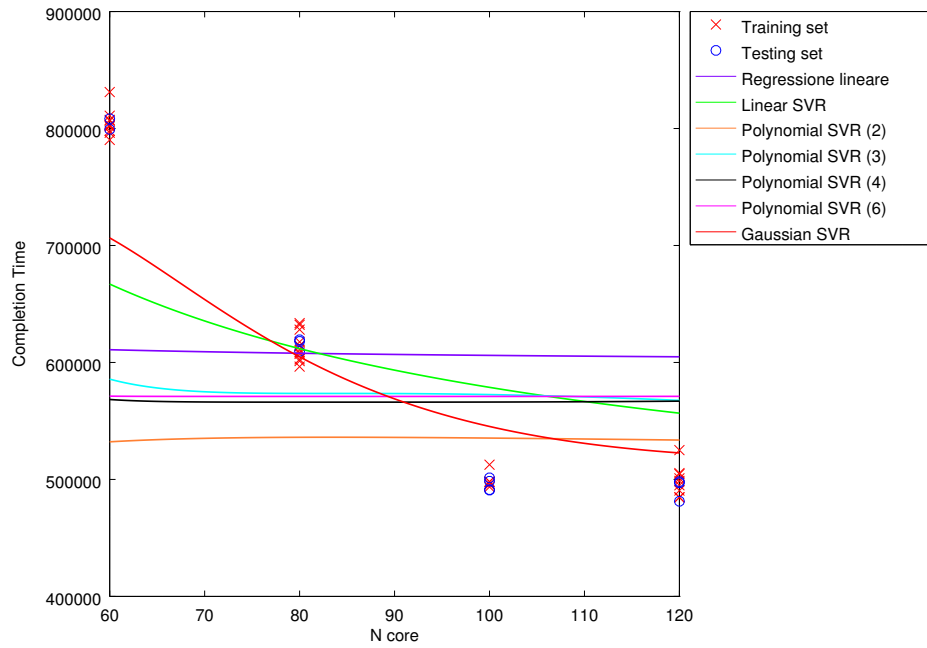


**Figure 54:** Completion time vs ncores for query R4 with datasize 500

### 3.4.3 Query R4 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.0249	0.9993	609688	0.0767	-0.0096
Linear SVR	0.0775	0.9941	616317	0.1494	-0.0111
Polynomial SVR (2)	0.6998	0.4366	691144	2.6142	0.0270
Polynomial SVR (3)	0.4296	0.8680	656260	0.8650	0.0495
Polynomial SVR (4)	0.7424	0.6278	691474	3.0453	0.0242
Polynomial SVR (6)	0.7619	0.5988	692973	41.6362	0.0564
Gaussian SVR	0.2495	0.9515	631230	0.5094	0.0416

**Table 55:** Results for R4-750 with non-linear 1/ncores feature

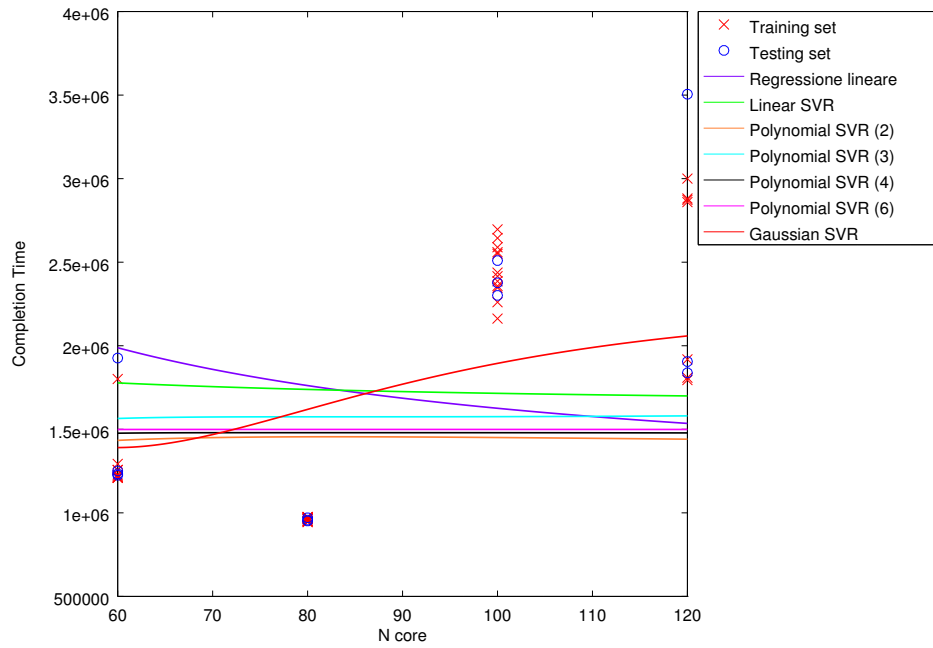


**Figure 55:** Completion time vs ncores for query R4 with datasize 750

### 3.4.4 Query R4 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.1178	0.9858	1780763	0.3091	-0.0268
Linear SVR	0.1508	0.9781	1815061	0.3434	-0.0358
Polynomial SVR (2)	0.6123	0.6395	2147223	8.6372	0.1279
Polynomial SVR (3)	0.8708	0.6596	2194020	1.7499	0.1679
Polynomial SVR (4)	1.4316	0.5428	2389075	8.5766	0.3266
Polynomial SVR (6)	2.2003	0.4893	2612105	2.9349	0.4842
Gaussian SVR	0.3502	0.8931	1871949	0.3178	-0.1009

**Table 56:** Results for R4-1000 with non-linear 1/ncore feature



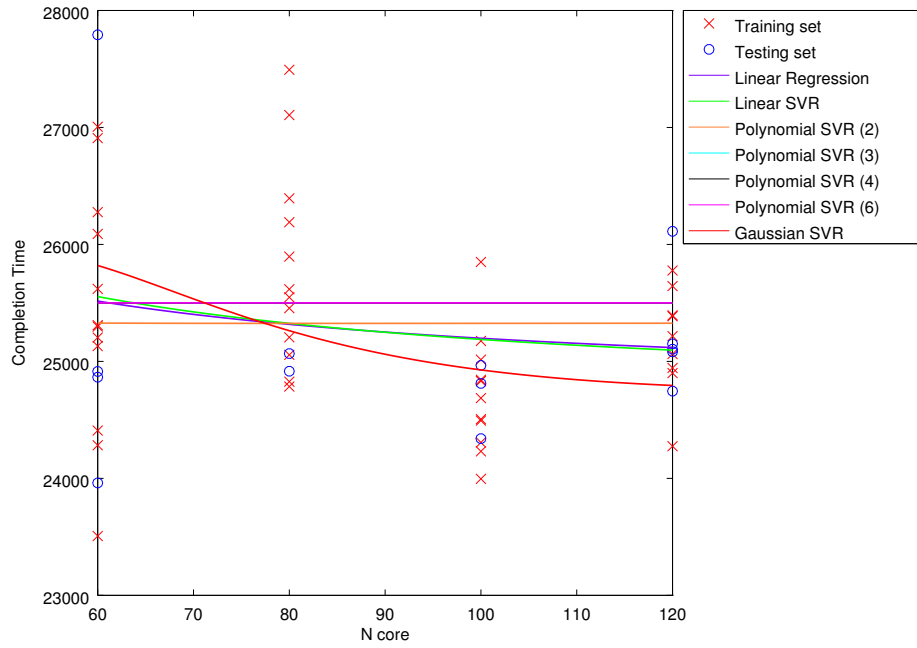
**Figure 56:** Completion time vs ncores for query R4 with datasize 1000

### 3.5 Query R5

#### 3.5.1 Query R5 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.7902	0.4355	25692	1.3583	0.0245
Linear SVR	0.8017	0.4899	25695	11.0402	0.0640
Polynomial SVR (2)	1.0464	0.0532	25915	12.6721	0.2061
Polynomial SVR (3)	1.1437	0.0000	26070	3.6631	0.4490
Polynomial SVR (4)	1.1437	0.0000	26070	3.6631	0.4490
Polynomial SVR (6)	1.1437	0.0000	26070	3.6631	0.4490
Gaussian SVR	0.7178	0.5705	25673	0.9514	-0.0608

**Table 57:** Results for R5-250 with non-linear 1/ncore feature

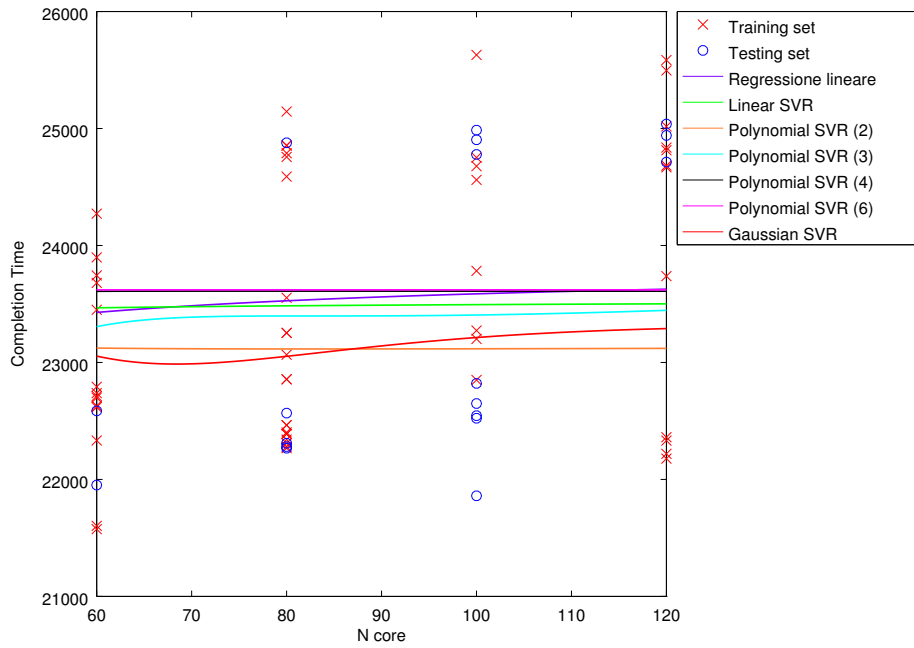


**Figure 57:** Completion time vs ncores for query R5 with datasize 250

### 3.5.2 Query R5 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2378	0.9442	23771	0.2128	-0.0053
Linear SVR	0.1676	0.9751	23712	0.1419	-0.0466
Polynomial SVR (2)	0.7513	0.7351	24396	6.0060	0.1990
Polynomial SVR (3)	0.5981	0.7171	23987	0.4265	-0.0989
Polynomial SVR (4)	0.9651	0.1515	24696	10.4681	0.1982
Polynomial SVR (6)	1.0094	0.0276	24731	9.3838	0.1498
Gaussian SVR	0.2083	0.9598	23753	0.2258	-0.0203

**Table 58:** Results for R5-500 with non-linear 1/ncore feature

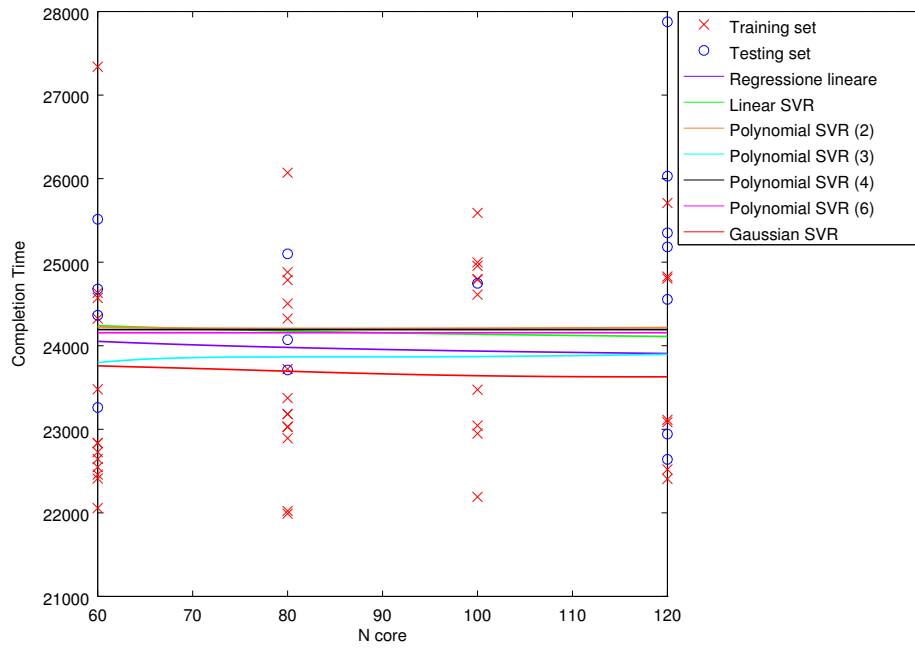


**Figure 58:** Completion time vs ncores for query R5 with datasize 500

### 3.5.3 Query R5 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.2329	-0.5849	24805	0.9817	-0.2918
Linear SVR	1.1139	0.0150	24796	1.9259	-0.2447
Polynomial SVR (2)	1.0313	0.0125	25012	4.8103	-0.3399
Polynomial SVR (3)	1.1771	0.0537	24878	1.9265	-0.3482
Polynomial SVR (4)	1.0605	0.0354	25042	14.9151	-0.3808
Polynomial SVR (6)	1.0680	0.0681	25049	9.3339	-0.4060
Gaussian SVR	1.0073	0.1519	24632	0.7970	-0.3309

**Table 59:** Results for R5-750 with non-linear 1/ncores feature

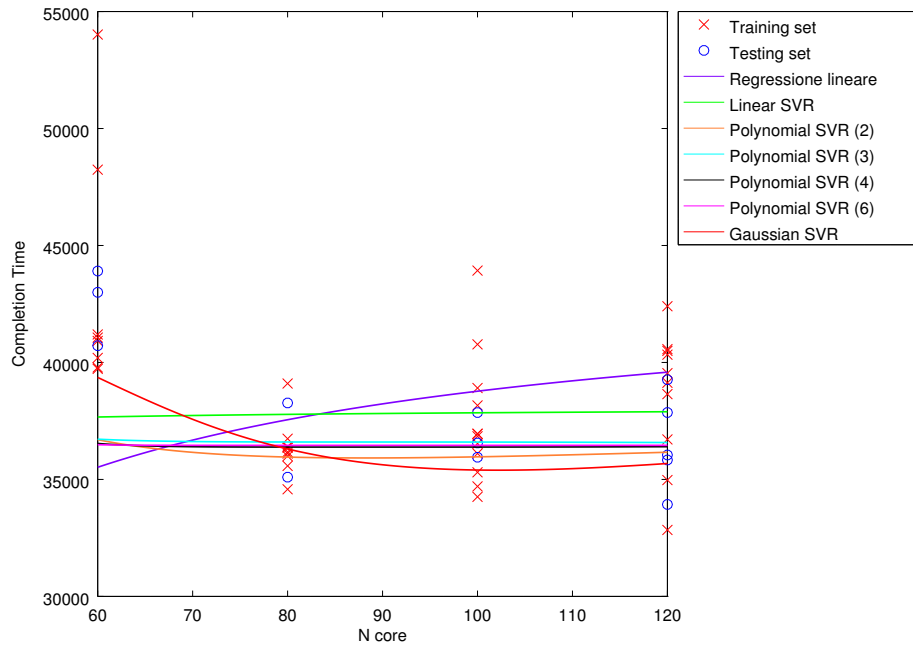


**Figure 59:** Completion time vs ncores for query R5 with datasize 750

### 3.5.4 Query R5 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.7757	0.1272	40269	8.1325	0.1327
Linear SVR	0.4719	0.6897	39564	1.1892	-0.0627
Polynomial SVR (2)	0.5218	0.8335	39510	0.5824	0.1911
Polynomial SVR (3)	0.4815	0.7456	39434	0.7028	-0.1583
Polynomial SVR (4)	2.1891	0.6549	41612	0.8490	0.7659
Polynomial SVR (6)	9.0686	0.5421	49794	0.8052	3.0575
Gaussian SVR	0.3401	0.8418	39083	0.6944	0.0572

**Table 60:** Results for R5-1000 with non-linear 1/ncore feature



**Figure 60:** Completion time vs ncores for query R5 with datasize 1000



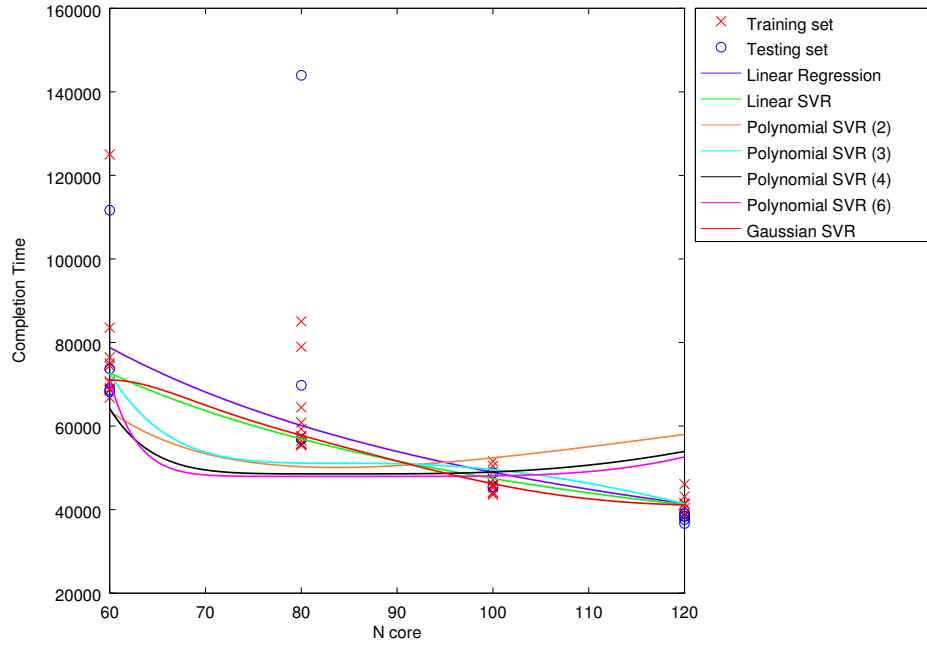
## 4 Fixed Datasize, $ncores^{-1}$ , Only $ncores$

### 4.1 Query R1

#### 4.1.1 Query R1 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.2438	0.3259	69940	4.1591	-0.3070
Linear SVR	1.2946	0.3792	69617	9.8952	-0.4115
Polynomial SVR (2)	1.5679	0.0009	78957	23.3735	-0.2765
Polynomial SVR (3)	1.3800	0.2700	71046	1.6291	-0.4540
Polynomial SVR (4)	1.5428	0.0283	77216	3.2523	-0.3834
Polynomial SVR (6)	1.4977	0.0704	75624	2.2494	-0.3222
Gaussian SVR	1.2913	0.4092	69556	69.7144	-0.4357

**Table 61:** Results for R1-250 considering only non-linear  $1/ncores$  feature

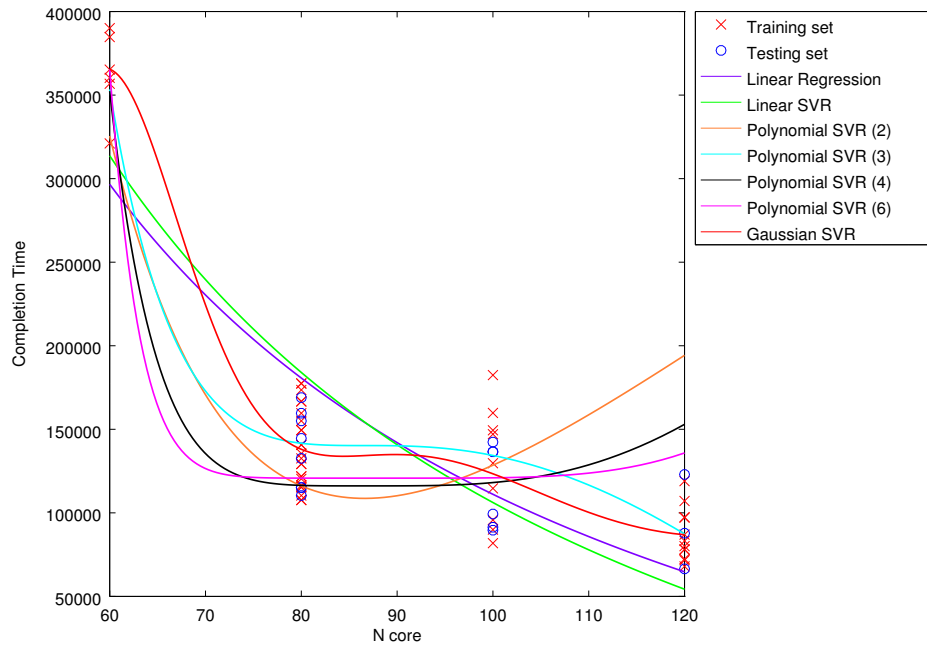


**Figure 61:** Completion time vs  $ncores$  for query R1 with datasize 250 with only  $1/ncores$  feature

#### 4.1.2 Query R1 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.4299	-0.8239	186098	1.0456	0.1101
Linear SVR	0.4844	0.3583	190687	0.9645	0.1330
Polynomial SVR (2)	0.5830	0.3046	191181	1.0484	0.1404
Polynomial SVR (3)	0.2854	0.2958	174622	1.1754	0.0854
Polynomial SVR (4)	0.4208	0.2616	183858	9.0979	0.0165
Polynomial SVR (6)	0.3558	0.2475	180322	0.9703	0.0168
Gaussian SVR	0.2599	0.3430	174651	0.8709	0.0205

**Table 62:** Results for R1-500 considering only non-linear 1/ncores feature

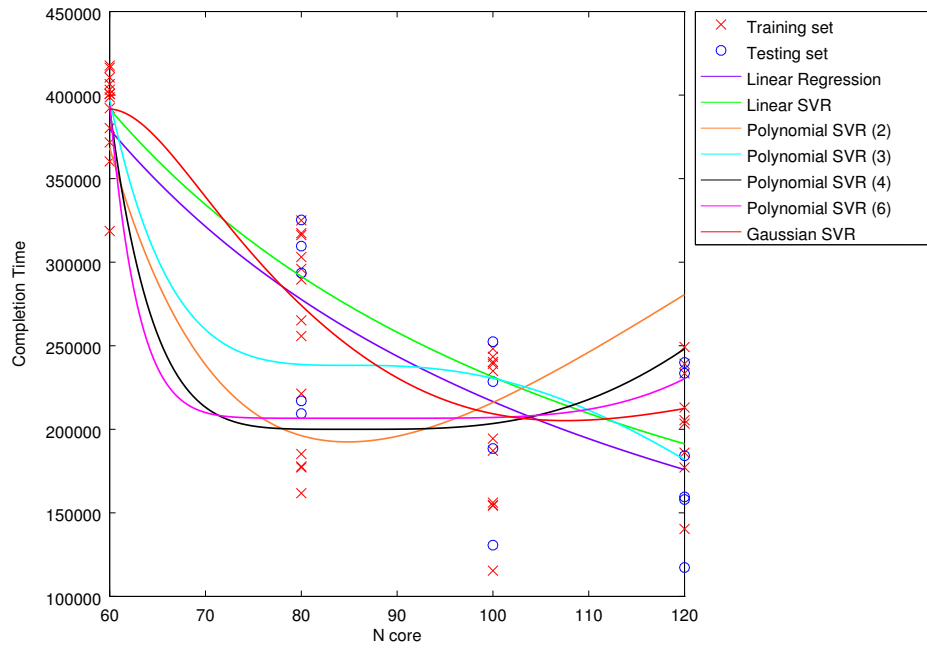


**Figure 62:** Completion time vs ncores for query R1 with datasize 500 with only 1/ncores feature

#### 4.1.3 Query R1 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.5196	0.3983	301071	1.4325	0.0161
Linear SVR	0.5593	0.4060	301291	1.0648	0.2096
Polynomial SVR (2)	0.9889	0.3005	335427	2.5686	0.2086
Polynomial SVR (3)	0.5764	0.2683	303740	1.3759	-0.0300
Polynomial SVR (4)	0.8258	0.2413	321119	2.7541	0.0410
Polynomial SVR (6)	0.7387	0.2238	313524	1.3009	-0.0036
Gaussian SVR	0.5548	0.4014	304893	1.6951	0.1742

**Table 63:** Results for R1-750 considering only non-linear 1/ncores feature

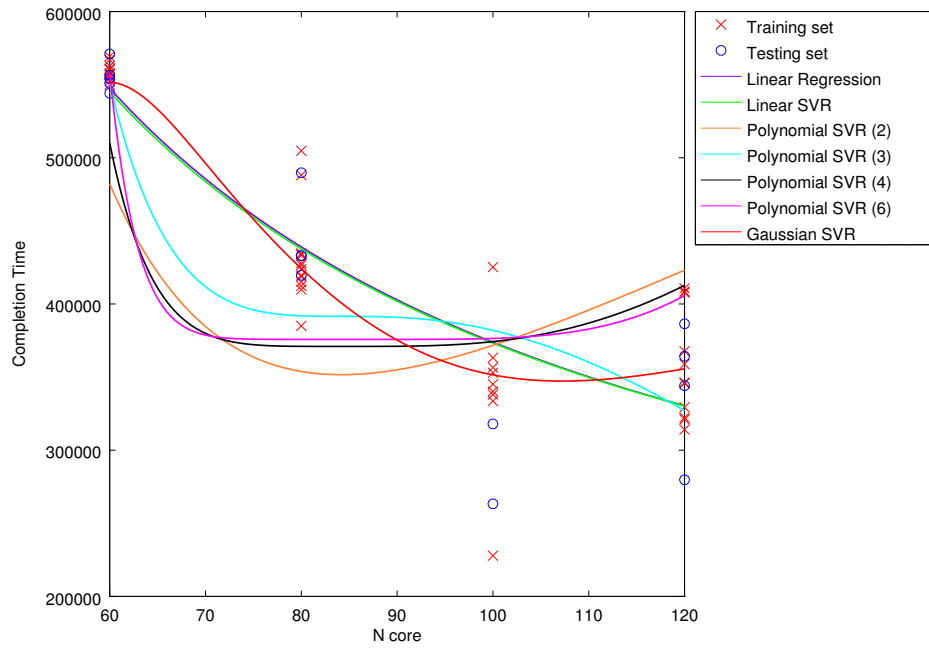


**Figure 63:** Completion time vs ncores for query R1 with datasize 750 with only 1/ncores feature

#### 4.1.4 Query R1 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.4522	0.8354	452627	0.6956	0.0466
Linear SVR	0.4523	0.8418	452924	0.7178	0.0256
Polynomial SVR (2)	0.9219	0.3472	503186	60.6930	-0.1777
Polynomial SVR (3)	0.5579	0.7553	461962	0.8781	-0.0831
Polynomial SVR (4)	0.7691	0.5531	486863	2.6097	-0.0537
Polynomial SVR (6)	0.6837	0.6343	471450	1.6197	0.1147
Gaussian SVR	0.4025	0.8860	447518	4.2138	0.0524

**Table 64:** Results for R1-1000 considering only non-linear 1/ncores feature



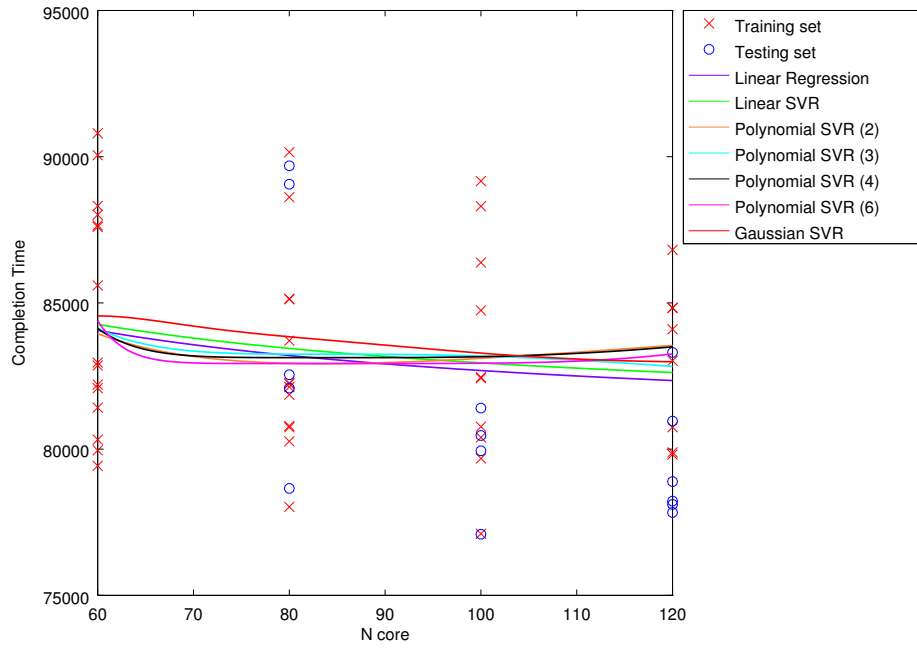
**Figure 64:** Completion time vs ncores for query R1 with datasize 1000 with only 1/ncores feature

## 4.2 Query R2

### 4.2.1 Query R2 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.1144	-0.1605	86606	43.9004	0.5333
Linear SVR	1.0999	0.3336	86535	12.2781	0.4984
Polynomial SVR (2)	1.2137	0.2301	86821	97.7931	0.5667
Polynomial SVR (3)	1.1385	0.1887	86639	24.1856	0.5212
Polynomial SVR (4)	1.2061	0.1636	86830	55.5557	0.5837
Polynomial SVR (6)	1.1742	0.1449	86666	21.9217	0.5206
Gaussian SVR	1.1479	0.3465	86748	19.8558	0.6024

**Table 65:** Results for R2-250 considering only non-linear 1/ncore feature

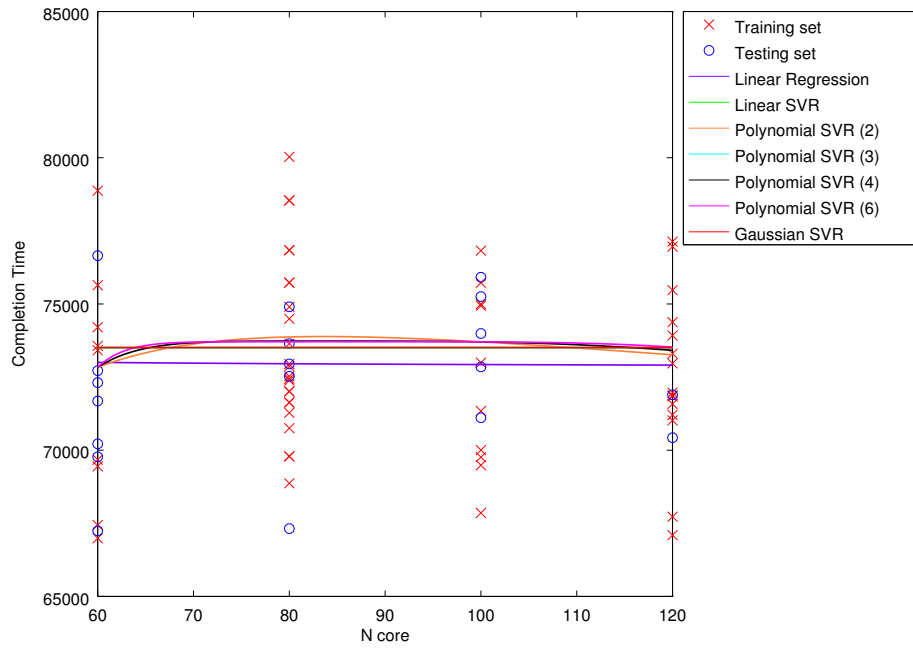


**Figure 65:** Completion time vs ncores for query R2 with datasize 250 with only 1/ncore feature

#### 4.2.2 Query R2 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.8450	-0.0683	74946	1942.7439	0.2036
Linear SVR	0.9098	0.0000	75155	3.9493	0.3992
Polynomial SVR (2)	0.8688	0.0695	74985	9.5569	0.3579
Polynomial SVR (3)	0.9098	0.0000	75155	3.9493	0.3992
Polynomial SVR (4)	0.8660	0.0737	74979	9.4332	0.3510
Polynomial SVR (6)	0.8683	0.0677	74987	9.3695	0.3529
Gaussian SVR	0.9098	0.0000	75155	3.9493	0.3992

**Table 66:** Results for R2-500 considering only non-linear 1/ncores feature

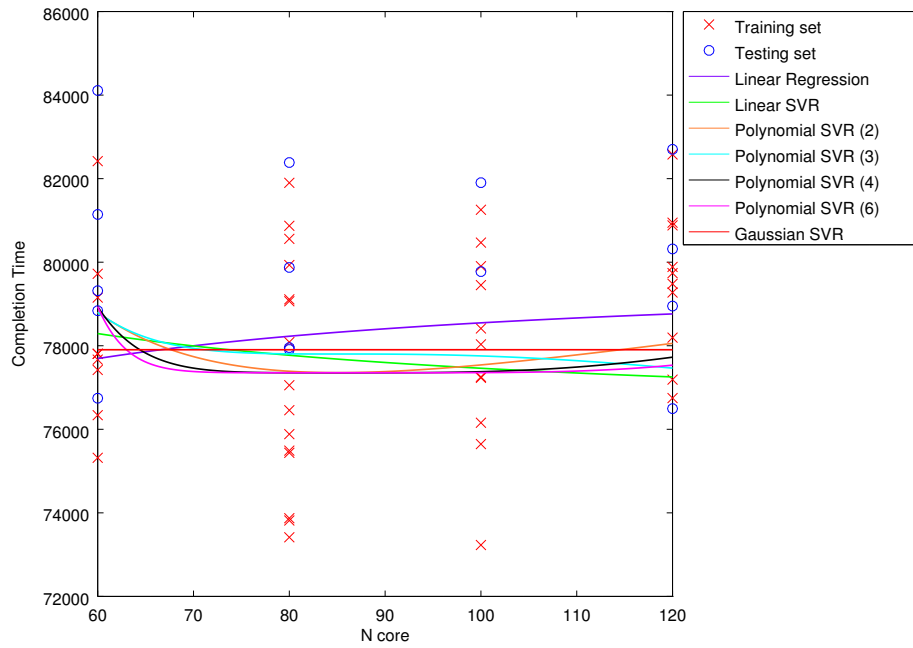


**Figure 66:** Completion time vs ncores for query R2 with datasize 500 with only 1/ncores feature

### 4.2.3 Query R2 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.1428	-0.7782	80571	11.0018	-0.7311
Linear SVR	1.2154	0.0007	80760	26.8595	-0.8498
Polynomial SVR (2)	1.1469	0.0007	80643	4.9567	-0.7332
Polynomial SVR (3)	1.1451	0.0029	80582	3.8699	-0.7405
Polynomial SVR (4)	1.1733	0.0010	80703	3.2972	-0.7625
Polynomial SVR (6)	1.1884	0.0015	80732	3.0496	-0.7841
Gaussian SVR	1.1685	0.0000	80656	5.5732	-0.7944

**Table 67:** Results for R2-750 considering only non-linear 1/ncores feature

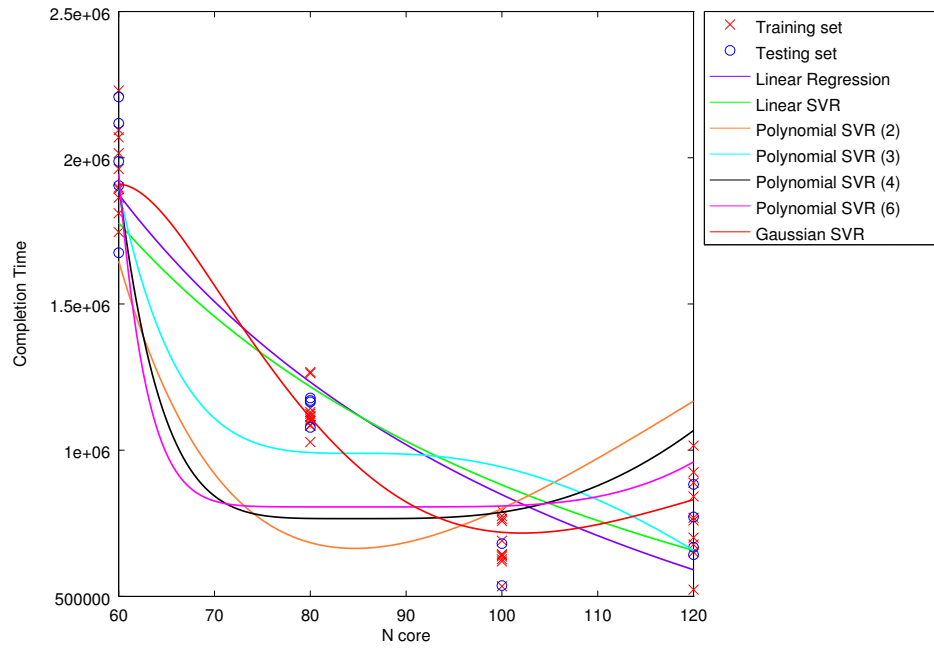


**Figure 67:** Completion time vs ncores for query R2 with datasize 750 with only 1/ncores feature

#### 4.2.4 Query R2 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.3620	0.8906	1283627	0.4741	-0.0685
Linear SVR	0.3947	0.8955	1286697	0.5284	-0.0674
Polynomial SVR (2)	0.7818	0.5184	1500648	3.3328	-0.1846
Polynomial SVR (3)	0.3903	0.8815	1294867	0.6766	-0.0936
Polynomial SVR (4)	0.5745	0.7255	1394095	1.8798	-0.0267
Polynomial SVR (6)	0.4923	0.7987	1355406	0.7814	-0.0340
Gaussian SVR	0.2777	0.9490	1241305	1.1338	0.0117

**Table 68:** Results for R2-1000 considering only non-linear 1/ncores feature



**Figure 68:** Completion time vs ncores for query R2 with datasize 1000 with only 1/ncores feature

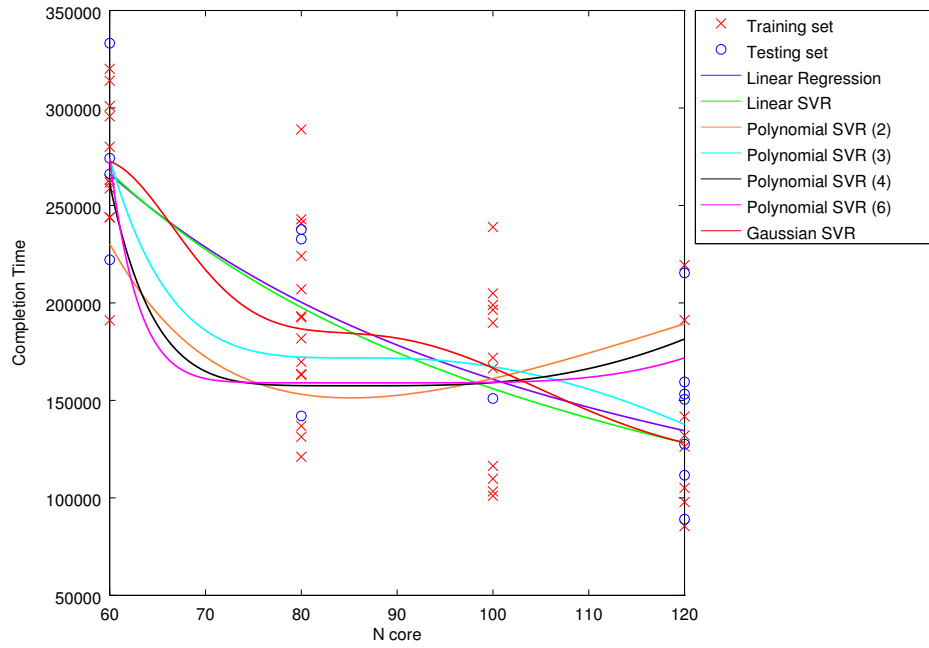


### 4.3 Query R3

#### 4.3.1 Query R3 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.6073	0.6555	220156	1.1869	-0.1188
Linear SVR	0.6177	0.6687	220214	1.2979	-0.1555
Polynomial SVR (2)	0.9097	0.2319	238176	29.0584	0.0010
Polynomial SVR (3)	0.6375	0.6375	222035	1.0650	-0.1254
Polynomial SVR (4)	0.7891	0.4276	231030	3.6890	0.0835
Polynomial SVR (6)	0.7315	0.5050	227058	1.6310	0.0720
Gaussian SVR	0.6284	0.6602	221659	5.7880	-0.1561

**Table 69:** Results for R3-250 considering only non-linear 1/ncores feature

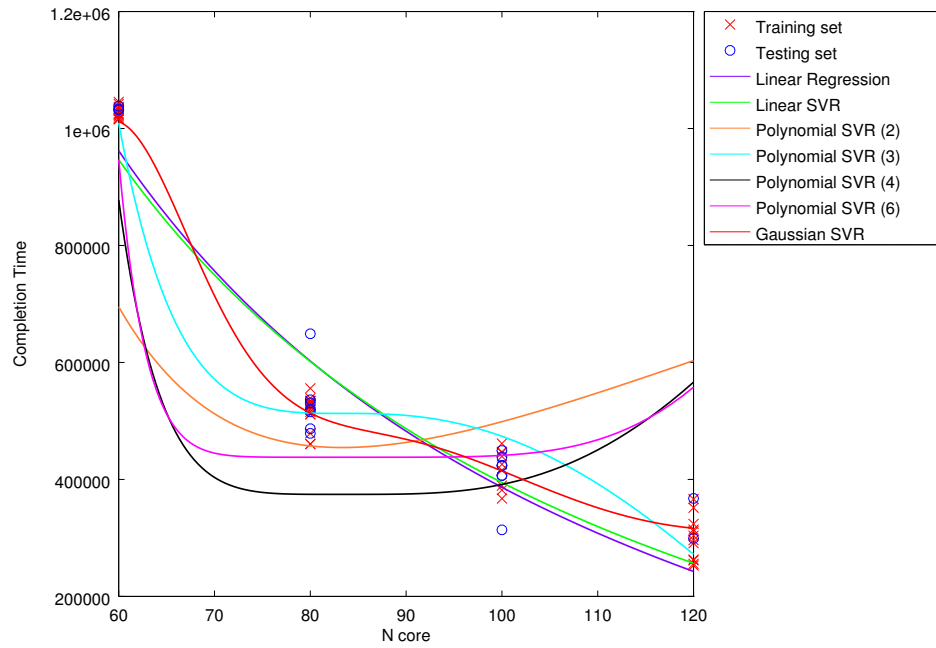


**Figure 69:** Completion time vs ncores for query R3 with datasize 250 with only 1/ncores feature

### 4.3.2 Query R3 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2948	0.8921	627596	0.8886	-0.0161
Linear SVR	0.2945	0.8928	625919	0.8766	-0.0043
Polynomial SVR (2)	0.7156	0.4669	701340	1.8537	-0.0761
Polynomial SVR (3)	0.2481	0.9257	606324	0.5932	0.0281
Polynomial SVR (4)	0.5675	0.6815	680691	3.9400	-0.2550
Polynomial SVR (6)	0.4315	0.7772	643628	15.8650	-0.0502
Gaussian SVR	0.1771	0.9638	589448	0.3752	-0.0387

**Table 70:** Results for R3-500 considering only non-linear 1/ncores feature

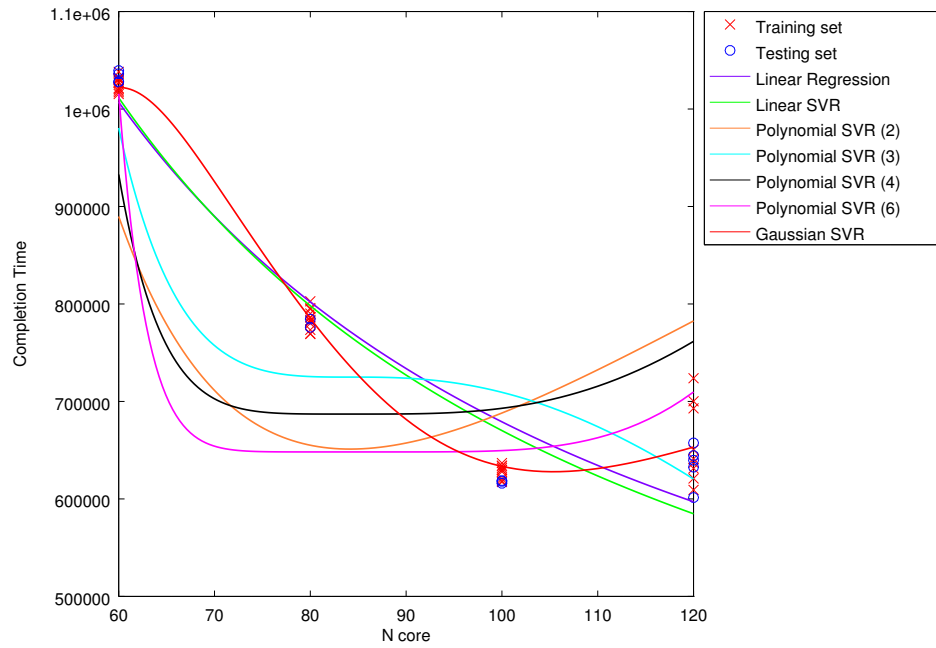


**Figure 70:** Completion time vs ncores for query R3 with datasize 500 with only 1/ncores feature

### 4.3.3 Query R3 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2572	0.9452	808883	0.3550	-0.0266
Linear SVR	0.2640	0.9462	809635	0.3292	-0.0638
Polynomial SVR (2)	0.8110	0.5097	898292	5.5350	0.0559
Polynomial SVR (3)	0.3528	0.9156	822141	0.6086	-0.0519
Polynomial SVR (4)	0.6562	0.7549	874974	5.0119	0.1206
Polynomial SVR (6)	0.4352	0.8489	828977	0.6576	0.0602
Gaussian SVR	0.1148	0.9956	785993	0.1490	0.0463

**Table 71:** Results for R3-750 considering only non-linear 1/ncores feature

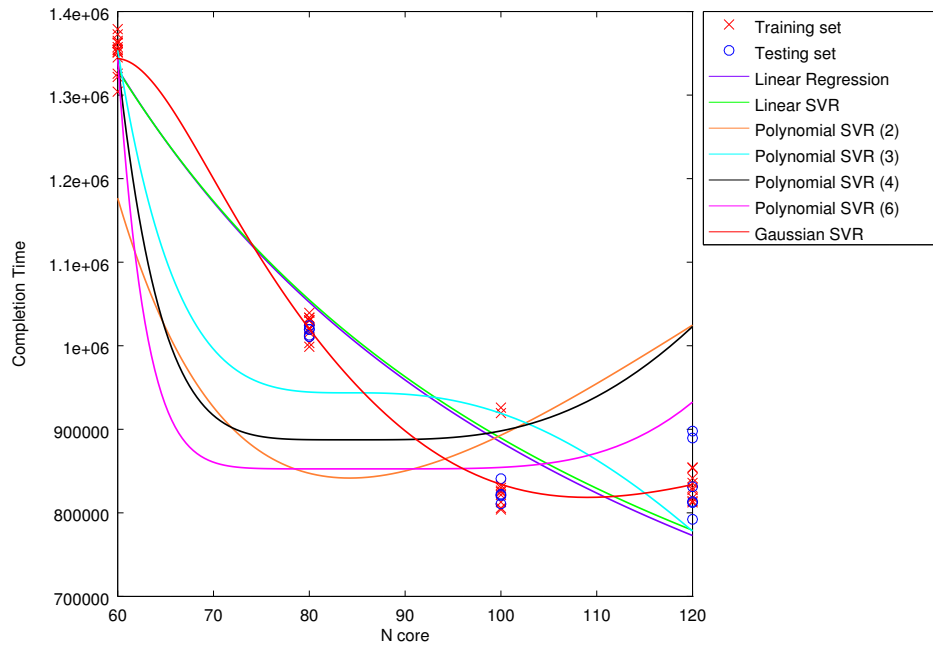


**Figure 71:** Completion time vs ncores for query R3 with datasize 750 with only 1/ncores feature

#### 4.3.4 Query R3 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2911	0.5343	1064574	0.5165	0.0032
Linear SVR	0.2877	0.7391	1064351	0.5297	0.0278
Polynomial SVR (2)	0.7466	0.4419	1159422	5.6327	0.1684
Polynomial SVR (3)	0.3749	0.3548	1084448	0.7546	-0.1095
Polynomial SVR (4)	0.6839	0.2976	1146704	6.2887	0.2346
Polynomial SVR (6)	0.5441	0.2591	1110554	0.8811	-0.0443
Gaussian SVR	0.1265	0.9125	1029081	0.2465	0.0069

**Table 72:** Results for R3-1000 considering only non-linear 1/ncores feature



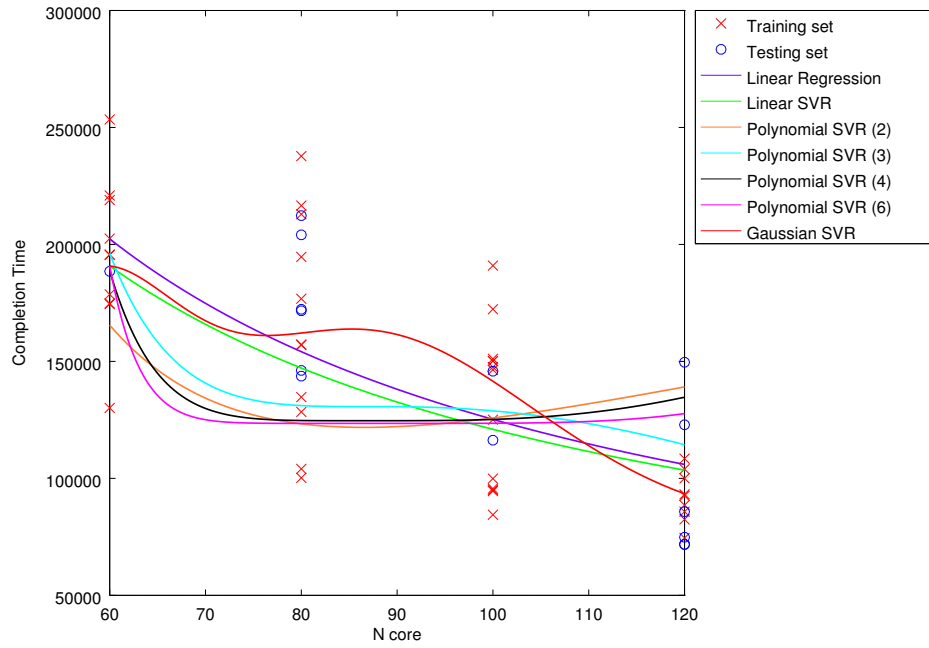
**Figure 72:** Completion time vs ncores for query R3 with datasize 1000 with only 1/ncores feature

## 4.4 Query R4

### 4.4.1 Query R4 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.6070	0.5742	168893	1.4385	-0.0884
Linear SVR	0.6453	0.6092	168736	3.3350	-0.1911
Polynomial SVR (2)	1.0200	0.0620	185960	5.7683	-0.1169
Polynomial SVR (3)	0.8066	0.3128	176368	2.0597	-0.2046
Polynomial SVR (4)	0.9707	0.0038	182702	3.2511	-0.1113
Polynomial SVR (6)	0.9394	0.0419	181453	2.1538	-0.1802
Gaussian SVR	0.5545	0.6579	165395	1.9156	-0.0955

**Table 73:** Results for R4-250 considering only non-linear 1/ncores feature

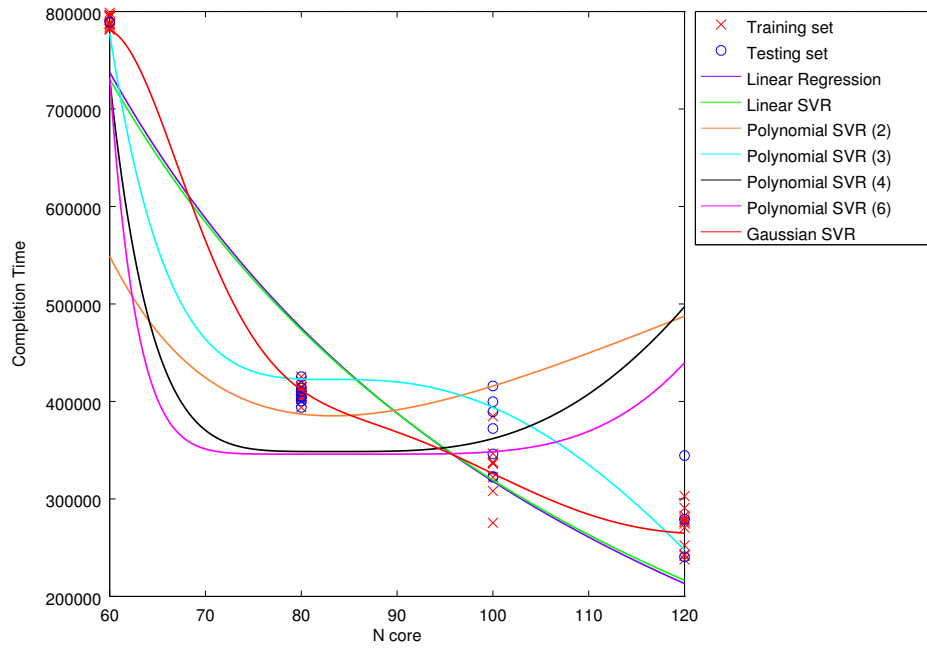


**Figure 73:** Completion time vs ncores for query R4 with datasize 250 with only 1/ncores feature

#### 4.4.2 Query R4 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.3781	0.5844	505463	1.0902	-0.0076
Linear SVR	0.3710	0.7170	504461	1.1659	-0.0225
Polynomial SVR (2)	0.5873	0.0879	515220	1.6285	0.1579
Polynomial SVR (3)	0.2084	0.8871	472073	0.6097	0.0532
Polynomial SVR (4)	0.5369	0.2894	517163	1.0388	0.0188
Polynomial SVR (6)	0.4410	0.4722	509850	5.2998	-0.0651
Gaussian SVR	0.2139	0.9020	470608	0.2781	-0.0959

**Table 74:** Results for R4-500 considering only non-linear 1/ncores feature

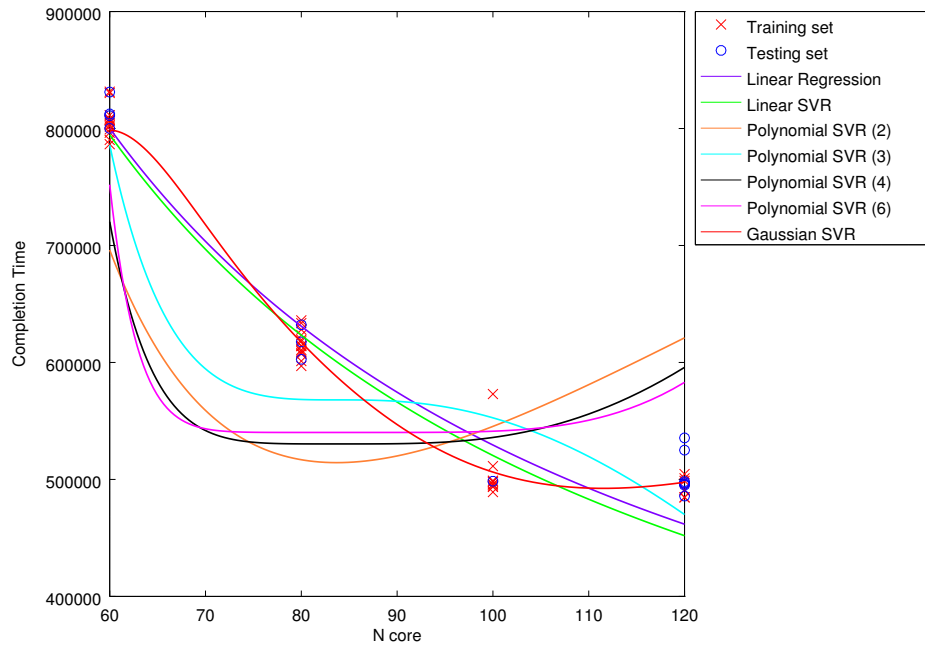


**Figure 74:** Completion time vs ncores for query R4 with datasize 500 with only 1/ncores feature

#### 4.4.3 Query R4 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2891	0.9216	639297	0.3303	-0.1769
Linear SVR	0.3171	0.9604	642059	0.3606	-0.2126
Polynomial SVR (2)	0.8737	0.2889	717464	4.9708	0.0470
Polynomial SVR (3)	0.3180	0.9567	645551	0.4674	-0.2339
Polynomial SVR (4)	0.7028	0.5911	695892	3.8099	0.0212
Polynomial SVR (6)	0.5767	0.7427	679873	1.8128	0.0588
Gaussian SVR	0.1321	0.9872	620562	0.3047	-0.0537

**Table 75:** Results for R4-750 considering only non-linear 1/ncores feature

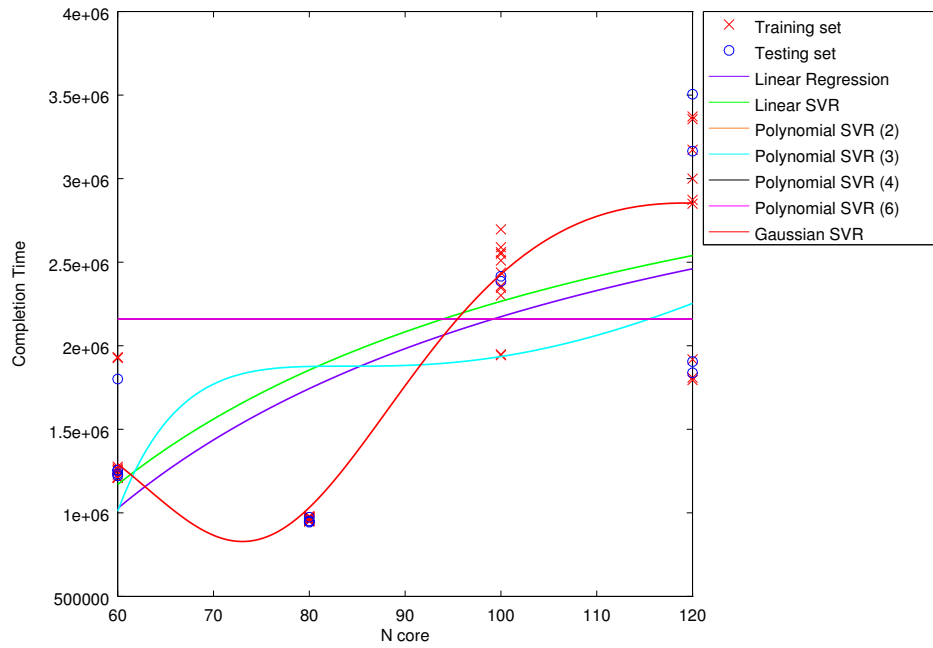


**Figure 75:** Completion time vs ncores for query R4 with datasize 750 with only 1/ncores feature

#### 4.4.4 Query R4 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.7562	0.4053	2400542	1.8265	-0.0384
Linear SVR	0.7731	0.4135	2357382	20.9759	0.1770
Polynomial SVR (2)	1.1204	0.0000	2660642	2.5773	0.5419
Polynomial SVR (3)	0.8625	0.2465	2460332	8.6972	-0.0297
Polynomial SVR (4)	1.1204	0.0000	2660642	2.5773	0.5419
Polynomial SVR (6)	1.1204	0.0000	2660642	2.5773	0.5419
Gaussian SVR	0.5269	0.7313	2109868	0.3111	0.0870

**Table 76:** Results for R4-1000 considering only non-linear 1/ncores feature



**Figure 76:** Completion time vs ncores for query R4 with datasize 1000 with only 1/ncores feature

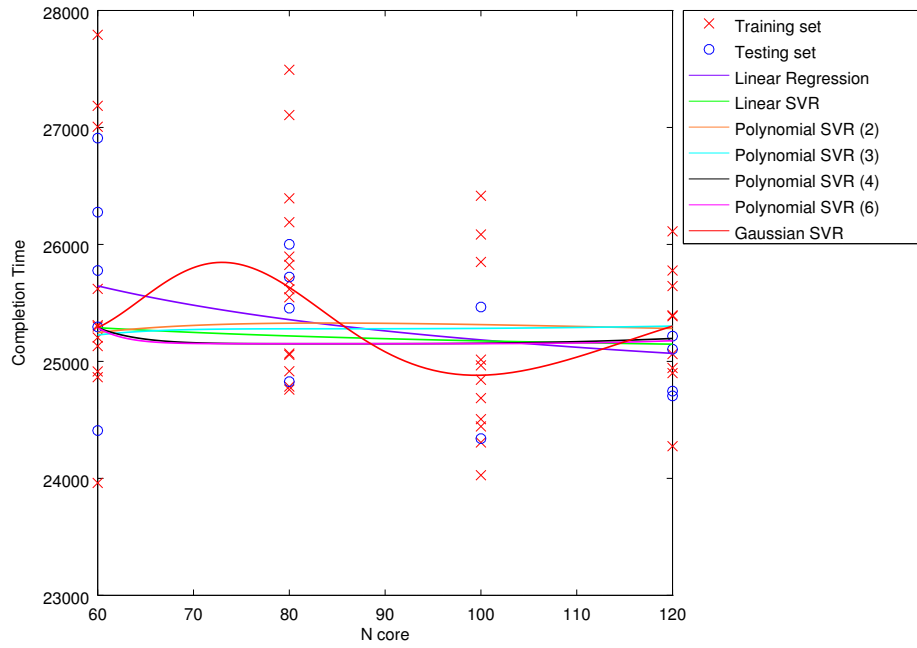


## 4.5 Query R5

### 4.5.1 Query R5 – Datasize 250

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.7378	0.1842	25790	8.9914	0.1499
Linear SVR	0.8016	0.2416	25849	11.4136	-0.1579
Polynomial SVR (2)	0.8292	0.0416	25869	48.5431	-0.0755
Polynomial SVR (3)	0.8396	0.1988	25885	14.6324	-0.0974
Polynomial SVR (4)	0.8154	0.0955	25864	11.0897	-0.1667
Polynomial SVR (6)	0.8130	0.1244	25862	10.9835	-0.1733
Gaussian SVR	0.7987	0.0545	25849	16.0539	-0.0242

**Table 77:** Results for R5-250 considering only non-linear 1/ncore feature

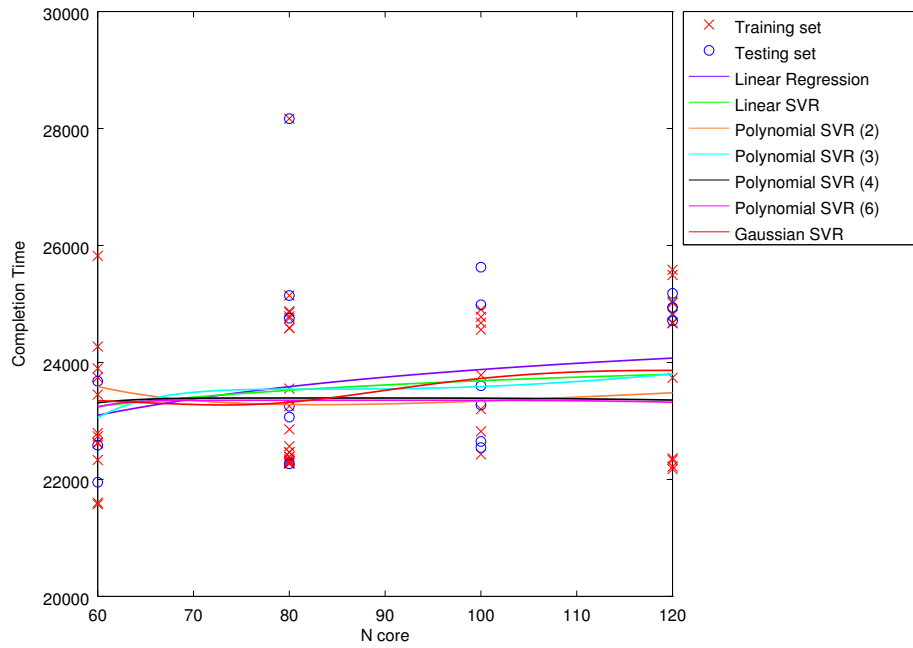


**Figure 77:** Completion time vs ncores for query R5 with datasize 250 with only 1/ncore feature

#### 4.5.2 Query R5 – Datasize 500

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.0683	0.0310	24784	8.0917	-0.2716
Linear SVR	1.0976	0.1083	24817	12.5978	-0.3183
Polynomial SVR (2)	1.1979	0.0542	24879	7.2597	-0.4576
Polynomial SVR (3)	1.0905	0.1702	24796	13.4149	-0.3605
Polynomial SVR (4)	1.1765	0.0743	24885	4.7954	-0.4674
Polynomial SVR (6)	1.1860	0.0966	24887	4.1645	-0.4986
Gaussian SVR	1.1280	0.0173	24816	6.6657	-0.3383

**Table 78:** Results for R5-500 considering only non-linear 1/ncores feature

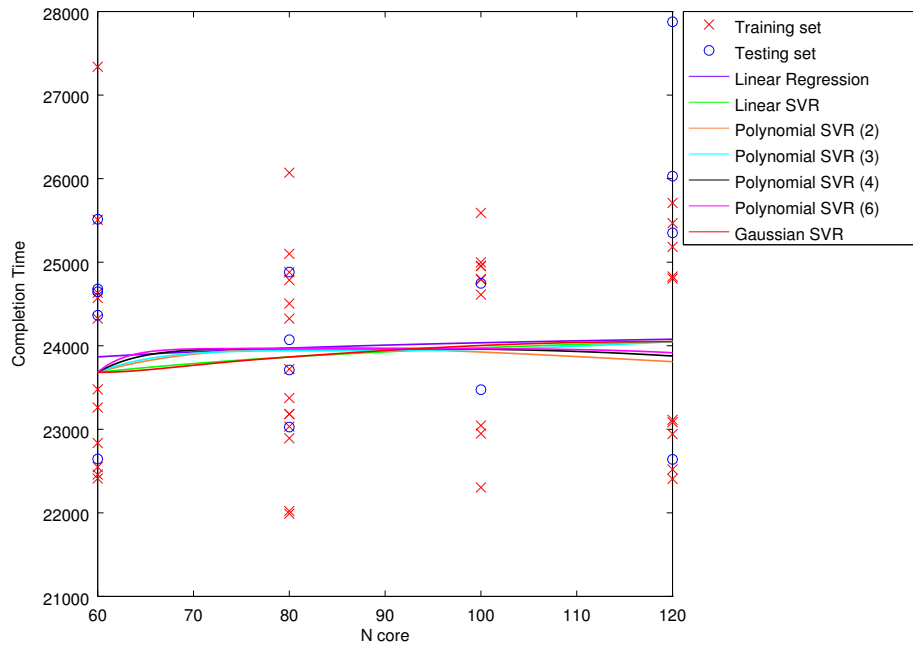


**Figure 78:** Completion time vs ncores for query R5 with datasize 500 with only 1/ncores feature

### 4.5.3 Query R5 – Datasize 750

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.0935	-0.1309	25113	24.4707	-0.4102
Linear SVR	1.1208	0.0641	25156	18.8971	-0.4952
Polynomial SVR (2)	1.1726	0.0256	25188	12.9284	-0.5291
Polynomial SVR (3)	1.1208	0.0385	25156	16.3220	-0.4818
Polynomial SVR (4)	1.1570	0.0032	25179	16.5739	-0.5116
Polynomial SVR (6)	1.1485	0.0000	25173	20.2662	-0.5029
Gaussian SVR	1.1206	0.0582	25156	17.0635	-0.4925

**Table 79:** Results for R5-750 considering only non-linear 1/ncores feature

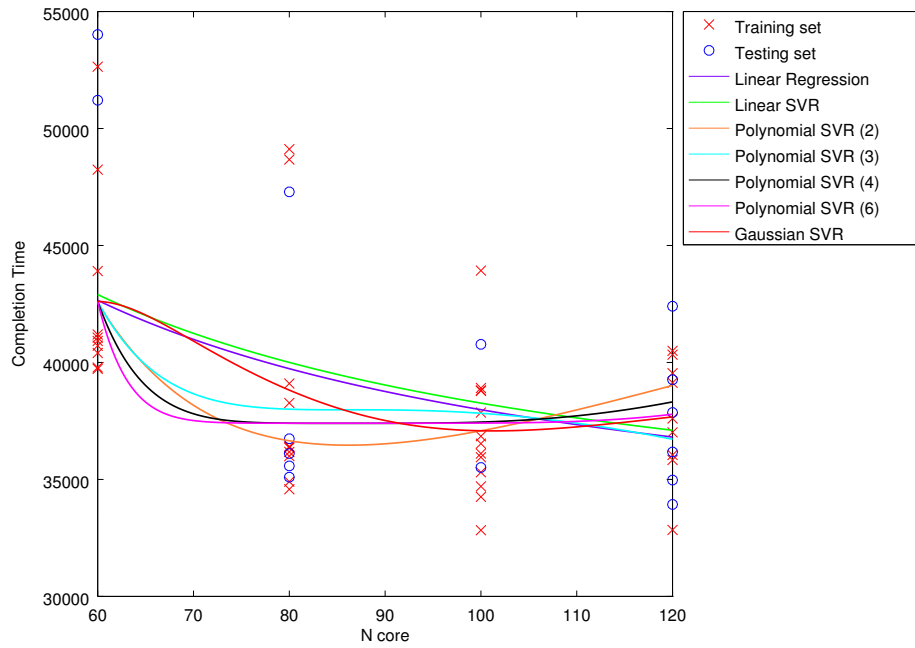


**Figure 79:** Completion time vs ncores for query R5 with datasize 750 with only 1/ncores feature

#### 4.5.4 Query R5 – Datasize 1000

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.1223	0.2810	43260	6.1160	-0.3078
Linear SVR	1.0946	0.4569	43303	3.0103	-0.1742
Polynomial SVR (2)	1.1302	0.4414	42846	13.0391	-0.2952
Polynomial SVR (3)	1.0908	0.6483	42942	2.1287	-0.3742
Polynomial SVR (4)	1.0981	0.6220	42883	2.5053	-0.2895
Polynomial SVR (6)	1.0927	0.6696	42822	1.9402	-0.3368
Gaussian SVR	1.0926	0.6098	43105	5.8585	-0.2533

**Table 80:** Results for R5-1000 considering only non-linear 1/ncores feature



**Figure 80:** Completion time vs ncores for query R5 with datasize 1000 with only 1/ncores feature

## 5 Prediction between different queries

### 5.1 Fast $\rightarrow$ Fast

#### 5.1.1 R2 $\rightarrow$ R5

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.1568	-0.8648	67566	0.6681	0.1335
Linear SVR	0.1490	0.0239	64453	0.1964	-0.0737
Polynomial SVR (2)	0.7511	0.4029	109514	2.3830	0.7317
Polynomial SVR (3)	0.5915	0.3052	99021	3.6806	0.5830
Polynomial SVR (4)	0.9178	0.1582	122126	1.8357	0.9105
Polynomial SVR (6)	0.9128	0.0059	121777	1.8446	0.9055
Gaussian SVR	2.9328	0.0434	264196	1.1654	2.9244

**Table 81:** Results for R2  $\rightarrow$  R5

#### 5.1.2 R5 $\rightarrow$ R2

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.7558	0.6756	76448	2.0364	-0.2630
Linear SVR	0.7959	0.9907	76965	1.1571	-0.2703
Polynomial SVR (2)	2.7579	0.9806	139680	1.7157	-1.1593
Polynomial SVR (3)	2.7294	0.9437	125057	2.5214	-0.0610
Polynomial SVR (4)	26.0192	0.8878	417682	1.6488	-5.1001
Polynomial SVR (6)	614.2826	0.7489	6679571	1.6376	-93.8647
Gaussian SVR	1.5404	0.0474	111978	3.1717	-0.7666

**Table 82:** Results for R5  $\rightarrow$  R2

## 5.2 Slow $\rightarrow$ Slow

### 5.2.1 R3 $\rightarrow$ R4

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2833	0.9202	650059	0.4257	-0.1265
Linear SVR	0.1825	0.9826	634329	0.2198	-0.0538
Polynomial SVR (2)	4.0199	0.5340	1213449	27.1140	-0.9687
Polynomial SVR (3)	2.4842	0.6543	954968	2.1895	1.0391
Polynomial SVR (4)	3.6375	0.4694	1146482	2255.3549	-0.7810
Polynomial SVR (6)	10.1652	0.2377	1622002	6.1169	-1.4196
Gaussian SVR	0.6458	0.6269	709948	6.2123	-0.0983

**Table 83:** Results for R3  $\rightarrow$  R4

### 5.2.2 R4 $\rightarrow$ R3

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.1105	0.9871	632615	0.1226	0.0362
Linear SVR	0.1304	0.9929	637124	0.1543	0.0348
Polynomial SVR (2)	1.3395	0.0403	880037	4.6156	-0.8121
Polynomial SVR (3)	0.6008	0.7158	722956	9.7972	-0.0694
Polynomial SVR (4)	1.1541	0.2546	849544	2.0896	-0.7642
Polynomial SVR (6)	1.4989	0.1423	896084	3.4792	-0.8285
Gaussian SVR	0.5072	0.9236	716605	4.3227	-0.3492

**Table 84:** Results for R4  $\rightarrow$  R3

### 5.3 Fast and Slow $\rightarrow$ Average

#### 5.3.1 R1, R2, R4 $\rightarrow$ R3

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	0.2272	0.9488	409550	0.2053	0.1589
Linear SVR	0.2067	0.9967	405528	0.1814	0.1321
Polynomial SVR (2)	0.6201	0.8075	521981	6.8188	-0.4190
Polynomial SVR (3)	1.1435	0.9005	584315	0.6296	0.5928
Polynomial SVR (4)	1.0506	0.6168	604303	9.6669	-0.4178
Polynomial SVR (6)	1.7485	0.5408	645317	3.9186	0.0561
Gaussian SVR	0.3410	0.9567	431620	0.3727	-0.2325

**Table 85:** Results for R1 R2 R4  $\rightarrow$  R3

### 5.4 Fast $\rightarrow$ Slow

#### 5.4.1 R2, R5 $\rightarrow$ R3

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.3439	-0.8212	587920	11.0452	-1.1567
Linear SVR	1.9543	0.5645	750608	3.0020	-1.6831
Polynomial SVR (2)	1.9696	0.7296	754277	2.9306	-1.6949
Polynomial SVR (3)	1.9553	0.4844	750883	2.9970	-1.6840
Polynomial SVR (4)	1.9651	0.3978	753138	2.9512	-1.6913
Polynomial SVR (6)	1.9637	0.2277	752824	2.9577	-1.6902
Gaussian SVR	1.9563	0.3319	751087	2.9924	-1.6846

**Table 86:** Results for R2 R5  $\rightarrow$  R3

## 5.5 Slow $\rightarrow$ Fast

### 5.5.1 R3, R4 $\rightarrow$ R2

Model	RMSE	R <sup>2</sup>	Mean absolute error	Mean relative error	Mean difference
Linear regression	1.1255	-9.6707	687118	3.2955	0.7742
Linear SVR	0.6531	0.9712	628220	1.5668	0.6053
Polynomial SVR (2)	10.0692	0.4357	1673202	2.0517	1.0677
Polynomial SVR (3)	11.1540	0.4308	1194095	1.3740	1.1974
Polynomial SVR (4)	23.4077	0.9333	2923213	2.7674	7.1852
Polynomial SVR (6)	2870.8214	0.3484	115349534	3.2630	329.5167
Gaussian SVR	1.0588	0.3912	769859	274.6840	1.0114

**Table 87:** Results for R3 R4  $\rightarrow$  R2