Model Write-up

Parameters: $\mathbf{n_{seed}}$ (number of seeds to start with), $\mathbf{n_{coupons}}$ (number of total coupons available)

Algorithm:

1. Assign each starting seed a covariate value. The covariate is sampled from a normal distribution of mean 0 and variance 1. Save the $\mathbf{n_{seed}}$ covariates to the vector **covariates**.
2. Assign each starting seed a degree, or number of neighbors. The degree is sampled from a Poisson distribution of mean 3. Save the $\mathbf{n_{seed}}$ degrees to the vector **degrees**.
3. Set the number of total recruited people to $\mathbf{n_{seed}}$.
4. **while** the number of total recruited people is less than $\mathbf{n_{coupons}}$:

    for each seed,

    | **for** each neighbor of the seed,

    | | flip a coin with probability expit(covariate of seed)

    | | **if** *success* **then**

    | | | the neighbor is recruited

    | | | assign the neighbor a covariate value, sampled from a normal distribution of mean (covariate of seed) and variance 1.

    Update **covariates** with list of neighbor covariates

    Assign each seed a degree, sampled from a Poisson distribution of mean 3.

    Increment the number of total recruited people by the number of recruited neighbors.