|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Single Fold** | | | **5-Fold** | | |
|  |  |  |  |  |  |  |
| **Raw Features – no PCA** | | | | | | |
| **Full - Cov** | 0.346 | 0.766 | 0.824 | 0.343 | 0.795 | 0.906 |
| **Diag -Cov** | 0.527 | 0.911 | 0.937 | 0.548 | 0.962 | 0.973 |
| **Tied Full-Cov** | 0.355 | 0.818 | 0.836 | 0.359 | 0.843 | 0.827 |
| **Tied Diag- Cov** | 0.521 | 0.913 | 0.983 | 0.543 | 0.970 | 0.952 |
| **Gaussianized Features – no PCA** | | | | | | |
| **Full - Cov** | 0.277 | 0.791 | 0.824 | 0.306 | 0.772 | 0.871 |
| **Diag -Cov** | 0.497 | 0.901 | 0.963 | 0.516 | 0.927 | 0.975 |
| **Tied Full-Cov** | 0.355 | 0.889 | 0.906 | 0.359 | 0.843 | 0.827 |
| **Tied Diag- Cov** | 0.521 | 0.913 | 0.983 | 0.543 | 0.970 | 0.952 |
| **Raw Features – PCA (m=9)** | | | | | | |
| **Full - Cov** | 0.455 | 0.966 | 0.884 | 0.495 | 0.980 | 0.975 |
| **Diag -Cov** | 0.541 | 0.963 | 0.947 | 0.570 | 1.0 | 0.988 |
| **Tied Full-Cov** | 0.555 | 0.974 | 0.939 | 0.359 | 0.843 | 0.827 |
| **Tied Diag- Cov** | 0.521 | 0.913 | 0.983 | 0.543 | 0.970 | 0.952 |
| **Gaussianized Features – PCA (m=9)** | | | | | | |
| **Full - Cov** | 0.300 | 0.820 | 0.858 | 0.336 | 0.805 | 0.898 |
| **Diag -Cov** | 0.392 | 0.834 | 0.899 | 0.407 | 0.884 | 0.899 |
| **Tied Full-Cov** | 0.421 | 0.897 | 0.903 | 0.359 | 0.843 | 0.827 |
| **Tied Diag- Cov** | 0.521 | 0.913 | 0.983 | 0.543 | 0.970 | 0.952 |
| **Raw Features – PCA (m=8)** | | | | | | |
| **Full - Cov** | 0.490 | 0.970 | 0.930 | 0.537 | 0.998 | 0.951 |
| **Diag -Cov** | 0.606 | 0.992 | 0.966 | 0.611 | 1.0 | 0.963 |
| **Tied Full-Cov** | 0.585 | 0.963 | 0.947 | 0.359 | 0.843 | 0.827 |
| **Tied Diag- Cov** | 0.521 | 0.913 | 0.983 | 0.543 | 0.970 | 0.952 |
| **Gaussianized Features – PCA (m=8)** | | | | | | |
| **Full - Cov** | 0.345 | 0.870 | 0.867 | 0.385 | 0.932 | 0.892 |
| **Diag -Cov** | 0.427 | 0.945 | 0.927 | 0.458 | 0.982 | 0.900 |
| **Tied Full-Cov** | 0.434 | 0.987 | 0.853 | 0.359 | 0.843 | 0.827 |
| **Tied Diag- Cov** | 0.521 | 0.913 | 0.983 | 0.543 | 0.970 | 0.952 |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Raw Features** | | | |
| Log Reg (**λ= , )** | 0.559 | 0.969 | 0.934 |
| Log Reg (**λ= , )** | 0.584 | 0.977 | 0.917 |
| Log Reg (**λ= , )** | 0.556 | 0.963 | 0.952 |
| **Gaussianized features** | | | |
| Log Reg (**λ= , )** | 0.371 | 0.854 | 0.818 |
| Log Reg (**λ= , )** | 0.375 | 0.914 | 0.827 |
| Log Reg (**λ= , )** | 0.372 | 0.791 | 0.986 |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* MVG TABLE \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

------> pi = 0.5

\*\*\* minDCF - RAW FEATURES - NO PCA \*\*\*

[Single Fold] - MVG: 0.34620265521280746

[5-Folds] - MVG: 0.3433931484502447

[Single Fold] - MVG with Diag cov: 0.5275771183131589

[5- Fold] - MVG with Diag cov: 0.5481239804241436

[Single Fold] - Tied MVG: 0.35554959000390474

[5- Fold] - Tied MVG: 0.35970636215334423

[Single Fold] - Tied MVG with Diag Cov: 0.5214271768840297

[5 Fold] - Tied MVG with Diag Cov: 0.5432300163132138

\*\*\* minDCF - RAW FEATURES - PCA (m=9) \*\*\*

[Single Fold] - MVG: 0.4551810816087466

[5-Folds] - MVG: 0.49592169657422513

[Single Fold] - MVG with Diag cov: 0.541207048028114

[5- Fold] - MVG with Diag cov: 0.5709624796084829

[Single Fold] - Tied MVG: 0.5556179226864506

[5- Fold] - Tied MVG: 0.6011419249592169

[Single Fold] - Tied MVG with Diag Cov: 0.5684425029285435

[5 Fold] - Tied MVG with Diag Cov: 0.598694942903752

\*\*\* minDCF - RAW FEATURES - PCA (m=8) \*\*\*

[Single Fold] - MVG: 0.4909825263568918

[5-Folds] - MVG: 0.5375203915171289

[Single Fold] - MVG with Diag cov: 0.6061108941819602

[5- Fold] - MVG with Diag cov: 0.6117455138662317

[Single Fold] - Tied MVG: 0.5850131784459196

[5- Fold] - Tied MVG: 0.636215334420881

[Single Fold] - Tied MVG with Diag Cov: 0.5991678055447092

[5 Fold] - Tied MVG with Diag Cov: 0.6394779771615008

\*\*\* minDCF - GAUSSIANIZED FEATURES - NO PCA \*\*\*

[Single Fold] - MVG: 0.27701581413510346

[5-Folds] - MVG: 0.3066884176182708

[Single Fold] - MVG with Diag cov: 0.4976571651698555

[5- Fold] - MVG with Diag cov: 0.5163132137030996

[Single Fold] - Tied MVG: 0.3558180398281921

[5- Fold] - Tied MVG: 0.3792822185970636

[Single Fold] - Tied MVG with Diag Cov: 0.529468469347911

[5 Fold] - Tied MVG with Diag Cov: 0.5432300163132137

\*\*\* minDCF - GAUSSIANIZED FEATURES - PCA m=9 \*\*\*

[Single Fold] - MVG: 0.3007858258492776

[5-Folds] - MVG: 0.3368678629690049

[Single Fold] - MVG with Diag cov: 0.3921441819601718

[5- Fold] - MVG with Diag cov: 0.40783034257748774

[Single Fold] - Tied MVG: 0.42127098789535333

[5- Fold] - Tied MVG: 0.42414355628058725

[Single Fold] - Tied MVG with Diag Cov: 0.41352254978524017

[5 Fold] - Tied MVG with Diag Cov: 0.4192495921696574

\*\*\* minDCF - GAUSSIANIZED FEATURES - PCA m=8 \*\*\*

[Single Fold] - MVG: 0.34592200312377974

[5-Folds] - MVG: 0.38580750407830344

[Single Fold] - MVG with Diag cov: 0.42793342444357674

[5- Fold] - MVG with Diag cov: 0.45840130505709625

[Single Fold] - Tied MVG: 0.4340955681374463

[5- Fold] - Tied MVG: 0.47716150081566067

[Single Fold] - Tied MVG with Diag Cov: 0.4258102303787583

[5 Fold] - Tied MVG with Diag Cov: 0.4804241435562806

------> pi = 0.9

\*\*\* minDCF - RAW FEATURES - NO PCA \*\*\*

[Single Fold] - MVG: 0.8245314330339711

[5-Folds] - MVG: 0.9061990212071779

[Single Fold] - MVG with Diag cov: 0.9375122022647404

[5- Fold] - MVG with Diag cov: 0.9730831973898859

[Single Fold] - Tied MVG: 0.8365384615384616

[5- Fold] - Tied MVG: 0.8278955954323002

[Single Fold] - Tied MVG with Diag Cov: 0.9831730769230769

[5 Fold] - Tied MVG with Diag Cov: 0.9526916802610115

\*\*\* minDCF - RAW FEATURES - PCA (m=9) \*\*\*

[Single Fold] - MVG: 0.8846275868801249

[5-Folds] - MVG: 0.9755301794453507

[Single Fold] - MVG with Diag cov: 0.9471153846153845

[5- Fold] - MVG with Diag cov: 0.9885807504078302

[Single Fold] - Tied MVG: 0.9399160484185866

[5- Fold] - Tied MVG: 0.936378466557912

[Single Fold] - Tied MVG with Diag Cov: 0.918281433033971

[5 Fold] - Tied MVG with Diag Cov: 0.9241435562805873

\*\*\* minDCF - RAW FEATURES - PCA (m=8) \*\*\*

[Single Fold] - MVG: 0.9303250683326826

[5-Folds] - MVG: 0.9518760195758565

[Single Fold] - MVG with Diag cov: 0.9663705583756346

[5- Fold] - MVG with Diag cov: 0.9632952691680261

[Single Fold] - Tied MVG: 0.9471153846153845

[5- Fold] - Tied MVG: 0.9738988580750406

[Single Fold] - Tied MVG with Diag Cov: 0.9543269230769231

[5 Fold] - Tied MVG with Diag Cov: 0.9681892332789559

\*\*\* minDCF - GAUSSIANIZED FEATURES - NO PCA \*\*\*

[Single Fold] - MVG: 0.8245314330339711

[5-Folds] - MVG: 0.871125611745514

[Single Fold] - MVG with Diag cov: 0.9639423076923077

[5- Fold] - MVG with Diag cov: 0.9755301794453507

[Single Fold] - Tied MVG: 0.9062988090589612

[5- Fold] - Tied MVG: 0.9282218597063621

[Single Fold] - Tied MVG with Diag Cov: 0.9927884615384616

[5 Fold] - Tied MVG with Diag Cov: 0.9951060358890702

\*\*\* minDCF - GAUSSIANIZED FEATURES - PCA m=9 \*\*\*

[Single Fold] - MVG: 0.8582584927762592

[5-Folds] - MVG: 0.898042414355628

[Single Fold] - MVG with Diag cov: 0.8990750683326825

[5- Fold] - MVG with Diag cov: 0.8996737357259381

[Single Fold] - Tied MVG: 0.903882760640375

[5- Fold] - Tied MVG: 0.9690048939641108

[Single Fold] - Tied MVG with Diag Cov: 0.9086782506833267

[5 Fold] - Tied MVG with Diag Cov: 0.9730831973898858

\*\*\* minDCF - GAUSSIANIZED FEATURES - PCA m=8 \*\*\*

[Single Fold] - MVG: 0.8678738773916441

[5-Folds] - MVG: 0.8923327895595433

[Single Fold] - MVG with Diag cov: 0.9278968176493556

[5- Fold] - MVG with Diag cov: 0.900489396411093

[Single Fold] - Tied MVG: 0.8534019914096056

[5- Fold] - Tied MVG: 0.9208809135399674

[Single Fold] - Tied MVG with Diag Cov: 0.8413827606403749

[5 Fold] - Tied MVG with Diag Cov: 0.9184339314845026

------> pi = 0.1

\*\*\* minDCF - RAW FEATURES - NO PCA \*\*\*

[Single Fold] - MVG: 0.7667415072237407

[5-Folds] - MVG: 0.7952691680261011

[Single Fold] - MVG with Diag cov: 0.9112895353377588

[5- Fold] - MVG with Diag cov: 0.9624796084828711

[Single Fold] - Tied MVG: 0.8188329754002344

[5- Fold] - Tied MVG: 0.8433931484502446

[Single Fold] - Tied MVG with Diag Cov: 0.913949629051152

[5 Fold] - Tied MVG with Diag Cov: 0.9706362153344209

\*\*\* minDCF - RAW FEATURES - PCA (m=9) \*\*\*

[Single Fold] - MVG: 0.9660410972276454

[5-Folds] - MVG: 0.9804241435562806

[Single Fold] - MVG with Diag cov: 0.9633810035142523

[5- Fold] - MVG with Diag cov: 1.0

[Single Fold] - Tied MVG: 0.9746192893401016

[5- Fold] - Tied MVG: 0.9624796084828711

[Single Fold] - Tied MVG with Diag Cov: 0.9671270987895354

[5 Fold] - Tied MVG with Diag Cov: 0.9600326264274062

\*\*\* minDCF - RAW FEATURES - PCA (m=8) \*\*\*

[Single Fold] - MVG: 0.9708731940648185

[5-Folds] - MVG: 0.99836867862969

[Single Fold] - MVG with Diag cov: 0.9925078094494338

[5- Fold] - MVG with Diag cov: 1.0

[Single Fold] - Tied MVG: 0.963625048809059

[5- Fold] - Tied MVG: 0.9779771615008157

[Single Fold] - Tied MVG with Diag Cov: 0.9847715736040609

[5 Fold] - Tied MVG with Diag Cov: 0.9853181076672104

\*\*\* minDCF - GAUSSIANIZED FEATURES - NO PCA \*\*\*

[Single Fold] - MVG: 0.7918781725888325

[5-Folds] - MVG: 0.7724306688417617

[Single Fold] - MVG with Diag cov: 0.901381296368606

[5- Fold] - MVG with Diag cov: 0.9274061990212071

[Single Fold] - Tied MVG: 0.8898989652479501

[5- Fold] - Tied MVG: 0.8107667210440456

[Single Fold] - Tied MVG with Diag Cov: 0.913949629051152

[5 Fold] - Tied MVG with Diag Cov: 0.9584013050570962

\*\*\* minDCF - GAUSSIANIZED FEATURES - PCA m=9 \*\*\*

[Single Fold] - MVG: 0.8206511128465444

[5-Folds] - MVG: 0.8050570962479608

[Single Fold] - MVG with Diag cov: 0.8343054470909801

[5- Fold] - MVG with Diag cov: 0.8841761827079934

[Single Fold] - Tied MVG: 0.8978792463881297

[5- Fold] - Tied MVG: 0.8882544861337685

[Single Fold] - Tied MVG with Diag Cov: 0.9016253416634127

[5 Fold] - Tied MVG with Diag Cov: 0.8947797716150081

\*\*\* minDCF - GAUSSIANIZED FEATURES - PCA m=8 \*\*\*

[Single Fold] - MVG: 0.8706803982819212

[5-Folds] - MVG: 0.932300163132137

[Single Fold] - MVG with Diag cov: 0.9454924834049201

[5- Fold] - MVG with Diag cov: 0.9820554649265906

[Single Fold] - Tied MVG: 0.9874316673174541

[5- Fold] - Tied MVG: 0.9853181076672105

[Single Fold] - Tied MVG with Diag Cov: 0.9925078094494338

[5 Fold] - Tied MVG with Diag Cov: 0.9877650897226754