cases	doc_1		doc_2		decision	id
	authors	• Xianzhi Du • Mostafa El-Khamy • Jungwon Lee • L. Davis	**authors**	• Xianzhi Du • Mostafa El-Khamy • Jungwon Lee • Larry S. Davis	DUPLICATES	61
	title	Fused DNN: A Deep Neural Network Fusion Approach to Fast and Robust Pedestrian Detection	**title**	Fused DNN: A deep neural network fusion approach to fast and robust pedestrian detection		
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	id	id-96315917001454920	**id**	id-4450005255090729291		
	abstract	We propose a deep neural network fusion architecture for fast and robust pedestrian detection. The proposed network fusion architecture allows for parallel processing of multiple networks for speed. A single shot deep convolutional network is trained as a object detector to generate all possible pedestrian candidates of different sizes and occlusions. This network outputs a large variety of pedestrian candidates to cover the majority of ground-truth pedestrians while also introducing a large number of false positives. Next, multiple deep neural networks are used in parallel for further refinement of these pedestrian candidates. We introduce a soft-rejection based network fusion method to fuse the soft metrics from all networks together to generate the final confidence scores. Our method performs better than existing state-of-the-arts, especially when detecting small-size and occluded pedestrians. Furthermore, we propose a method for integrating pixel-wise semantic segmentation network into the network fusion architecture as a reinforcement to the pedestrian detector. The approach outperforms state-of-the-art methods on most protocols on Caltech Pedestrian dataset, with significant boosts on several protocols. It is also faster than all other methods.	**abstract**	We propose a deep neural network fusion architecture for fast and robust pedestrian detection. The proposed network fusion architecture allows for parallel processing of multiple networks for speed. A single shot deep convolutional network is trained as a object detector to generate all possible pedestrian candidates of different sizes and occlusions. This network outputs a large variety of pedestrian candidates to cover the majority of ground-truth pedestrians while also introducing a large number of false positives. Next, multiple deep neural networks are used in parallel for further refinement of these pedestrian candidates. We introduce a soft-rejection based network fusion method to fuse the soft metrics from all networks together to generate the final confidence scores. Our method performs better than existing state-of-the-arts, especially when detecting small-size and occluded pedestrians. Furthermore, we propose a method for integrating pixel-wise semantic segmentation network into the network fusion architecture as a reinforcement to the pedestrian detector. The approach outperforms state-of-the-art methods on most protocols on Caltech Pedestrian dataset, with significant boosts on several protocols. It is also faster than all other methods.		
	versions		**versions**			