Course Syllabus
CIS 6930 - Applied Machine Learning Using Python

Fall 2019

Course Information

Course Reg. No.	83576
Course Dates	8/19/19 - 12/13/19
Class Times	M 6:00PM - 8:45PM
Class Location	Building 15, Room 1104
Class Website	`http://www.unf.edu/canvas/`

Instructor Information

Instructor	Xudong Liu, Ph.D.
Office	Building 15, Room 3211
Office Hours	MW 3:00pm-5:30pm, and/or by appointment
Phone	(904)620-2554
Email	xudong.liu@unf.edu
Personal Website	`http://www.unf.edu/~xudong.liu/`

Course Materials

The book will serve as the textbook for this course:

- Auélien Géron, **Hands-On Machine Learning with Scikit-Learn and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems**, First Edition, O'Reilly, 2017, ISBN-10:1491962291.

Other recommended books:

- Mark Lutz, **Learning Python**, Fifth Edition, O'Reilly, 2013, ISBN-10: 1449355730.
- Wes McKinney, **Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython**, Second Edition, O'Reilly, 2017, ISBN-10: 1491957662.

The book is available on Amazon.com, half.com, and other web sites that sell text books. The e-version of it may be online.

Course Description

Prerequisite: Permission of the instructor. In general, the course requires good understanding of data structures, algorithms, and strong programming skills in C/C++, Java or Python. It would be better if you have taken courses in these subjects and have done well.

This course offers special topics on Python programming and hands-on applied machine learning. It aims to introduce students to hands-on experiences in the area of machine learning. Topics in this course include: Python programming, classification, regression, clustering, and deep learning.

Classes will include lecture, in class demonstrations, and hands-on in-class exercises. Reading will be assigned in course materials and technical papers. In addition, there will be programming projects assigned that will be completed primarily outside of class. All course materials will be posted on the Canvas.

Tentative Course Schedule

The schedule is subject to change based on the progression of the course. Check the course Canvas site for the latest schedule.

Week	Topics	References	Comments
1 - 3	Overview, Linear Algebra, Python and Libraries, End-to-End	Chs. 1,2	Attendance to first week classes required! Project 1 posted
4 - 7	Classification	Chs. 3, 6, 7	
8 - 10	Regression	Ch. 4	Project 2 posted
11 - 12	Clustering and Demensionality Reduction	Ch. 8, hands-out	
13-15	Deep Learning	Ch.s 9-11,13	
16-17	Project Demos, Paper Presentations		

Important Dates (https://www.unf.edu/catalog/academic-calendar/academic_calendar/):

- 8/19: Classes begin.
- 8/23: Deadline to Add or Drop Fall 2019 Classes.
- 9/2: Labor Day (University Closed)
- 9/13: Deadline to Withdraw (25% refund).
- 10/28: Conference travel (No class).
- 11/8: Deadline to Withdraw (No refund).
- 11/11: Veterans Day (University Closed).
- 11/25-11/29: Thanksgiving Holiday (University Closed).
- 12/6: Classes end.
- 12/13: Term ends.

Documentation of Academic Activity for Financial Aid Purposes

Attending the lecture in the first week is used to document your academic activity for this course. Unless approved for absence for this class, students who failed to do so will **NOT** be marked as having completed an academic activity. **This failure could impact your ability to receive institutional or federal aid.** (This is in compliance with the US Department of Education.)

Supplies and Equipment

In general, projects are submitted electronically on Canvas. It is recommended that you use a cloud storage (e.g., GitHub), flash drive, or some other method, to backup your files so that you have them in at least two places. Loss of your computer files is not an acceptable excuse for turning in your projects late.

Class Communication

The best way to contact me is via email to **xudong.liu@unf.edu**. I will check my email daily. Feel free to email me with questions or other matters at any time.

You are expected to review emails sent to your UNF account regularly. If I need to contact you or send a notice to the class, I will do so via your UNF email address. It is your responsibility to check and use this account regularly. The Canvas site will also be used to post information and announcements and will also be used to post grades and collect assignments.

Please keep in mind:

1. I will only be sending all email messages about this course only to your UNF email address.
2. If you choose to forward your UNF mail to another system (e.g. AOL, BellSouth, HotMail, etc.), UNF cannot guarantee delivery and if you do not receive important news because that other mail system was not working you will not be excused.
3. It is important that you respond to my email messages using only your UNF email account. If you send email from another email system you will not receive a reply.
4. When sending me any email, you encouraged to include CIS6930 in the subject line so that I can prioritize those emails.
5. I plan on responding to your emails within 24 hours, except on weekends or holidays.

Grading

Your grade will be based on attendance, assignments, paper presentations, and projects. Moreover, you are encouraged to present your selected project results at the Fall 2019 School of Computing Symposium for an extra credit of 5%.

Components	**Points**
Attendance	10%
Assignments ($3 \times 10\%$)	30%
Paper Presentation	20%
Projects ($2 \times 20\%$)	40%
Fall 2019 Symposium	5% (optional)
Total	105%

Your letter grades for the class will follow the scale below. (Incomplete grades are rarely given.)

Letter	**Percent**
A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	$\leq 59\%$

Project Late Penalties

All projects are due by midnight on the days indicated. Late projects will be accepted up to the beginning of the next class with a **20% penalty**. **No** projects will be accepted more than one class period late. **No** extra credit projects or make-up projects will be given.

Notes: The grade of Incomplete (I) is uncommon and is used only in cases of a verifiable emergency that prevents a student from completing the class. All grades of Incomplete require departmental approval. If a student withdraws from a class by the published withdraw deadline, they receive the grade of W. The grades WP and WF are used if a student petitions to withdraw after the deadline and the petition is granted.

Conduct

You are expected to attend class and use class time to learn the course material. You should treat the professor and the other students in the class with respect, to help create a positive learning environment.

While in class, you should not text, check Facebook, read your email, browse the web or engage in any other non-course related activities. Your cell phones should be set to vibrate or turned off while in class. If you need to take a call or read/send a text, step out of the classroom. **Do not answer your phone while in class.**

UNF is a smoke-free campus, smoking is not allowed anywhere on campus. E-cigarettes are permitted outdoors only.

Food is not allowed in the classrooms during a class session. Beverages are permitted, but must be carried in covered containers, such as coffee cups with lids, bottles, or cans. Please do not bring open mugs or glasses to class.

Please refer to the Student Conduct Code in the student handbook for more details about how you are expected to conduct yourself while at UNF. `http://www.unf.edu/deanofstudents/student_handbook.aspx`

Academic Integrity

While there may be some time provided in class to work on the projects, they are completed primarily outside of class. You are encouraged to learn from each other and discuss the projects; however, you are expected to create each project yourself. **Do not share your source code or project files with others and do not use somebody elses source code or project files, including code found on the Internet. If that occurs, the person who provided the files and the person(s) who used them will receive the score of zero for that project and will be reported for an academic integrity violation.**

End of every chapter there are problems designed to help you learn the material. You are encouraged to work together on these if it will help you to learn the material. Please review the complete UNF Academic Integrity Code found at `http://www.unf.edu/catalog/policies/Policies_and_Regulations/` and the Florida Computer Crimes Act found at `https://www.unf.edu/its/polproc/Computer_Crimes.aspx`.

Disability Resource Center (DRC)

Students with disabilities who seek reasonable accommodations in the classroom or other aspects of performing their coursework must first register with the UNF Disability Resource Center (DRC) located in Building 57, Room 1500. DRC staff members work with students to obtain required documentation of disability and to identify appropriate accommodations as required by applicable disability laws including the Americans with Disabilities Act (ADA). After receiving all necessary documentation, the DRC staff determines whether a student qualifies for services with the DRC and if so, the accommodations the student requires will be provided. DRC staff then prepares a letter for the student to provide faculty advising them of approved accommodations. For further information, contact the DRC by phone (904) 620-2769, email (drc@unf.edu), or visit the DRC website (`http://www.unf.edu/drc/`).

Military and veteran students who return from combat exposure may be utilizing the post 9/11 GI bill to continue post-secondary education goals and may need both physical and academic accommodations. Contact the Military and Veterans Resource Center (`http://www.unf.edu/military-veterans/`), by phone at (904) 620-2655 or by email at mvrc@unf.edu.

Student Technology

Information Technology Services provides online information about technology topics including, Canvas, email, computer labs, etc. For more information, visit `http://www.unf.edu/its/For_Students.aspx`.

Continuity of Instruction Plan

In the event of disruption of normal classroom activities due to an emergency such as hurricane, pandemic, zombie apocalypse, or other unforeseen events, the format of this course may be modified in order to enable completion of the course requirements. In that event, you will be provided an addendum to this syllabus that will supersede this version. It is your responsibility as a student participant to be proactive during any emergency to find instructions that I will post on Canvas and send via email which you should check daily.

Non-Discrimination, Equal Opportunity and Diversity Statement

The University of North Florida (UNF) is committed to providing an inclusive and welcoming environment for all who interact in our community. Please read the Non-Discrimination, Equal Opportunity and Diversity Statement at `https://www.unf.edu/eod/Non-Discrimination,_Equal_Opportunity_and_Diversity_Statement.aspx`.