| **Weeks** | **Milestone** |
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| **1–2** | **GNN setup** • Finalize PyG dataset & DataLoaders • Implement small GCN/GAT baseline • Stratified 5‑fold CV, class weights, early stopping |
| **3–4** | **GNN tuning & write‑up** • Hyperparameter sweep (layers, dims, LR) • Data augment (edge‑drop, feature noise) • Produce performance tables & confusion matrices |
| **5** | **Transformer prototyping** • Build lightweight 3D‐CNN encoder + Transformer on DWI volumes • Get a quick overfit‑sanity check on a small subset |
| **6–7** | **Transformer scaling** • Pretrain on public DWI (ADNI or UK Biobank) if feasible • Fine‑tune on your N~1 500 set • CV with appropriate augmentations |
| **8** | **Fusion head** • Freeze both backbones, concatenate embeddings, train an MLP head • Compare single‑stream vs. fusion performance • Error analysis |
| **9** | **Ablations & robustness** • Try without pretraining, without fusion, different class‑weights • Bootstrap CI or repeated CV to quantify uncertainty |
| **10** | **Write & polish** • Finalize Methods & Results • Integrate figures (UMAPs, curves) • Draft Discussion/Limitations & Future Work; proofread |