



# Introduction to Data Science

**GIRI NARASIMHAN, SCIS, FIU**

# Optional Software App: Momentos

- ▶ Leonardo Marmol will tell us a bit about Momentos
- ▶ Survey for App use

# Momentos Survey

- ▶ Survey Consent

<https://users.cs.fiu.edu/~giri/Momentos/MomentosConsentForm.pdf>

- ▶ Register

Course Code: 295MFN

- ▶ Survey link

[tinyurl.com/premomentospre](https://tinyurl.com/premomentospre)

Personal Code: XXXX

# Basics of Python

# Two kinds of data

## ▶ Structured

- Lists
  - Arrays, Tables and Spreadsheets
- Strings
- Matrices
  - Images
- Maps & Associations
  - (Key, Value) Pairs
- Time Series & Trajectories
  - Audio, Video

## ▶ Unstructured

# Languages for Data Science

- ▶ Python & Perl
- ▶ R
- ▶ MATLAB
- ▶ SQL
- ▶ Ruby

# Python ...

- ▶ Helps to perform actions on data
- ▶ Provides features to do this conveniently
- ▶ Acts as a glue language to tie together code in multiple languages
- ▶ Helps to quickly prototype an idea
- ▶ Not well suited for concurrent programs, multi-threaded applications
- ▶ Has a lot of specialized libraries for data science (e.g., NumPy, SciPy)
- ▶ Provides **DataFrame** to provide structured data (e.g., pandas)
- ▶ Provides plotting tools (e.g., matplotlib)
- ▶ Provides notebook facilities (e.g., iPython, JuPyter)