EECS16A Lab

Find a seat wherever!

Waitlisted Students – wait by the round table
Today's Agenda

- Quick Poll
- About Us
- About Lab: Policies & Overview
- Account Forms
- Anaconda Installation
- Ipython Bootcamp
Survey Time!
About Us!
TA Name – Lab TA

- Year, major
- Fun
- Facts
- Interests

Pictures
ASE Name – Lab ASE

- Year, major
- Fun
- Facts
- Interests

Pictures
Lab Logistics & Policies

- Go to your registered section.
- Work in **pairs**!
- Arrive on time!
- Individual lab score is binary: complete / incomplete.
- **Free 16%** of your grade!
- Should not be stressful!
- Lab is for lab

- Buffer Weeks? What are those?
- Clean up after yourself.
- Use the Lab Machines.
- Unless otherwise directed
- Do NOT touch/use equipment you are unfamiliar with!
- Help your peers!
Semester Outline

- Imaging Module
- Touchscreen Module
- Acoustic Positioning Module
“Lab is awesome! It inspired me to start more personal projects.”

-Fall '15 student
"I really enjoy lab because it’s the physical manifestation of lecture. Learning about something is one thing, but actually building it is much more rewarding.”

-A hands-on learner
“Even though my lab is at 8am, I always looks forward to going because it's so much fun! It’s like breakfast...for your brain!”

-Actual 16A student...not kidding
IPython Notebook

✘ A web-based interactive computational environment

✘ JSON document containing an **ordered list** of input/output cells

✘ Can contain code, text, mathematics, plots and rich media.

✘ But what does this look like?
IPython Notebook

❌ Ordered list of input & output
**IPython Notebook**

- **Ordered list of input & output**
- Control + Enter to run current block
- **Shift + Enter to run and move forward**
Ordered list of input & output

Order matters!

In [ ]: a = True

In [ ]: if a:
    print("hello")
else:
    print("goodbye")

In [ ]: a = False
**IPython Notebook**

- Ordered list of input & output
- Order matters!

```python
In [1]: a = True

In [2]: if a:
    print("hello")
else:
    print("goodbye")

hello

In [3]: a = False
```
Ordered list of input & output

Order matters!

In [1]: a = True

In [4]: if a:
   ...:     print("hello")
   ...: else:
   ...:     print("goodbye")

goodbye

In [3]: a = False
IPython Notebook

✗ Ordered list of input & output

✗ Asterisk means it’s still running or it is queued up to run
# Table of Contents

- [Overview](#overview)
- [Python](#python)
  - [Control Flow](#ctrl)
  - [List Comprehension](#lst)
- [NumPy](#numpy)
  - [Arrays](#arrays)
  - [Slicing](#slice)
  - [Useful Functions](#funcs)
- [Miscellaneous Functions](#misc)
- [Questions](#qs)
Go to https://www.anaconda.com/download
Download the Python 3.6 package for your OS.
Download IPython Bootcamp from the course website.
Extract the zip file
Open a terminal window and navigate to IPython Bootcamp.
Run “jupyter notebook”, wait for the notebook to start, find the notebook you downloaded, open, and verify that it works.
Go to: https://acropolis.cs.berkeley.edu/~account/webacct/

Click on **Login using your CALNET ID** button.

Click on **Get new account** button next to EE16A.

**EMAIL YOUR ACCOUNT FORM TO YOURSELF!**
Opening IPython Notebook

**Mac / *nix:** Open terminal and type “jupyter notebook”

**Windows:** Search for “Anaconda Prompt” and then type “Jupyter notebook”
Notes

✗ Installing on Mac
  ✗ Install to Macintosh HD and not just "for me"

✗ Installing on GNU/Linux
  ✗ Choose to automatically append the path names

✗ Windows
  ✗ Only install for your user - not everyone
  ✗ Don’t install to a path that has a space in it
  ✗ Make sure to add to Path when prompted.
  ✗ Open “Anaconda Command Prompt” and type in “jupyter notebook”
IPython Bootcamp

✗ Review Python
✓ List comprehension
✓ Numpy functions: np.linspace, np.eye
✓ Numpy objects: arrays, matrices
✓ All the tools you will need for future labs
CHECKING-OFF TODAY

✗ No graded check-off for IPython Bootcamp
✗ Raise your hand/get my attention
✗ Introduce yourself
✗ Name, major, year
✗ Open the IPython bootcamp
✗ Demonstrate how to run a code block
✗ Work on IPython Bootcamp
✗ Find this presentation on the website