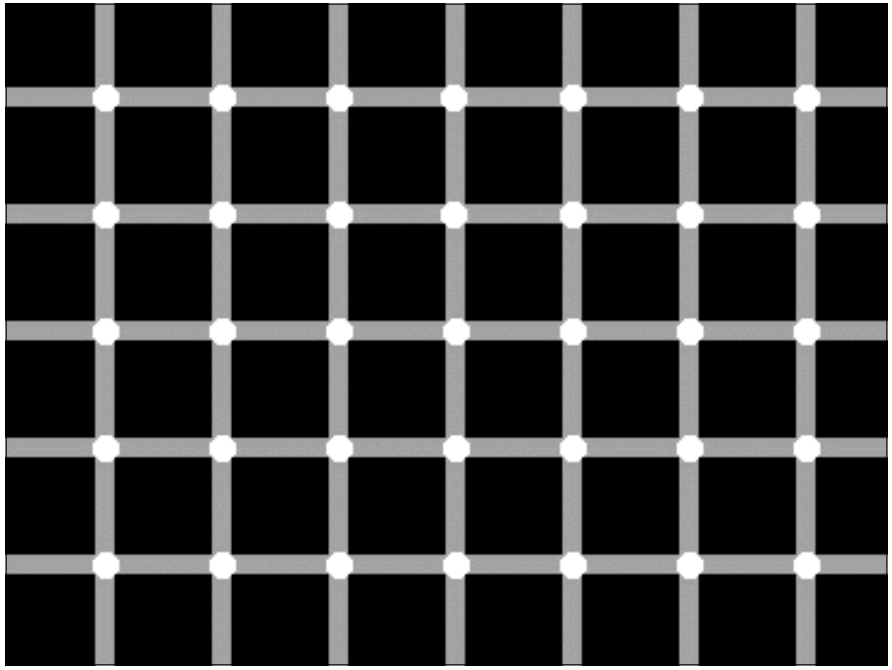
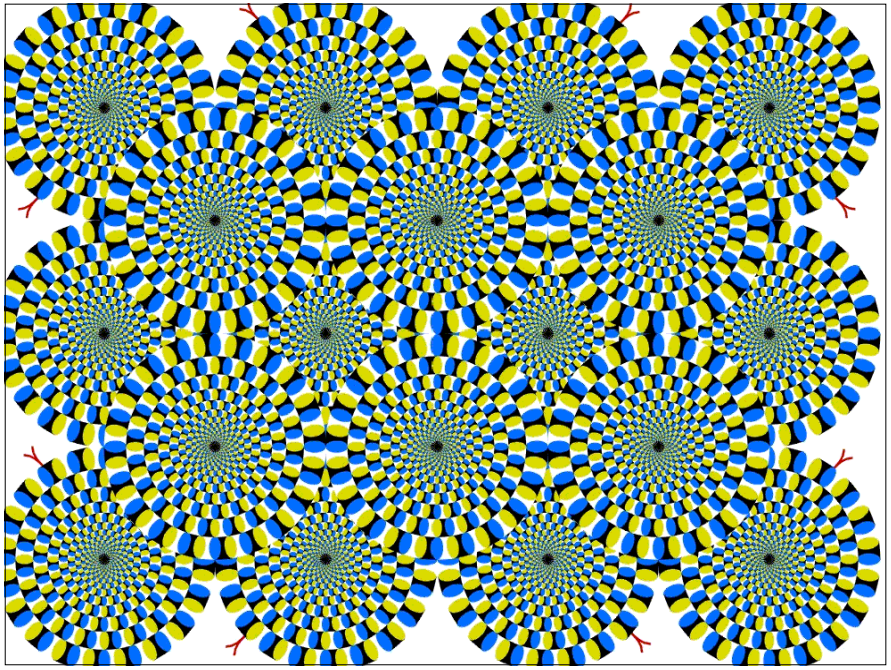
Welcome to ISTA 352

Images: Past, Present, and Future





Instructor

Kobus Barnard:
kobus@sista.arizona.edu
http://kobus.ca
GS 927-A

Other office hours available by **email**.
Monday 9-10:30 GS 927
Wednesday 12:30-1:30

Important: Request for Office hours **MUST occur by 6pm the day before**.

ISTA 352 on-line

Course page is now up: http://kobus.ca/teaching/ista352/fall12
(Linked from instructor's home page http://kobus.ca)

Lectures and assignments will require either connecting from a UA machine (either physically OR virtually (e.g., VPN), OR a login credentials:
user: me
password images4fun

Significant communication for the course will happen using the class mail list
ista352@list.arizona.edu.

Teaching assistant

TA (part time): Kyle Simek (ksimek@email.arizona.edu)

Office hours **1-2** (Tuesday and/or Thursday) in 927-C

Or via email appointment

Grades, etc.

Attendance (10%), four quizzes (10% each), five assignments (average 10% each).

No (required) final.

Given N missed classes, the attendance grade out of 10 will be computed as:
min(10, max(0,13-N))
Note that this formula means that missing up to 3 classes is still perfect attendance, which means that most "life happens" events are covered, and you should only need to contact the instructor if you need to miss a significant number of classes.

The computation of the attendance grade does not consider the first lecture (if you registered late), any lecture designated as a tutorial session, any extra session outside of class time, and the day before thanksgiving which will be used as a demo time slot. Attending colloquia recommended in class will lead to bonus mark opportunities.

Testable material includes assignments, lectures designated as being part of the attendance grade (INCLUDING guest lectures), AND tutorials.

90% guarantees an A, 80% guarantees a B, 70% a C, and 60% a D.

Assignments

Assignments will be some combination of programming and other activities. You will typically submit code (if there was programming), and a PDF writeup, via email.

The first assignment uses Matlab.

Where it makes sense to do so, assignments will be graded about 1/3 on exposition.

Detailed information on preparing and submitting assignments is online.
http://kobus.ca/teaching/ista352/ua_only/assignments/instructions.pdf
(Make sure you read this!)

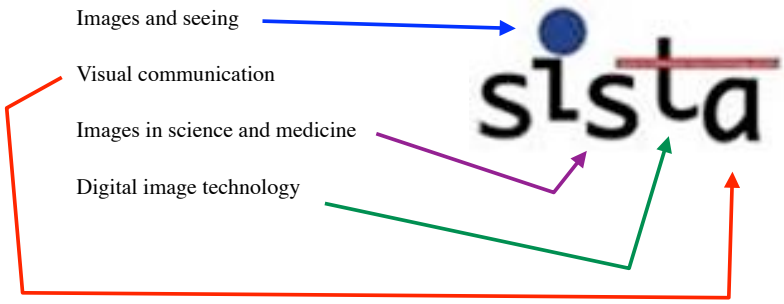
Due dates are on the course home page.

Assignment one will be posted very soon and will be due Friday, Sept 07.

Course schedule

Detailed (but under construction) information on the schedule is online.
http://kobus.ca/teaching/ista352/ua_only/schedule.pdf

Four sections.



Images and Seeing

W01	D01	Aug 20	L01	Welcome to ISTA 352
W01	D02	Aug 22	L02	What is an image?
W01	D03	Aug 24	Tutorial 1; A1 posted	*Linear algebra I (arrays, matrices, linearity)*
W02	D04	Aug 27	L03	What is seeing?
W02	D05	Aug 29	L04	Images from light
W02	D06	Aug 31	Tutorial 2	*Linear algebra II (transformations)*
W03		Sep 03	Labor Day	
W03	D07	Sep 05	L05	Human and other animal eyes
W03	D08	Sep 07	L06, A1 due, A2 posted	Digital representation of image data
W04	D11	Sep 07	Extra	*Color constancy demo in GS 906 at 1pm*
W04	D09	Sep 10	L07	The world in perspective
W04	D10	Sep 12	L08	Where does the light land?
W04	D11	Sep 14	Tutorial 3	*Linear algebra clean up, assignment questions*
W05	D12	Sep 17	L09	Stereo vision
W05	D13	Sep 19	L10	Temporal image sequences (movies)
W05	D14	Sep 21	L11, A2 due	Seeing in humans and machines
W06	D15	Sep 24	Guest lecture	Mary Peterson on perception and/or the brain
W06	D16	Sep 26	Guest lecture	Luca del Pero on computer scene understanding
W06	D17	Sep 28	Q1, A3 posted	**Quiz One**

Visual communication

W07	D18	Oct 01	L12	Visual display of quantitative information
W07	D19	Oct 03	L13	What is a map?
W07	D20	Oct 05	Guest lecture	Yekaterina Kharitonova on the SLIC browsing system
W08	D21	Oct 08	L14	More on maps (or TBD---some schedule flexibility)
W08	D22	Oct 10	L15	Spatial mash-ups, Google Earth
W08	D23	Oct 12	Guest lecture	Sheila Butler on visual art
W09	D24	Oct 15	L16	Creating realism
W09	D25	Oct 17	L17	Art and perception
W09	D26	Oct 19	A3 due	Images in advertising

Images in Science and Medicine

W10	D27	Oct 22	L18	Images in astronomy
W10	D28	Oct 24	L19	Images in biology
W10	D29	Oct 26	Q2, A4 posted	**Quiz 2**
W11	D30	Oct 29		Images in biology (guest?)
W11	D31	Oct 31	Guest lecture	Linda Restifo on images of neuron form
W11	D32	Nov 02		fMRI OR medical imaging
W12	D33	Nov 05	L20	Medical imaging OR Guest lecture on medical imaging
W12	D34	Nov 07	L21	Filtering and manipulating images
W12	D35	Nov 09	L22, A4 due	More on image processing (segmentation, etc.)

Digital Image Technology

W13		Nov 12	Veterans day	
W13	D36	Nov 14	L23	Graphics in one lecture
W13	D37	Nov 16	Q3, A5 posted	**Quiz 3**
W14	D38	Nov 19	Guest	Leonard Brown on Augmented Reality (AR)
W14	D38	Nov 19	Extra	VR demo in XXX at YYY
W14	D38	Nov 19	Extra	AR demo in XXX at YYY
W14	D38	Nov 20	Extra	VR demo in XXX at YYY
W14	D38	Nov 20	Extra	AR demo in XXX at YYY
W14	D39	Nov 21	Extra	VR demo in XXX at YYY
W14	D39	Nov 21	Extra	AR demo in XXX at YYY
W14	D39	Nov 21	Extra	VR demo in XXX at YYY
W14	D39	Nov 21	Extra	AR demo in XXX at YYY
W14		Nov 23	Thanksgiving	
W15	D40	Nov 26	L24	Color matching
W15	D41	Nov 28	L25	Color reproduction
W15	D42	Nov 30	A5 due, L26	Recognition using pattern matching
W16	D43	Dec 03	L27	Image retrieval OR vision on robots
W16	D44	Dec 05	Q4	**Quiz 4**