SPARK 3rd BraTS-Africa BrainHack
Code Hack & Team Exercise Tasks
12 - 16th May, 2025

Instructions:

1. Use the **Code Hack Session** to run your chosen model's code on Compute Canada and produce results that are similar to the reported model's performance.

2. Use the **Team Exercise Session** to work on the Capstone Project presentation or to continue to hack your code (i.e., the Code Hack Session).

3. **Capstone Project** Presentation: 5-minute presentation of the team's model implementation, performance, and lessons learned.

Daily Activities:

Day	Code Hack Task and Team Exercise
Monday	**Project planning and data acquisition** ● Review Model's method paper: *Each team will be provided with papers and GitHub repositories (**for Unet, UNnetr, nnUnet, SwinUnetr, and GAN**) to review each paper and code and choose a model to use.* ● Review the model's code in Kaggle **Deliverables:** *1-page Report* ● Submit a summary of the model paper outlining: ○ Motivation for your model selection ○ **Model Details:** Name, Architecture (figure or table) ○ Identify model deficiencies & outline strategies to address them. ○ Start Preparing your 5-Minute Capstone Presentation (***See details on day 5***) ● **Submit Mid-program evaluation**
Tuesday	**Data Exploration and Preprocessing** ● Download the dataset from the Cancer archive and TCIA (2021) ● Perform exploratory data analysis ● Preprocess data for and design a data loader for model training ● Transfer code from the Github repo to kaggle ● Start training the model **Deliverables:** *1-page Report* ● Outline any challenges faced in implementing the model ● Continue working on your 5-Minute Capstone Presentation (***See details on day 5***)
Wednesday	**Model Selection and Training** ● Continue training your chosen model on BraTS data ● Implement ways to improve the model

	Deliverables: *1-page Report* ● Report preliminary results from model training ● Report model performance with the implementation of new strategies ● Outline any challenges faced in implementing the model ● Continue working on your 5-Minute Capstone Presentation (***See details on day 5***)
Thursday	**Model Training, Validation and Evaluation** ● Continue training your chosen model on 2024 BraTS data ● Compare your results with the model's reported (published) results **Deliverables:** *1-page Report* ● Update results from model training ● Update Identified model deficiencies & outline strategies to address them. ● Continue working on your 5-Minute Capstone Presentation (***See details on day 5***) ● Each member of the team individually completes the Mid-training survey here https://forms.gle/Hh6yPy5k2D7186hn6
Friday	**Model Evaluation and Optimization** ● Finalize any remaining model training evaluation ● Add updated results to the 5-Minute Capstone Presentation **Deliverables:** **Capstone Presentation** ● *5-Minutes no more than 8 slides* ● *Present a summary of:* ○ *The motivation for choosing the model includes the advantages of the method* ○ *The model architecture* ○ *Outline any observed or suspected model deficiencies* ○ *Results - performance of the model and if performance was replicated* ○ *Challenges faced in implementing the model* ○ *Introduce the proposed BraTS 2025 Challenge model*