Choosing a Capstone Project in Machine Learning Program

During my role as a mentor in Udacity's Machine Learning, I have had the opportunity to work with students coming from various academic and professional backgrounds. Some come with prior ML knowledge and others are very new to Machine Learning. Irrespective of where they are in the learning process, writing a Capstone Project Proposal in the Machine Learning domain can be overwhelming. Here are a few steps I ask my mentees to consider before choosing a project.

1. **Area of Interest:** Choose something you can implement at work or submit as a project in your academic course. If you are looking to move to a different domain, choose one that will help you build your portfolio.
2. **Learning Goal:** The goal should be to pick a topic where your current knowledge/skill level is between 4 to 6 (out of 10) and the Capstone project will help you reach 8 to 10. You will have help from mentors and reviewers. SO, push your technical boundaries here.
3. **Data Types & Source**: Which datatypes to work with? Link and Complexity of getting the data. Getting data using an API will be a good experience.
4. **Learning technique**: Standard ML, DL or blend of the 2. NLP, Image Processing, semi structured data
5. **ML Library:** Tensor Flow/PyTorch/sci-kit learn, H20. Rate your familiarity.
6. **Time**: How much time you think these will take and how much time you can allocate?
7. **Machine Resource:** Deep learning application needs powerful machines. Are you going to use AWS, Kaggle or your local machine as a platform.
8. **Resource:** When you are learning, it is great to have a list of research papers, partial implementation/code available for the project. Check how much resource is available.