Faculty Sponsor: Stan Osher  
Research Mentors: Mike Lindstrom (instructor)  
Office: MS 5622  
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Weekly Group Meetings and Lectures*: Wed 4-5 pm and Thurs 9-10 am in MS 6943 (Chair’s Conference Room)

Course Description: Studying homeless movements in Los Angeles through data science, machine learning, and modelling

Expectations:  
Researching and coding simulations: 4-6 h/week (2 credits)  
10-11 h/week (4 credits)  
Report Writing: 1-2 h/week (2 credits)  
1-2 h/week (4 credits)  
Weekly Meetings/lectures: 2 h/week

Grading Scheme:  
Attendance and Research: 45% (attending meetings, task work and completion)  
Oral Exam: 20% (individual questions about the math and work)  
Final Presentation: 10% (presenting the work as a group to public audience)  
Midterm Report: 5% (written report of overall findings mid-quarter)  
Final Report: 20% (written paper of overall findings of the work)

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<th>Week</th>
<th>Research Activity</th>
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<tr>
<td>0</td>
<td>W: Sept 27th (1 – 3 pm) – Course orientation, project background, open questions, MATLAB fitting</td>
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<tr>
<td>1</td>
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| 5    | Lecture and/or meeting  
F: Nov 3rd – Midterm report due by 5 pm |
| 6    | Lecture and/or meeting |
| 7    | Lecture and/or meeting |
| 8    | Lecture and/or meeting |
| 9    | Lecture and/or meeting |
| 10   | W: Dec 6th Final research meeting & practice presentation  
R: Dec 7th Extra time to practice, fix slides, etc.  
W: December 6th – Oral exam – individual times to be set  
W: December 6th - Final report due by 5 pm  
R: December 7th – Final Presentation at 3 pm |

* Lecture topics could include: Markov processes, clustering algorithms, optimization, likelihood estimates, principal component analysis, etc. Not every week will have a lecture; some of these topics may be covered and others not listed may be relevant.