CSCI 4550/6550 Interactive Visualization — Quiz 2
Friday, April 20th, 2018 — 2pm-3:50pm

Name:

RCS username:

This quiz is closed book & closed notes except for one 8.5x11 (double-sided) sheet of notes.

Please state clearly any assumptions that you made in interpreting a question.

Write your answer in the box provided below each question. Be sure to write neatly. You are encouraged to use the provided colored pencils, crayons, or markers.

1	/ 6
2	/ 9
3	/ 8
4	/ 9
5	/ 9
6	/ 9
Total	/ 50

1 Uncertain Uncertainty [/6]

Which paper on did you read?

- "Representing Uncertainty in Graph Edges: An Evaluation of Paired Visual Variables", *or*
- "Visualizing Uncertain Information", *or*
- "Automated Observer Siting on Terrain, Showing Intervisibility", *or*
- "Algorithm and Implementation Uncertainty in Viewshed Analysis"?

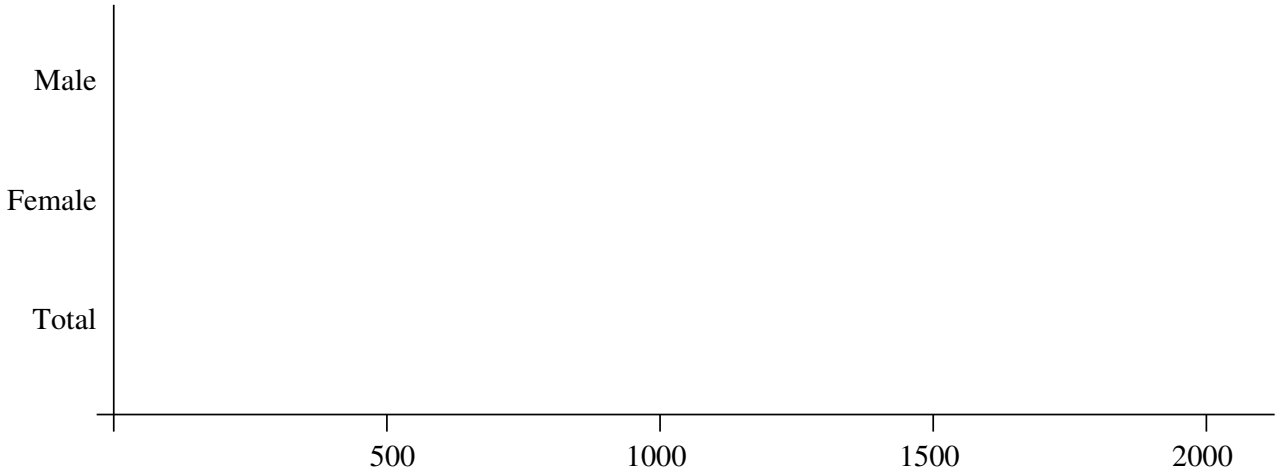
Write 3-4 sentences describing the algorithm and/or the primary contribution of this paper.

2 RPI Admissions Statistics [/9]

Fall 2016	**total**	**male**	**female**
applications	18,524	12,771	5,753
admitted	8,215	5,442	2,773
enrolled	1,691	1,157	534

Fall 2017	**total**	**male**	**female**
applications	19,505	13,475	6,030
admitted	8,420	5,604	2,816
enrolled	1,663	1,164	499

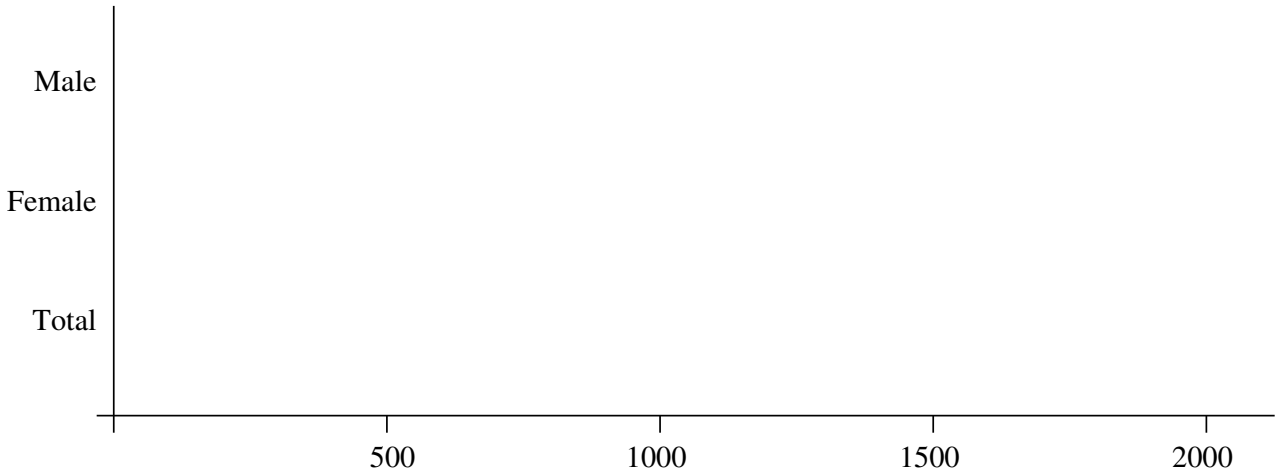
We received 20,377 applications for Fall 2018. *Using two different methods for visualizing the error,* sketch your prediction for the Fall 2018 freshmen class. For each plot, give the common name for that error plot style (used by researchers) and an advantage and a disadvantage of that plot style.



plot style name:

advantage:

disadvantage:



plot style name:

advantage:

disadvantage:

3 Vector Field vs. Streamlines [/8]

With color A, draw the floorplan of Moe's, the Library Cafe, the Union McNeil room, or a similar culinary establishment. Label the important features of the floorplan. With color B, draw a plausible *vector field* representing the movement of customers within this space.

Next, again in color A, redraw the same floorplan from above. Now, using color B (and optionally additional colors) overlay on the floorplan a plausible sketch showing the results from:

- the technique used in "Image Based Flow Visualization", *or*
- the algorithm presented in "Farthest Point Seeding for Efficient Placement of Streamlines."

Depending on which paper you read. Also... please indicate which paper you read!

4 Please Visualize Responsibly [/9]

4.1 Ethics [/4]

Which of the following statements are part of the proposed "Code of Ethics for Data Visualization Professionals" and the proposed "Hippocratic Oath for Visualization"? (check all that apply)

- ☐ Data sources must be reliable and verifiable, attribution should be given whenever possible.
- ☐ I shall not use visualization to intentionally hide or confuse the truth which it is intended to portray.
- ☐ Examine any visualization you see with a critical eye, and be open to criticism yourself.
- ☐ I will respect the great power visualization has in garnering wisdom and misleading the uninformed.
- ☐ To really do visualization responsibly, immerse yourself in the world of visualization.

4.2 Privacy [/5]

Write 3-4 sentences describing a specific mechanism from "Adaptive Privacy-Preserving Visualization Using Parallel Coordinates" *or* "Agile Ethics for Massified Research and Visualization", that ensures the privacy of user data.

5 Short Answer [/9]

5.1 Our impossibly high standards? [/4]

A few papers this term generated heated in-class discussion (e.g., "DimpVis"). Pick one of those papers (name or describe the paper) and in one well-written, concise, and detailed sentence, summarize the primary concern of your classmates about the paper.

Now, putting aside that concern, summarize in one well-written, concise, and detailed sentence the most significant, interesting, and/or surprising result (in your opinion) of this paper.

5.2 Does *every* academic viz paper require a user study? [/5]

Which paper did you read: "Interactive Visualization on Large and Small Displays: The interrelation of Display Size, Information Space, and Scale", *or* "Active Reading of Visualizations", *or* "Immersive Collaborative Analysis of Network Connectivity: CAVE-style or Head-Mounted Display?" In 2-3 sentences, describe a core research question and key detail of the paper's user study.

6 The Memory Match Game [/9]

You read some of the papers listed below (and heard all of them presented/discussed in class). Cross out exactly two papers that you remember the least about. Match the remaining papers with the most relevant items/statements below. *NOTE: Each letter may be used zero or more times and each box may have zero or more letters.*

(A) "Guidelines for Effective Usage of Text Highlighting Techniques"

(B) "Designing Effective Step-by-step Assembly Instructions"

(C) "QSplat: A Multiresolution Point Rendering System for Large Meshes"

(D) "Interactive Cutaway Illustrations of Complex 3D Models"

(E) "Visualization, Selection, and Analysis of Traffic Flows"

(F) "LabelMe: Online Image Annotation and Applications"

(G) "Globe Browsing: Contextualized Spatio-Temporal Planetary Surface Visualization"

(H) "Intuitive Exploration of Volumetric Data Using Dynamic Galleries"

(I) "Scatterplots: Tasks, Data, and Designs"

(J) "Synthetic Aperture Confocal Imaging"

(K) "An Image-based Approach to Extreme Scale In Situ Visualization and Analysis"

(L) "Interactive Dynamic Volume Illumination with Refraction and Caustics"

(M) "What Makes a Visualization Memorable?"

	Lego & Ikea		used a geographic map
	Mechanical Turk		recommendations / best practices for visualization
	for a touch screen		uses a spatial data structure
	efficient rendering of huge data		multiple camera positions
	applied to medical data		requires a supercomputer
	uses transparency		chart junk
	box/volume "brushing"		your choice: _____ _____