TECHNISCHE UNIVERSITÄT DRESDEN

http://tu-dresden.de/mentoring

Mentoring

Programm der TU Dresden

Berufseinstieg leicht gemacht!

Dein Ziel: Berufseinstieg?
Mit Mentoring dort ankommen!

Tausche Dich mit deinem persönlichen Mentor/ deiner persönlichen Mentorin aus Wirtschaft und Wissenschaft aus und lerne die Anforderungen kennen, die nach dem Studium auf Dich zukommen.

Bewirb Dich bis **08. Mai 2015** !

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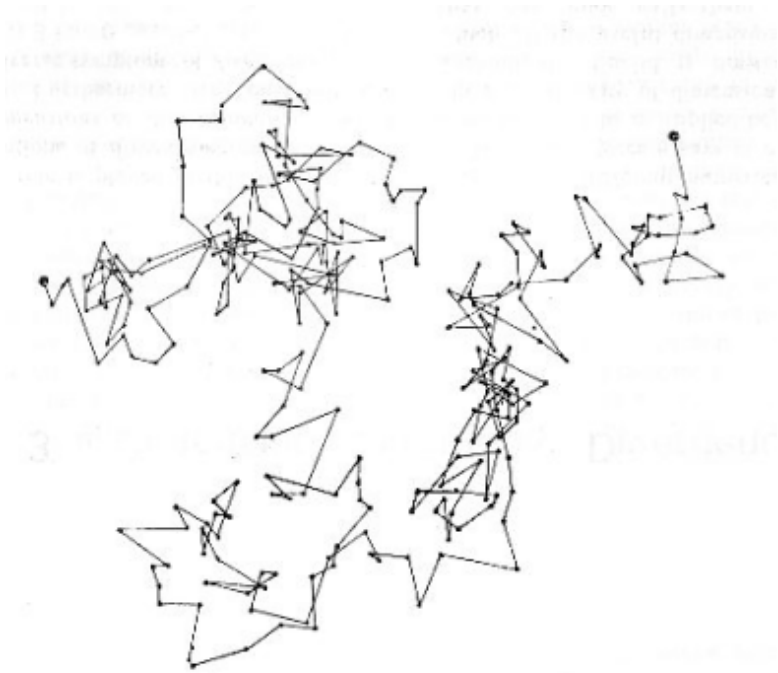
Random Walks



- The botanist Robert Brown observed in 1827 that tiny particles contained in pollen moves in water
- This motion could not be explained at that time
- Albert Einstein (1905) explained this phenomenon by a model of ‚Brownian motion‘: the particle is pushed around by single water molecules.
- This explanation and an experimental study in 1908 served as proof that atoms and molecules actually exist (which was disputed at the time).

http://en.wikipedia.org/wiki/Brownian_motion

Exercise

- Write a script that samples 1,000 random walks in 2D
  - Compute 32 steps
  - Use function rand for steps
- Plot the end points of the 1,000 random walks
- Plot three full sample trajectories on top of the endpoints
- Plot a histogram of endpoint distances from the starting point
- Use hist3 function to plot endpoint location histograms
- Use function ttest to test whether the x-values of the endpoint locations are statistically different from zero.
- Re-run program with 100,000 random walks. Use vectorized code (not for-loops)