- This package contains 2 data sets and 9 programs.
- The data set named "NHANES" has columns names and NaN's. Because NaNs are read as 0's in csvread() in MATLAB and the variables we used in analysis do not have negative values, thus we replaced all the missing values with -1 and it gave another data set "NHANES_noname_-1".
- The first one is the main function; the rest 8 functions are called by the main function.
    1. child_12HEIplusenergy_BRR0.m
    2. formGofSigmaeV_12HEIplusenergy.m
    3. gen_truncated_normals.m
    4. gen_Wtildei_12HEIplusenergy_child.m
    5. update_beta_12HEIplusenergy_child.m
    6. updated_parameter_r_12HEIplusenergy_diffrecall.m
    7. updated_parameter_theta_12HEIplusenergy.m
    8. updated_parameter_Vii_12HEIplusenergy_diffrecall.m
    9. updated_parameter_Vij_12HEIplusenergy.m
- For each function, the inputs and outputs are explained clearly inside the function.
- The main function reads the data: NHANES_noname_-1. Before reading the data, please make sure the row of column names is deleted.
- Before running the main function, please put the data and 9 programs in the same folder. Change the path in the main function to your own path.
- Outputs:
    1. child_Sigmau_mean.mat

       The mean of $\Sigma_u$ trace, but only every $100^{th}$ after the (burn-in) $^{th}$ MCMC iteration are recorded, i.e. the mean of the first 20100, 20200, ..., 70000 MCMC iterations are recorded.

2. child_Sigmae_mean.mat

   The mean of $\Sigma_\epsilon$ trace, but only every $100^{th}$ after the (burn-in) $^{th}$ MCMC iteration are recorded, i.e. the mean of the first 20100, 20200, ..., 70000 MCMC iterations are recorded.

3. child_beta_mean.mat

   The mean of $\beta$ trace, but only every $100^{th}$ after the (burn-in) $^{th}$ MCMC iteration are recorded, i.e. the mean of the first 20100, 20200, ..., 70000 MCMC iterations are recorded.

4. child_Sigmau.mat

   The trace of $\Sigma_u$, but only every $100^{th}$ after the (burn-in)$^{th}$ MCMC iteration are recorded, i.e. the $20100^{th}$, $20200^{th}$, ..., $70000^{th}$ MCMC iterations are recorded.

5. child_Sigmae.mat

   The trace of $\Sigma_\epsilon$, but only every $100^{th}$ after the (burn-in)$^{th}$ MCMC iteration are recorded, i.e. the $20100^{th}$, $20200^{th}$, ..., $70000^{th}$ MCMC iterations are recorded.

6. child_beta.mat

   The trace of $\beta$, but only every $100^{th}$ after the (burn-in)$^{th}$ MCMC iteration are recorded, i.e. the $20100^{th}$, $20200^{th}$, ..., $70000^{th}$ MCMC iterations are recorded.

7. q1.mat

   The estimated quantiles, mean and standard deviation of usual intake of the 12 HEI dietary components and energy

8. q2.mat

   The estimated quantiles, mean and standard deviation of energy-adjusted usual intake of the 12 HEI dietary components

9. q3.mat

   The estimated quantiles, mean and standard deviation of score of the 12 HEI dietary components and total score

10. adjustedintake_R.txt

    The correlation of energy-adjusted usual intake of the 12 HEI dietary components

11. score_R_model

    Estimated correlations between each individual HEI-2005 component score and the sum of the other HEI component scores, i.e., the difference of the total score and each individual component

12. q4_lt50.mat

    Table 6 in the paper: for Whole Fruit, Whole Grains, DOL and SoFAAS, the estimated quantiles, mean and standard deviation of energy-adjusted usual intake for those whose HEI-2005 total score are $\leq 50$

13. q4_gt50.mat

    Table 6 in the paper: for Whole Fruit, Whole Grains, DOL and SoFAAS, the estimated quantiles, mean and standard deviation of energy-adjusted usual intake for those whose HEI-2005 total score are $> 50$

14. Figure 1, 2 and 3 in the paper