

# Bi-PointFlowNet

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9차 보고

# Experiment – WeightNet4 ( $C_{mid}=4$ , $K=16$ )

	Baseline	Weightnet4
FLOPs	13.3G	7.37G(45% ↓)
Param	7.98M	2.73M(66% ↓)

**WeightNet4( $C_{mid}=4$ ,  $K=16$ )**

Loss Function	Dataset	EPE3D(↓)	ACC3DS(↑)	ACC3DR(↑)	Outliers3D(↓)	EPE2D(↓)	ACC2D(↑)
Scratch	FlyingThings	0.0325m	0.902	0.974	0.163	1.833	0.915
	KITTI	0.0319m	0.923	0.964	0.140	1.118	0.949
Hint Training Loss	FlyingThings	0.0317m	0.905	0.975	0.159	1.755	0.917
	KITTI	0.0325m	0.929	0.961	0.137	1.136	0.946
Bi-Directional Hint Training Loss	FlyingThings	0.0305m	0.910	0.977	0.155	1.667	0.923
	KITTI	0.0360m	0.906	0.951	0.151	1.219	0.935
Bridge Hint Training Loss (Mix)	FlyingThings	0.0306m	0.910	0.977	0.153	1.675	0.925
	KITTI	0.0350m	0.908	0.957	0.146	1.237	0.936
Bridge Hint Training Loss (No Mix)	FlyingThings	<b>0.0296m</b>	<b>0.914</b>	<b>0.978</b>	<b>0.148</b>	<b>1.644</b>	<b>0.926</b>
	KITTI	<b>0.0297m</b>	<b>0.923</b>	<b>0.965</b>	<b>0.134</b>	<b>1.062</b>	<b>0.953</b>

# Experiment – WeightNet8\_vote ( $C_{mid}=8, K=16$ )

WeightNet8( $C_{mid}=8, K=16$ )

	Baseline	Weightnet8
FLOPs	13.3G	9.36G(31% ↓)
Param	7.98M	4.47M(44% ↓)

Loss Function	Dataset	EPE3D(↓)	ACC3DS(↑)	ACC3DR(↑)	Outliers3D(↓)	EPE2D(↓)	ACC2D(↑)
Scratch	FlyingThings	0.0280m	0.921	0.979	0.139	1.606	0.931
	KITTI	0.0284m	0.926	0.968	0.132	1.026	0.952
Bi-Directional Hint Training Loss	FlyingThings	0.0282m	0.924	0.980	0.136	1.642	0.934
	KITTI	0.0292m	0.923	0.961	0.138	0.972	0.953
Bi-Directional Hint Training Loss + Scratch	FlyingThings	<b>0.0266m</b>	<b>0.932</b>	<b>0.982</b>	<b>0.129</b>	<b>1.492</b>	<b>0.941</b>
	KITTI	0.0286m	0.930	0.965	0.134	1.002	0.954
Bridge Hint Training Loss (No Mix) + Scratch	FlyingThings	학습중..					
	KITTI						

WeightNet8\_vote( $C_{mid}=8, K=16$ )

	Baseline	Weightnet8 vote
FLOPs	13.3G	9.42G(30% ↓)
Param	7.98M	4.49M(44% ↓)

Loss Function	Dataset	EPE3D(↓)	ACC3DS(↑)	ACC3DR(↑)	Outliers3D(↓)	EPE2D(↓)	ACC2D(↑)
Scratch	FlyingThings	0.0313m	0.910	0.975	0.154	-	-
	KITTI	0.0316m	0.916	0.959	0.142	-	-
Bi-Direction Hint Training Loss + Scratch	FlyingThings	<b>0.0268m</b>	<b>0.929</b>	<b>0.982</b>	<b>0.130</b>	<b>1.484</b>	<b>0.940</b>
	KITTI	<b>0.0270m</b>	<b>0.930</b>	<b>0.966</b>	<b>0.133</b>	<b>0.971</b>	<b>0.956</b>

# Experiment – Appendix

**Baseline**

Dataset	EPE3D(↓)	ACC3DS(↑)	ACC3DR(↑)	Outliers3D(↓)	EPE2D(↓)	ACC2D(↑)
FlyingThings	0.0288m	0.918	0.978	0.143	1.582	0.930
KITTI	0.0302m	0.920	0.962	0.136	1.061	0.948

