**Experience Report – Object Detection Assignment**

**Challenges I Faced**

* Integrating SSD with a custom ResNet backbone required adjusting feature map sizes.
* Getting Pascal VOC labels in the right format for training took time.

**How I Used AI Tools**

* I used ChatGPT and Stack Overflow to understand how SSD layers are structured.
* AI tools helped me debug PyTorch dimension mismatches faster.

**What I Learned**

* How SSD works internally: anchor generation, classification and localization heads.
* Importance of balanced dataset and loss debugging.

**What Surprised Me**

* Even pretrained backbones need a lot of tweaking when added to new heads.
* Getting decent mAP takes more than just architecture—it needs good data handling.

**Suggestions to Improve the Assignment**

* Include label formatting guidelines for beginners.
* Recommend using torchvision detection models as base for rapid prototyping.