**### Task 1 ###**

**Source Documents:**

Link to OpenReview: <https://openreview.net/forum?id=HJxJ2h4tPr>

**Meta-review:**

This paper proposes a multi-frame super-resolution method including recursive fusion for co-registration and registration loss to solve the problem where the super-resolution results and the high-resolution labels are not pixel-wise aligned. While reviewer #1 is positive about this paper, reviewer #2 and #3 rated weak reject and reject respectively. Both reviewer #2 and #3 have extensive experience in the topic of image super-resolution. The major concerns raised by the reviewers include the lack of many references, the comparison of recursive fusion with related work, limited test databases, using a single translational motion for the SR images, and limited novelty on the network modules. The authors provided detailed response to the concerns, however they did not change the overall rating of the reviewers. While the ACs agree that this work has merits, given the various concerns raised by the reviewers, this paper can not be accepted at its current state.

**### Task 2 ###**

**Source Documents:**

Link to OpenReview: <https://openreview.net/forum?id=B1n8LexRZ>

**Meta-review:**

This paper presents a learned inference architecture which generalizes HMC. It defines a parameterized family of MCMC transition operators which share the volume preserving structure of HMC updates, which allows the acceptance ratio to be computed efficiently. Experiments show that the learned operators are able to mix significantly faster on some simple toy examples, and evidence is presented that it can improve posterior inference for a deep latent variable model. This paper has not quite demonstrated usefulness of the method, but it is still a good proof of concept for adaptive extensions of HMC.\n\n

**### Task 3 ###**

**Source Documents:**

Link to OpenReview: <https://openreview.net/forum?id=BkeYSlrYwH>

**Meta-review:**

The paper introduces an ensemble of RL agents that share knowledge amongst themselves. Because there are no theoretical results, the experiments have to carry the paper. The reviewers had rather different views on the significance of these experiments and whether they are sufficient to convincingly validate the learning framework introduced. Overall, because of the high bar for ICLR acceptance, this paper falls just below the threshold. \n

**### Task 4 ###**

**Source Documents:**

Link to OpenReview: <https://openreview.net/forum?id=daLIpc7vQ2q>

**Meta-review:**

This paper introduces a bag of techniques to improve contrastive divergence training of energy-based models (EBMs), particularly a KL divergence term, data augmentation, multi-scale energy functions, and reservoir sampling. The overall paper is well written and clearly presented. \n\nIn response to the major concerns from reviewers, the AC recognizes the authors' effort in expanding related work and adding ablation on the effects of the KL loss. However, reviewers remain unconvinced by the significance of the current results. In particular, the quality improvement by adding the KL terms is subtle compared to using reservoir sampling (as evidenced in the contrast of the last two rows in Table 2). Moreover, the authors are also encouraged to compare additionally with recent development in EBM, as pointed out by R2 & R4.\n\nThe AC does find the results on downstream tasks such as out-of-distribution quite promising and interesting. Perhaps it's worth expanding the discussion with formal reasoning on why KL loss helps in this case. \n\nAll four knowledgeable reviewers are leaning towards rejection, the AC respects and agrees with the decision. \n

**### Task 5 ###**

**Source Documents:**

Link to OpenReview: <https://openreview.net/forum?id=USC0-nvGPK>

**Meta-review:**

This paper proposes a new approach to graph-based active learning, using the query whether the predictions made by the current model are correct or not.\nAlthough the theoretical underpinnings of the proposed approach are a bit weak, the problem formulation that is newly proposed in this paper makes sense from a practical point of view, and the paper makes a simple and interesting proposal that would be worth sharing with the community.

**### Task 6 ###**

**Source Documents:**

Link to OpenReview: <https://openreview.net/forum?id=BklDO1HYPS>

**Meta-review:**

This paper proposes a stochastic variance reduced extragradient algorithm. The reviewers had a number of concerns which I feel have been adequately addressed by the authors.\n\nThat being said, the field of optimizers is crowded and I could not be convinced that the proposed method would be used. In particular, (almost) hyperparameter-free methods are usually preferred (see Adam), which is not the case here.\n\nTo be honest, this work is borderline and could have gone either way but was rated lower than other borderline submissions.