Weekly report

1 My *Accomplishments* this week

1.1 Project 1: *Massive Uniform Control*

- Joystick GUI: created a joystick GUI for all directions global control via EM system
- EM system: identified the dimension of the workspace, the magnetic properties of the EM system (uniformity, magnitude)
- Preliminary aggregation: used the joystick and captured a series of screenshot for ferrous particle aggregation
- RSS poster
- Literature review: Berg, H. C. (1993). Random walks in biology. Princeton University Press.
- Literature review: Cheang, U. K., Lee, K., Julius, A. A., & Kim, M. J. (2014). Multiple-robot drug delivery strategy through coordinated teams of microswimmers. Applied physics letters, 105(8), 083705.
- Literature review: Cheang, U. K., & Kim, M. J. (2015). Self-assembly of robotic micro-and nanoswimmers using magnetic nanoparticles. Journal of Nanoparticle Research, 17(3), 1-11.
- Literature review: Zhang, J., & Diller, E. (2015, September). Millimeter-scale magnetic swimmers using elastomeric undulations. In Intelligent Robots and Systems (IROS), 2015 IEEE/RSJ International Conference on (pp. 1706-1711). IEEE.
- Literature review: Zhang, J., Jain, P., & Diller, E. Independent Control of Two Millimeter-Scale Soft-Bodied Magnetic Robotic Swimmers.
- Literature review: Regtmeier, A., Wittbracht, F., Rempel, T., Mill, N., Peter, M., Weddemann, A., ... & Htten, A. (2012). Uniform growth of clusters of magnetic nanoparticles in a rotating magnetic field. Journal of Nanoparticle Research, 14(8), 1-5.
- Literature review: Wittbracht, F., Eickenberg, B., Weddemann, A., & Htten, A. (2011). Towards a programmable microfluidic valve: Formation dynamics of two-dimensional magnetic bead arrays in transient magnetic fields. Journal of Applied Physics, 109(11), 114503.
- Literature review: Koser, A. E., Keim, N. C., & Arratia, P. E. (2013). Structure and dynamics of self-assembling colloidal monolayers in oscillating magnetic fields. Physical Review E, 88(6), 062304.
- Literature review: Gao, Y., van Reenen, A., Hulsen, M. A., de Jong, A. M., Prins, M. W., & den Toonder, J. M. (2013). Disaggregation of microparticle clusters by induced magnetic dipoledipole repulsion near a surface. Lab on a Chip, 13(7), 1394-1401.
- Literature review: Kappe, D., & Htten, A. Formation of particle clusters from rotating particle chains.
- Time sheet: https://drive.google.com/open?id=1LgOI4783jnWs3CjYf8lRabM0ixTHUJN9iCzz

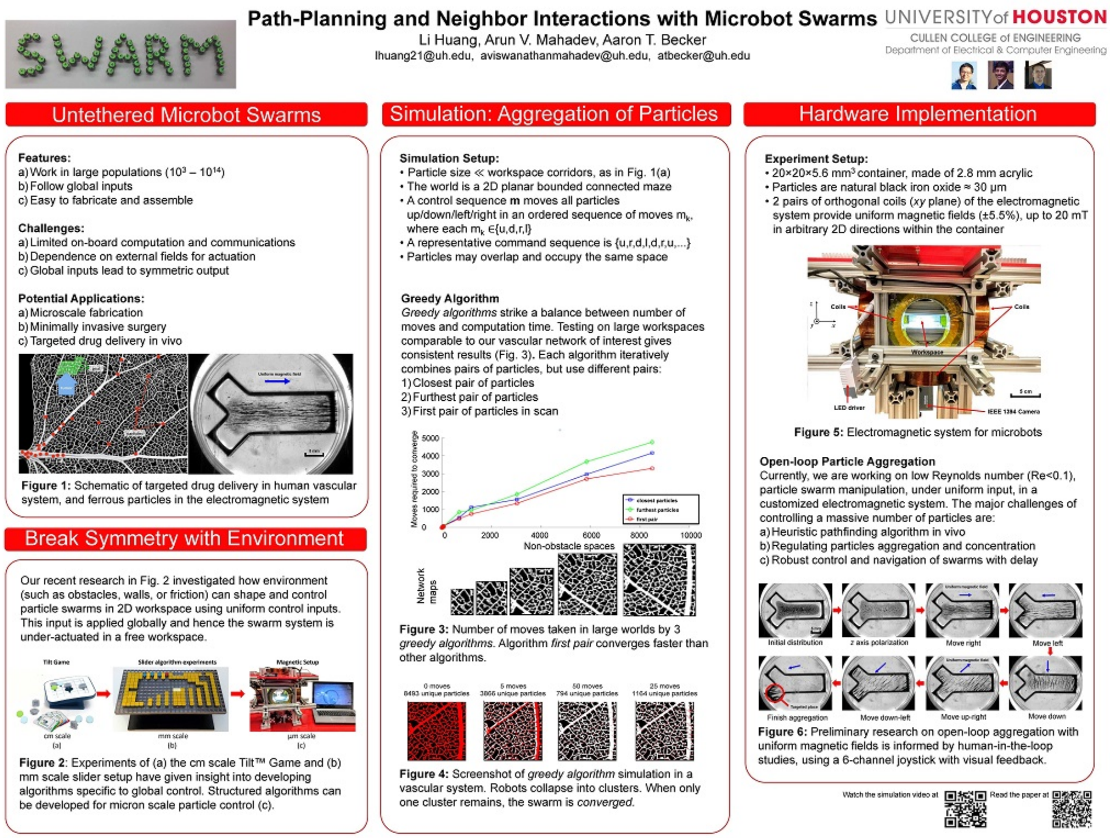

Figure 1: *RSS poster*

2 My *Goals* for next week

- RSS Conference