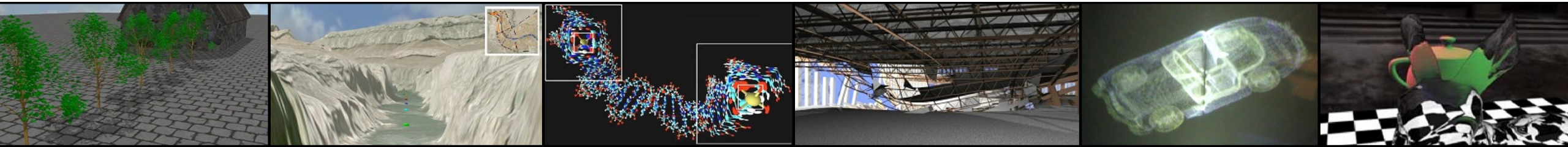


COT 4521: INTRODUCTION TO COMPUTATIONAL GEOMETRY



Midterm Review Topics

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WHAT YOU'RE ALLOWED/NEED

- PEN/PENCIL
- CHEAT SHEET (ONE) 8.5x11 FRONT SIDE ONLY
- STRAIGHT EDGE (WE HAVE SOME, IF YOU DON'T)

- NO CALCULATORS
- NO OTHER NOTES
- NO BOOKS
- NO ELECTRONICS



WHAT TO EXPECT

- EXAM OCT 22, IN CLASS
 - You have the class period (75 minutes) to take the exam.
 - I won't be here
 - TA (Junyi Tu) will administer the exam
- NO CLASS OCT 24



REVIEW TOPICS

- BASIC GEOMETRY & TRIGONOMETRY
 - points, vectors, angles, cross products, etc.
- SEGMENT/SEGMENT INTERSECTION
 - pairwise, AABB method, sweep method
- POLYGONS
 - Simple/non-simple, orientation, internal/external angles, diagonal definition, point inside polygon, number of triangulations, area, intersection by walking chains



REVIEW TOPICS

- ART GALLERY PROBLEM
 - Max of mins definition, triangulation, dual of a triangulation, coloring of vertices
- TRIANGULATION
 - Diagonal-based approach, ear-based approach, monotone partitioning, monotone triangulation



REVIEW TOPICS

- FOR ALL ALGORITHMS, STUDY THE ALGORITHM THEMSELVES, TIME COMPLEXITY (WORST/BEST/AVERAGE CASE), AND WORST/BEST CASE CONFIGURATIONS

