Hidden Units | Hidden Layers | batch size | Train Error | Val Error

4|1|8|0.33082500100135803|0.3325636386871338

4|2|8|0.31287360191345215|0.31250712275505066

4|3|8|0.33398008346557617|0.3371880054473877

8|1|8|0.2985675036907196|0.2989042103290558

8|2|8|0.2735802233219147|0.2768003046512604

8|3|8|0.2779555022716522|0.27648988366127014

16|1|8|0.27128010988235474|0.25909140706062317

16|2|8|0.2720728814601898|0.27584609389305115

16|3|8|0.27872541546821594|0.27853143215179443

32|1|8|0.27028030157089233|0.26241230964660645

32|2|8|0.2731598913669586|0.2635069787502289

32|3|8|0.26182571053504944|0.2781226336956024

64|1|8|0.2651313841342926|0.2537200450897217

64|2|8|0.27314797043800354|0.2702832520008087

64|3|8|0.2729179859161377|0.2559235990047455

128|1|8|0.2718746066093445|0.25893208384513855

128|2|8|0.27016592025756836|0.2771044373512268

128|3|8|0.2835862934589386|0.2795378267765045

256|1|8|0.2776346504688263|0.2803051769733429

256|2|8|0.27678555250167847|0.29161307215690613

256|3|8|0.28245705366134644|0.28546586632728577

4|1|16|0.3131285309791565|0.3133125603199005

4|2|16|0.3202950954437256|0.3152156472206116

4|3|16|0.3050648272037506|0.3019152879714966

8|1|16|0.30202096700668335|0.30073508620262146

8|2|16|0.2787800431251526|0.27181869745254517

8|3|16|0.28359371423721313|0.2860650420188904

16|1|16|0.2704710364341736|0.25856348872184753

16|2|16|0.26971063017845154|0.27560487389564514

16|3|16|0.2750324606895447|0.27251723408699036

32|1|16|0.26695486903190613|0.26202088594436646

32|2|16|0.2713097631931305|0.2635970115661621

32|3|16|0.2695472538471222|0.2620444893836975

64|1|16|0.2635738253593445|0.26028159260749817

64|2|16|0.26616165041923523|0.2652971148490906

64|3|16|0.26950299739837646|0.27333030104637146

128|1|16|0.26754093170166016|0.27973586320877075

128|2|16|0.2603903114795685|0.26829326152801514

128|3|16|0.2695222795009613|0.26283353567123413

256|1|16|0.2701146602630615|0.2925657331943512

256|2|16|0.27314627170562744|0.27606379985809326

256|3|16|0.26935485005378723|0.2887306809425354

4|1|32|0.3171898126602173|0.3130978047847748

4|2|32|0.3207753002643585|0.31962472200393677

4|3|32|0.33148330450057983|0.33300650119781494

8|1|32|0.28630679845809937|0.28082743287086487

8|2|32|0.3036440908908844|0.2978507876396179

8|3|32|0.2959993779659271|0.2874097228050232

16|1|32|0.2712787687778473|0.2623279094696045

16|2|32|0.25713762640953064|0.25720736384391785

16|3|32|0.2680782377719879|0.267990380525589

32|1|32|0.2711259126663208|0.27003243565559387

32|2|32|0.25892966985702515|0.2532423436641693

32|3|32|0.2625122666358948|0.25811588764190674

64|1|32|0.2658176124095917|0.2604084610939026

64|2|32|0.2622761130332947|0.2555912733078003

64|3|32|0.2610677182674408|0.25081121921539307

128|1|32|0.26375487446784973|0.2615131437778473

128|2|32|0.2599760591983795|0.2638983130455017

128|3|32|0.26986366510391235|0.2685777544975281

256|1|32|0.26689809560775757|0.25817441940307617

256|2|32|0.2649701237678528|0.2657738924026489

256|3|32|0.26753148436546326|0.2 690858244895935

4|1|64|0.318815141916275|0.3181307017803192

4|2|64|0.3416261672973633|0.3494209051132202

4|3|64|0.31065940856933594|0.3087400197982788

8|1|64|0.3015083968639374|0.3028610944747925

8|2|64|0.29792651534080505|0.2907477915287018

8|3|64|0.29142242670059204|0.27864888310432434

16|1|64|0.28925174474716187|0.286043643951416

16|2|64|0.2739054560661316|0.26314863562583923

16|3|64|0.2635217607021332|0.255971223115921

32|1|64|0.273806095123291|0.26453056931495667

32|2|64|0.2650522291660309|0.25752362608909607

32|3|64|0.2611343264579773|0.2580972909927368

64|1|64|0.27533355355262756|0.266070693731308

64|2|64|0.25636592507362366|0.25841185450553894

64|3|64|0.2580936551094055|0.25464802980422974

128|1|64|0.2602343261241913|0.2583409249782562

128|2|64|0.2630768120288849|0.2584816813468933

128|3|64|0.2536725401878357|0.25897133350372314

256|1|64|0.2610704302787781|0.25130966305732727

256|2|64|0.2599808871746063|0.2584860026836395

256|3|64|0.26149865984916687|0.2686880826950073

4|1|128|0.3332100212574005|0.3338044285774231

4|2|128|0.33886048197746277|0.33952516317367554

4|3|128|0.3126612603664398|0.31307101249694824

8|1|128|0.3301161527633667|0.3255872130393982

8|2|128|0.3059074282646179|0.30179524421691895

8|3|128|0.3019382655620575|0.2987487316131592

16|1|128|0.288680762052536|0.28111228346824646

16|2|128|0.2794349491596222|0.2642457187175751

16|3|128|0.265913188457489|0.25031352043151855

32|1|128|0.27490711212158203|0.26461341977119446

32|2|128|0.2767326235771179|0.2636439800262451

32|3|128|0.26386135816574097|0.2544276714324951

64|1|128|0.26720499992370605|0.2650110125541687

64|2|128|0.2583693265914917|0.25166410207748413

64|3|128|0.2590634524822235|0.2589136064052582

128|1|128|0.27524256706237793|0.265798419713974

128|2|128|0.2635217607021332|0.258036345243454

128|3|128|0.2646746337413788|0.26423531770706177

256|1|128|0.26362743973731995|0.2559407353401184

256|2|128|0.26379191875457764|0.25835350155830383

256|3|128|0.2577897310256958|0.26082172989845276

4|1|256|0.34588077664375305|0.3533141016960144

4|2|256|0.3374822437763214|0.34659716486930847

4|3|256|0.3362879455089569|0.33796387910842896

8|1|256|0.30866965651512146|0.30667704343795776

8|2|256|0.3037603795528412|0.29704031348228455

8|3|256|0.30338215827941895|0.30392009019851685

16|1|256|0.29463592171669006|0.2881465554237366

16|2|256|0.2969386577606201|0.29108914732933044

16|3|256|0.2803793251514435|0.264991819858551

32|1|256|0.2865123450756073|0.274897962808609

32|2|256|0.266323447227478|0.2558720111846924

32|3|256|0.2755587697029114|0.27027377486228943

64|1|256|0.2807420790195465|0.27395349740982056

64|2|256|0.2578149437904358|0.25226008892059326

64|3|256|0.2664680778980255|0.26058483123779297

128|1|256|0.2814205288887024|0.27066344022750854

128|2|256|0.26613691449165344|0.26001623272895813

128|3|256|0.25978872179985046|0.24876312911510468

256|1|256|0.26919370889663696|0.2574775516986847

256|2|256|0.2637590169906616|0.2545967698097229

256|3|256|0.25867578387260437|0.2656291127204895

Classifier:

Classifier | Train Error | Val Error

Adam|0.35015496611595154|0.3435305058956146

SGD|0.47726893424987793|0.4938180148601532

momSGD|0.47609931230545044|0.47675368189811707

Learning Rate:

Learning Rate | Scheduled | Train Error | Val Error

0.0001|no|0.46112096309661865|0.4738997220993042

0.0005|no|0.39201945066452026|0.3937395215034485

0.001|no|0.33828115463256836|0.3236008286476135

0.005|no|0.33473309874534607|0.3078063726425171

0.01|no|0.3081357777118683|0.31248775124549866

0.05|no|0.4577089846134186|0.4080822765827179

0.1|no|1.4339910745620728|1.4161239862442017

0.5|no|1.7204712629318237|3.653191566467285

0.0001|yes|0.5286689400672913|0.533204197883606

0.0005|yes|0.43489792943000793|0.441316157579422

0.001|yes|0.4001670181751251|0.4014017581939697

0.005|yes|0.2754254937171936|0.2729010581970215

0.01|yes|0.2668827474117279|0.2633827328681946

0.05|yes|0.29367420077323914|0.28484418988227844

0.1|yes|1.3886232376098633|1.3357750177383423

0.5|yes|1.6133958101272583|1.5371218919754028