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# EDA: Asking the Right Questions!

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# Introduction

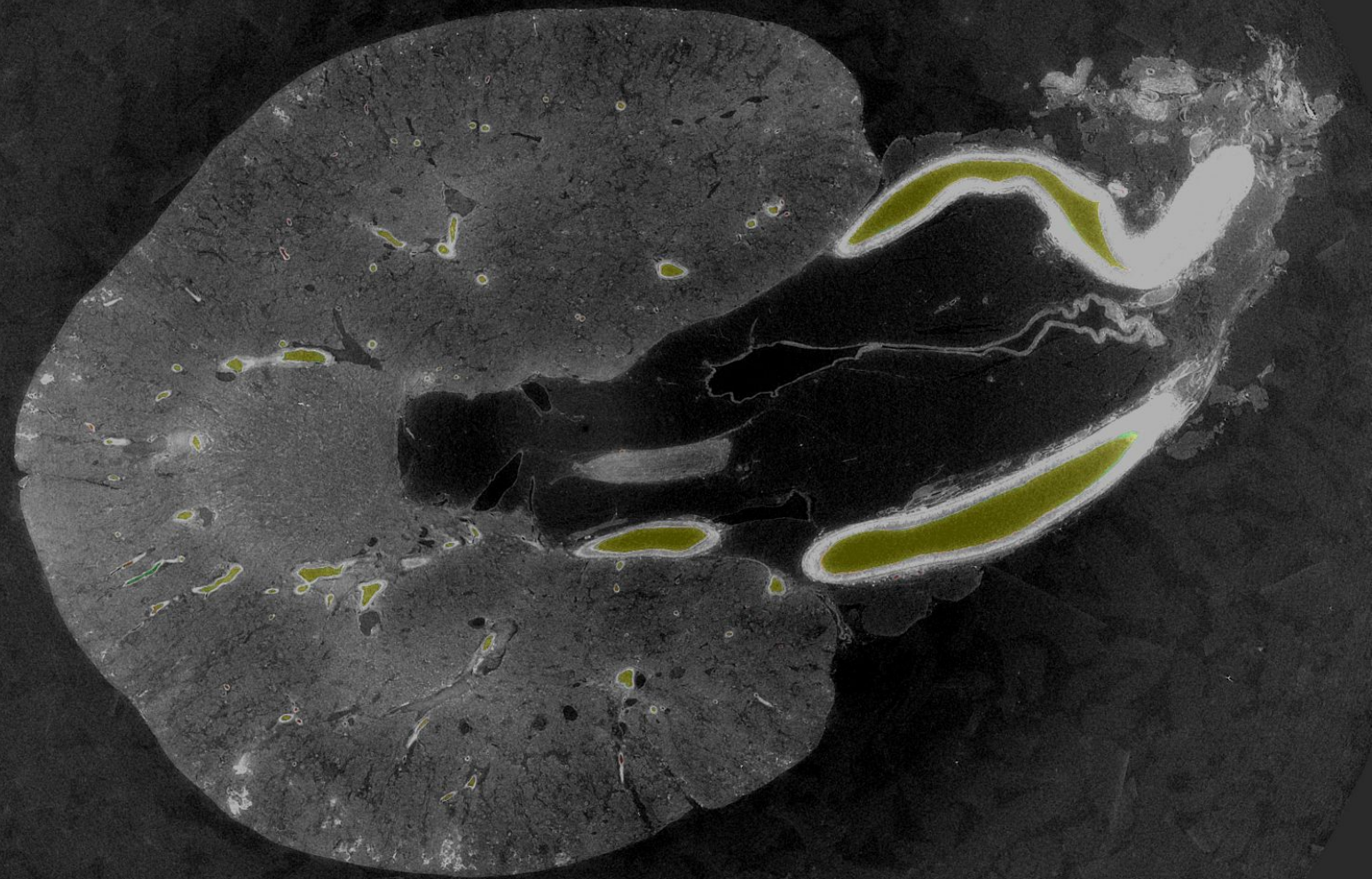
- **Goal for today:** Looking for an answer is easy. But can you **ASK** the right question that leads to a useful insight?

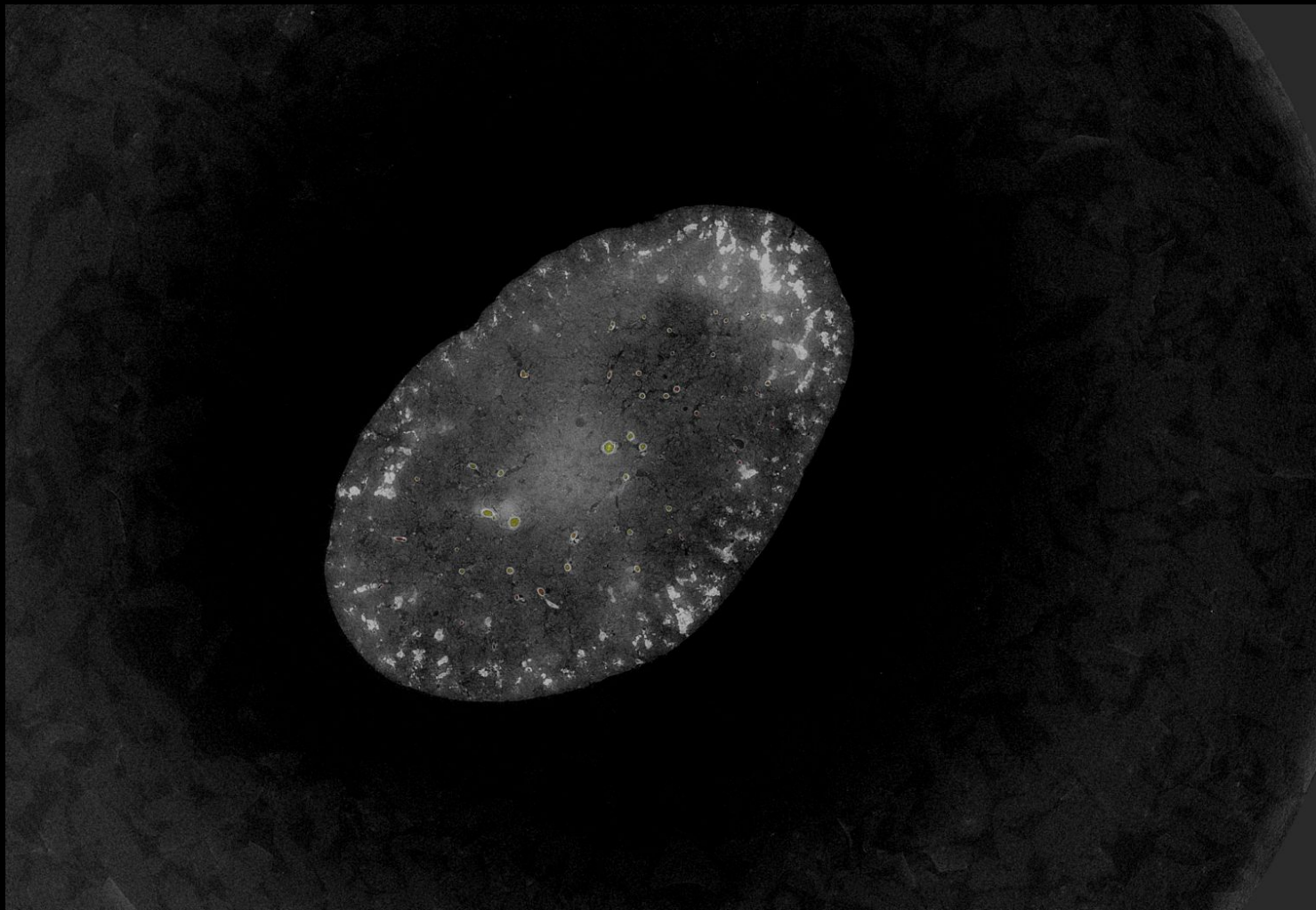
## Tasks:

- You will be given a description of a dataset (mostly from Kaggle).
- You will be given questions to answer.
- These questions cannot be answered with only the information I provide. You must ask me for any missing context.
- Finally, we'll review what the top teams actually did.

# 1) Blood Vessel Segmentation (SenNet + HOA)

- **Goal:** Automatically segment blood-vessel structures in 3D human kidney scans
- **Data Modality:** 2D TIFF slices of HiP-CT volumes (stacked to form 3D)
- **Output:** For each slice, a run-length-encoded (RLE) instance mask of vessels
- [Link](#)





# Data

- Training Set:
  - Multiple donors, mixed resolutions (1.4–50  $\mu\text{m}$ )
  - Folders train/{dataset}/images (TIFF slices) + corresponding labels masks
  - Datasets include dense and sparse annotations (e.g. kidney\_1\_dense, kidney\_1\_voi, kidney\_2, kidney\_3\_sparse)
- Test Set:
  - Two hidden volumes (kidney\_5, kidney\_6), different beamlines/resolutions
  - Public test at  $\sim 50 \mu\text{m}/\text{voxel}$ ; private test at  $\sim 63 \mu\text{m}/\text{voxel}$

# Questions

1. Which architecture makes sense, and why?
2. Is the existing annotated set enough for a robust model?
3. Data has different resolutions, is this a problem here? If yes, what should you do?
4. Given the data size, different resolution, different donors, how do we split data here?
5. I have sparse and dense annotations, while test is dense only, can i utilize the sparse annotations somehow?
6. Is a shake up expected to happen? If yes, why?
7. Given 3D context and varying voxel sizes, which transforms/augmentations are useful?
8. What is the best metric to use?
9. How will you choose your submissions?

# Questions

1. Which architecture makes sense, and why? [2D/2.5D/3D Unet](#)
2. Is the existing annotated set enough for a robust model? [Nope lmao, good luck](#)
3. Data has different resolutions, is this a problem here? If yes, what should you do? [Big problem, use sliding windows/voxels + pseudo labels + downsample high resolution images to test size :\)](#)
4. Given the data size, different resolution, different donors, how do we split data here? [Group by kidney, use sliding window/voxel, and wish you are lucky enough](#)
5. I have sparse and dense annotations, while test is dense only, can i utilize the sparse annotations somehow? [Pretrain on sparse, finetune and validate on dense](#)
6. Is a shake up expected to happen? If yes, why? [Yes, low number of samples, huge distribution shift](#)
7. Given 3D context and varying voxel sizes, which transforms/augmentations are useful? [Shift, scale, rotate, flip, resize with 3D interpolation.](#)
8. What is the best metric to use? [Dice](#)
9. How will you choose your submissions? [One with same resolution as test, one with sliding window maybe.](#)



# Top Solutions

[Leaderboard](#)