



SELECTIVE RESETTING POSITION AND HEADING ESTIMATIONS DURING DRIVING IN A LARGE-SCALE ENVIRONMENT

Lei Zhang, Doctoral Candidate

Cognition Seminar

Friday, September 23, 2016

3:00 – 4:30pm

BSP 319N



Lei Zhang

To investigate how people interactively use optic flow and landmarks to determine positions and headings, we asked participants to drive in an immersive virtual city (optic flow available). After driving, we presented either rotated distal landmarks or one displaced proximal landmark. We calculated estimated positions and headings after driving using the least squares fitting method. When presented with the displaced proximal landmark, participants used it to determine positions, but used optic flow to determine headings. When presented with rotated distal landmarks, participants used them to determine headings, but their position estimations were random. If instructed to continuously calculate their positions during driving, they used optic flow to determine positions but rotated distal landmarks to determine headings. These findings suggest that during driving, people use landmarks in piloting systems to selectively reset the positions and headings calculated by optic flow in path integration systems.

