**Benchmark 20 epochs, code 00000:**

**Evaluation complete on BiseNet with 20 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 27.12%

Per-class IoU: [1.29396062e-02 1.10806129e-02 4.88728772e-01 2.17539390e-02

2.43266159e-02 1.14465397e-02 5.29163551e-03 1.16769772e-02

3.28916944e-01 2.20406956e-02 3.26713213e-01 1.67865740e-02

3.59051131e-04 1.82556510e-01 4.82167438e-03 1.38982185e-03

0.00000000e+00 0.00000000e+00 6.15631247e-06]

Mean IoU: 0.07741238623337285

Mean Latency: 399.60 ms

Latency Std Dev: 39.57 ms

Mean FPS: 2.52

FPS Std Dev: 0.20

**color jitter augmentation, code 00001**

**brightness=0.2, contrast=0.2, saturation=0.2, hue=0.1**

**Evaluation complete on BiseNet with 20 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 34.49%

Per-class IoU: [6.32121792e-02 2.93126088e-02 5.19121723e-01 5.02700617e-02

2.87615497e-02 4.11669399e-02 1.07250126e-02 8.54245017e-03

3.88007182e-01 2.90221837e-02 6.80320899e-01 5.95378699e-02

6.60434588e-04 1.68878914e-01 7.67162446e-03 2.07282571e-03

1.18596258e-02 0.00000000e+00 6.15625941e-06]

Mean IoU: 0.11048159157923487

Mean Latency: 386.17 ms

Latency Std Dev: 32.41 ms

Mean FPS: 2.60

FPS Std Dev: 0.18

Total FLOPs: 25.78 GFLOPs

**Color jitter augmentation, code 00001 (high parameters)**

**brightness=0.4, contrast=0.4, saturation=0.3, hue=0.1**

**Evaluation complete on BiseNet with 20 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 29.70%

Per-class IoU: [7.22155234e-02 1.73557777e-03 4.09620002e-01 5.14505116e-02

2.25054754e-02 5.99266227e-02 1.41307183e-02 3.45746849e-02

3.90916234e-01 2.66719764e-02 6.61736350e-01 9.98657917e-02

2.04344934e-04 2.22118010e-01 8.25625837e-03 2.48909767e-03

8.05309030e-03 0.00000000e+00 0.00000000e+00]

Mean IoU: 0.10981422473326634

Mean Latency: 470.21 ms

Latency Std Dev: 95.88 ms

Mean FPS: 2.19

FPS Std Dev: 0.33

Total FLOPs: 25.78 GFLOPs

**Color jitter augmentation, code 00001 (high brightness)**

**brightness=0.4, contrast=0.2, saturation=0.2, hue=0.1**

**Evaluation complete on BiseNet with 20 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 35.87%

Per-class IoU: [0.04155187 0.02658854 0.5790614 0.04984675 0.02936625 0.04590613

0.01526224 0.00578083 0.56650511 0.05851419 0.63056369 0.04122816

0. 0.21740715 0.00989487 0.00317381 0.00318412 0.

0. ]

Mean IoU: 0.12230711062859691

Mean Latency: 587.30 ms

Latency Std Dev: 177.46 ms

Mean FPS: 1.84

FPS Std Dev: 0.50

Total FLOPs: 25.78 GFLOPs

**Color jitter augmentation, code 00001 (high contrast)**

**brightness=0.2, contrast=0.4, saturation=0.2, hue=0.1**

**Evaluation complete on BiseNet with 20 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 37.37%

Per-class IoU: [0.06448023 0.05215301 0.53556466 0.06320633 0.07026083 0.05535934

0.01291593 0.01477126 0.47732354 0.04217991 0.60420723 0.19958541

0. 0.12479043 0.00995851 0.003179 0.00290251 0.

0. ]

Mean IoU: 0.12278095345924542

Mean Latency: 481.03 ms

Latency Std Dev: 147.76 ms

Mean FPS: 2.24

FPS Std Dev: 0.54

Total FLOPs: 25.78 GFLOPs

**Color jitter augmentation, code 00001 (high saturation)**

**brightness=0.2, contrast=0.2, saturation=0.3, hue=0.1**

**Evaluation complete on BiseNet with 20 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 24.53%

Per-class IoU: [0.03065627 0.00694433 0.41302847 0.02442938 0.0302423 0.0311036

0.00132098 0. 0.31203534 0.00896091 0.55443639 0.06346863

0. 0.188477 0.00477751 0.00385673 0. 0.

0. ]

Mean IoU: 0.08809146510616364

Mean Latency: 463.35 ms

Latency Std Dev: 80.74 ms

Mean FPS: 2.20

FPS Std Dev: 0.28

Total FLOPs: 25.78 GFLOPs

**Color jitter augmentation, code 00001 (high brightness and contrast) BEST**

**brightness=0.4, contrast=0.4, saturation=0.2, hue=0.1**

**Evaluation complete on BiseNet with 20 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 34.21%

Per-class IoU: [0.05114144 0.04472716 0.53462583 0.02003839 0.01426696 0.03895041

0.0180225 0.02080735 0.45351313 0.03795158 0.702745 0.0916633

0. 0.31640168 0.00663009 0.00186405 0.0066388 0.

0. ]

Mean IoU: 0.12420987729218282

Mean Latency: 431.05 ms

Latency Std Dev: 71.05 ms

Mean FPS: 2.37

FPS Std Dev: 0.30

Total FLOPs: 25.78 GFLOPs

**Augmentation Code 00010**

**Evaluation complete on BiseNet with 20 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 36.05%

Per-class IoU: [0.01901113 0.00710372 0.57145873 0.02105769 0.01163333 0.04533657

0.00825538 0.00401521 0.42229383 0.0011101 0.73702223 0.11069278

0. 0.12523995 0.01387835 0.00220275 0.00398968 0.

0. ]

Mean IoU: 0.11075270701975083

Mean Latency: 644.70 ms

Latency Std Dev: 52.05 ms

Mean FPS: 1.56

FPS Std Dev: 0.13

Total FLOPs: 25.78 GFLOPs

**Code 00100**

**Evaluation complete on BiseNet with 20 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 35.33%

Per-class IoU: [1.10961155e-01 3.39359203e-02 4.32677956e-01 3.20895605e-02

2.36086623e-02 2.25244479e-02 7.78784340e-03 1.80795305e-02

3.82553245e-01 1.40123067e-02 7.13048840e-01 7.74244801e-02

1.87906937e-02 2.95486696e-01 6.96030299e-03 1.47530180e-03

3.64595910e-04 0.00000000e+00 0.00000000e+00]

Mean IoU: 0.11535692306494445

Mean Latency: 528.37 ms

Latency Std Dev: 143.08 ms

Mean FPS: 1.99

FPS Std Dev: 0.37

Total FLOPs: 25.78 GFLOPs

**Code 01000**

**Evaluation complete on BiseNet with 20 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 32.98%

Per-class IoU: [0.04285086 0.01209027 0.51600062 0.04114813 0.04288461 0.03790224

0.00726591 0.01717764 0.50713564 0.03331371 0.7457787 0.09503359

0.0027833 0.17248272 0.007452 0.00369493 0. 0.00612113

0. ]

Mean IoU: 0.12058505309489756

Mean Latency: 420.80 ms

Latency Std Dev: 26.88 ms

Mean FPS: 2.39

FPS Std Dev: 0.15

Total FLOPs: 25.78 GFLOPs

**Code 10000**

**Evaluation complete on BiseNet with 20 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 29.70%

Per-class IoU: [7.22155234e-02 1.73557777e-03 4.09620002e-01 5.14505116e-02

2.25054754e-02 5.99266227e-02 1.41307183e-02 3.45746849e-02

3.90916234e-01 2.66719764e-02 6.61736350e-01 9.98657917e-02

2.04344934e-04 2.22118010e-01 8.25625837e-03 2.48909767e-03

8.05309030e-03 0.00000000e+00 0.00000000e+00]

Mean IoU: 0.10981422473326634

Mean Latency: 470.21 ms

Latency Std Dev: 95.88 ms

Mean FPS: 2.19

FPS Std Dev: 0.33

Total FLOPs: 25.78 GFLOPs

**no augmentation 50 epochs, code 00000**

**Evaluation complete on BiseNet with 50 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 36.89%

Per-class IoU: [8.57311224e-02 5.18459231e-02 4.51855492e-01 2.22342185e-02

1.69965691e-02 2.70522922e-02 1.23923805e-02 1.00590286e-02

3.48610157e-01 2.70676885e-02 2.31724426e-01 6.77699552e-02

0.00000000e+00 2.93104882e-01 6.58546619e-03 3.39944047e-03

2.12238071e-04 0.00000000e+00 0.00000000e+00]

Mean IoU: 0.08719164635654282

Mean Latency: 625.79 ms

Latency Std Dev: 94.06 ms

Mean FPS: 1.63

FPS Std Dev: 0.23

Total FLOPs: 25.78 GFLOPs

**Augmentation colorjitter, code 00001 (high brightness and contrast, best), 50 epochs**

**Evaluation complete on BiseNet with 50 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 37.44%

Per-class IoU: [6.90911214e-02 6.68420697e-02 4.98966912e-01 2.92962771e-02

1.44252183e-02 6.73860989e-02 2.15915952e-02 3.08114773e-02

3.75495009e-01 1.89647412e-02 5.21552907e-01 9.07018144e-02

0.00000000e+00 2.18286410e-01 6.86225423e-03 4.92439763e-04

2.83608654e-03 0.00000000e+00 0.00000000e+00]

Mean IoU: 0.10703170691635826

Mean Latency: 667.21 ms

Latency Std Dev: 108.95 ms

Mean FPS: 1.54

FPS Std Dev: 0.25

Total FLOPs: 25.78 GFLOPs

**code 01000 50 epochs**

**Evaluation complete on BiseNet with 50 epochs, 2 batch size, and balanced=False**

Pixel Accuracy: 39.42%

Per-class IoU: [1.22685741e-01 1.20728308e-01 5.26527615e-01 3.52352079e-02

2.27385497e-02 5.89589467e-02 1.24231209e-02 3.08205236e-02

4.82739569e-01 4.27847903e-02 5.24481818e-01 1.18076749e-01

0.00000000e+00 2.39568846e-01 6.34446114e-03 3.04026498e-04

0.00000000e+00 0.00000000e+00 5.80997445e-04]

Mean IoU: 0.12342101423916117

Mean Latency: 627.37 ms

Latency Std Dev: 185.69 ms

Mean FPS: 1.69

FPS Std Dev: 0.34

Total FLOPs: 25.78 GFLOPs

**Augmentation 01001, 50 epochs**

**Evaluation complete on BiseNet with 50 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 42.60%

Per-class IoU: [0.11015051 0.05075859 0.57760741 0.04226971 0.01275291 0.06554307

0.01381756 0.02472608 0.54031229 0.03376296 0.52368096 0.16970387

0. 0.15475533 0.01084988 0.00344974 0. 0.00250888

0. ]

Mean IoU: 0.12298156659489261

Mean Latency: 567.78 ms

Latency Std Dev: 109.48 ms

Mean FPS: 1.79

FPS Std Dev: 0.17

Total FLOPs: 25.78 GFLOPs

**Augmentation 11111 50 epochs**

**Evaluation complete on BiseNet with 50 epochs, 2 batch size, and balanced=False.**

Pixel Accuracy: 48.54%

Per-class IoU: [0.14791636 0.19114669 0.56913367 0.04662874 0.00712613 0.0774118

0.01711167 0.03973435 0.64205121 0.07590303 0.72613747 0.06180124

0.00238802 0.20349663 0.00733644 0. 0. 0.

0. ]

Mean IoU: 0.1481749183953614

Mean Latency: 669.58 ms

Latency Std Dev: 151.40 ms

Mean FPS: 1.57

FPS Std Dev: 0.34

Total FLOPs: 25.78 GFLOPs

**Augmentation 11111 50 epochs 4 batches and high resolution**

**Evaluation complete on BiseNet with 50 epochs, 4 batch size, and balanced=False.**

Pixel Accuracy: 65.76%

Per-class IoU: [5.33668446e-01 1.34401266e-01 6.62002607e-01 6.21170660e-02

1.21311842e-02 8.69479197e-02 1.76211262e-02 8.18865372e-02

7.22727182e-01 4.60767063e-02 7.52713605e-01 1.93567328e-01

4.37299371e-03 5.25579055e-01 3.93115866e-02 1.79370709e-02

0.00000000e+00 3.68942845e-03 3.90265042e-04]

Mean IoU: 0.20511270385194644

Mean Latency: 397.52 ms

Latency Std Dev: 31.92 ms

Mean FPS: 2.53

FPS Std Dev: 0.23