1. Background and current role responsibility

* Physical simulation
* Perception system, segmentation, localization
* Training and maintaining ML models with annotated data

2. Synthetic data generation necessary

* Current process is costly, time consuming, and noisy
* Image data augmentation is to modify the image data, e.g. the shape, size, blurring.
* Sim2Real: using simulation model to generate synthetic image data based on the light changes (e.g. the shadow, the height of the light, camera noise). -> generate events that have never happened before.
* Open questions:
  + How to change the light factors being put into simulation model?
  + Model deployed to production, how to simulate the failure ones even it has never been happened.
* Application:
  + Robin, Cardinal, Sparrow
  + Vulcan: depth simulation from RGB data

3. Other Resources:

* Sim2Real: <https://quip-amazon.com/KW9lABoBR8ea/Perceptual-Sim2Real-Training-Production-Ready-ML-Models-Using-Only-Simulated-Data>
* Sim2Real, engineer contact: Ben Knorlein from VS-ARISE team (the one Charun pointed out), who worked on graphical perception simulation.
* Vulcan depth prediction: <https://quip-amazon.com/oj40AEPHY9Hl/Depth-prediction-through-the-elastic-bands-A-study-on-simulated-data>
* Point of contact: Ariel Gordon, principal applied scientist, AR R&D