Pattern Recognition
ECSE 4410/6410
Fall 2022

Course Plan

Course Instructor - Thirimachos Bourlai

August to Dec 2022

Please Check the 2022 Syllabus

ECSE 4410/6410

Description:

- Pattern recognition is the imposition of identity on input data via the recognition and description of the contained patterns and their relationships.
- The course will discuss the pattern recognition stages and topics including Bayesian Decision Theory, Estimation Theory, Linear Discrimination Functions, Nonparametric Techniques, Support Vector Machines, Neural Networks, and Clustering Algorithms.
- The course is focused on applying engineering problems and solutions (for example: object detection, recognition and tracking).

ECSE 4410/6410

- **In person (primarily)**
- **Hybrid Synchronous, only when necessary and commonly agreed**
  - A certain number of students (as determined by the classroom capacity) join the instructor on a rotating basis for socially-distanced, face-to-face instruction during each class session, with r**emaining students primarily joining synchronously through Zoom** (or some other secure platform) during assigned class hours
  - The class will meet at the regularly scheduled days/times with some students attending in-person on campus and some students attending via Zoom or remotely.

Instructor and Office Hours

- **Name**: Thirimachos Bourlai
- **Email**: T*hirimachos.Bourlai@uga.edu*
- **Office**: 115 Boyd
- **Office Hours –**

  In Person or Zoom (when needed or requested):

- Every Wednesday 8:30 a.m. – 9:30 a.m.
- If students need to see the instructor at any other time, they are kindly requested to make an appointment by telephone or e-mail.
- E-mail is the preferred means of communication.
- In person meetings, if needed, only by adhering to the UGA's health policies

Lecture Details

- **Time:** Mon, Wed, and Fri, 11:30 am - 12:20 pm
- **Building (1090) → Room (1355)**
- **In-Person and Online – via Zoom (when needed)**

- Additional Notes:
  - New Course – thank you for selecting my course
  - Based on the feedback from this year's students: changes are expected in the material; project and evaluation process next year
  - Invited Speakers
    - Lectures from experienced personnel – internal and external to UGA

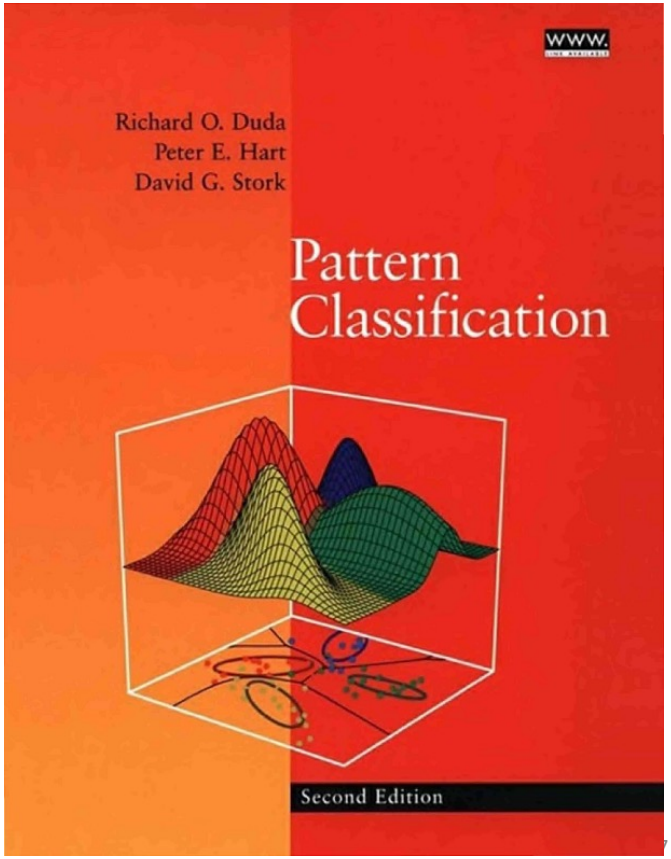
Textbooks

- **Main Book:** Pattern Classification by Duda, Hart and Stork, Second Edition, ISBN: 9-780471056690

- **Suggested Material that will help you**:
  - https://www.oreilly.com/library/view/hands-on-machine-learning/9781098125967/
  - C. M. Bishop, "Pattern Recognition and Machine Learning", 2006
  - Computational Statistics Handbook with MATLAB (3rd Edition or later) - Book by Angel R. Martinez and Wendy L. Martinez
  - Nixon & Aguado; Feature Extraction and Image Processing for Computer Vision (3rd Edition or later)

Required Textbook

- **Pattern Classification (2nd Edition),**
  ISBN: 9-780-471-056-690



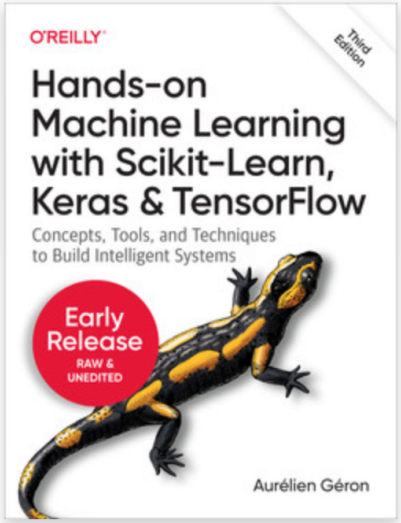
Suggested Textbook

O'REILLY®

TEAMS INDIVIDUALS FEATURES BLOG CONTENT SPONSORSHIP SIGN IN TRY NOW

See everything available through the O'Reilly learning platform and start a free trial. Explore now.

Search



Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow, 3rd Edition

by Aurélien Géron
Released October 2022
Publisher(s): O'Reilly Media, Inc.
ISBN: 9781098125974

Read it now on the O'Reilly learning platform with a 10-day free trial.

O'Reilly members get unlimited access to live online training experiences, plus books, videos, and digital content from O'Reilly and nearly 200 trusted publishing partners.

Suggested Textbook

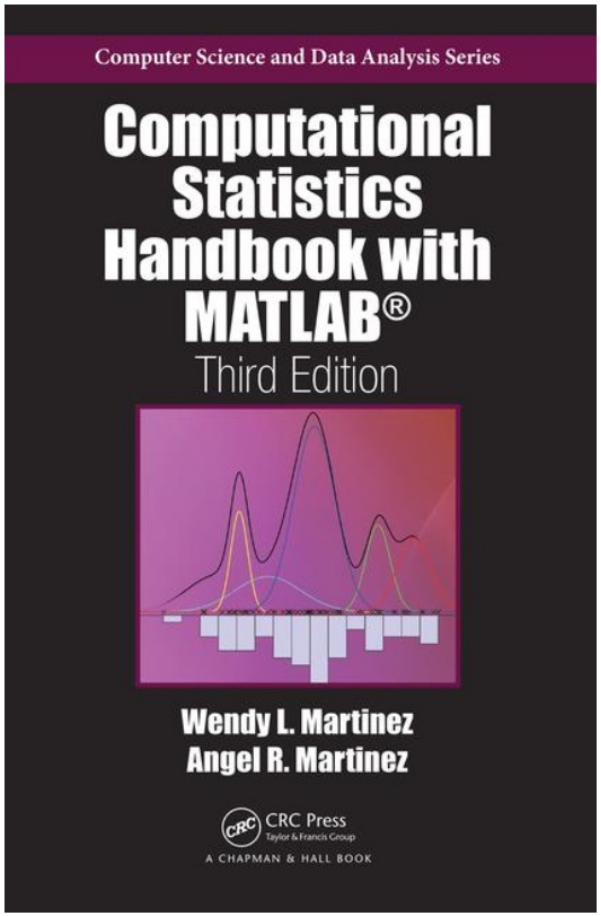
Book description

Through a recent series of breakthroughs, deep learning has boosted the entire field of machine learning. Now, even programmers who know close to nothing about this technology can use simple, efficient tools to implement programs capable of learning from data. This best-selling book uses concrete examples, minimal theory, and production-ready Python frameworks--scikit-learn, Keras, and TensorFlow--to help you gain an intuitive understanding of the concepts and tools for building intelligent systems.

With this updated third edition, author Aurelien Geron explores a range of techniques, starting with simple linear regression and progressing to deep neural networks. Numerous code examples and exercises throughout the book help you apply what you've learned. Programming experience is all you need to get started.

- Use scikit-learn to track an example machine learning project end to end
- Explore several models, including support vector machines, decision trees, random forests, and ensemble methods
- Exploit unsupervised learning techniques such as dimensionality reduction, clustering, and anomaly detection
- Dive into neural net architectures, including convolutional nets, recurrent nets, generative adversarial networks, and transformers
- Use TensorFlow and Keras to build and train neural nets for computer vision, natural language processing, generative models, and deep reinforcement learning
- Train neural nets using multiple GPUs and deploy them at scale using Google's Vertex AI

Suggested Textbook



Summary

A Strong Practical Focus on Applications and Algorithms

Computational Statistics Handbook with MATLAB®, Third Edition covers today's most commonly used techniques in computational statistics while maintaining the same philosophy and writing style of the bestselling previous editions. The text keeps theoretical concepts to a minimum, emphasizing the implementation of the methods.

New to the Third Edition

This third edition is updated with the latest version of MATLAB and the corresponding version of the Statistics and Machine Learning Toolbox. It also incorporates new sections on the nearest neighbor classifier, support vector machines, model checking and regularization, partial least squares regression, and multivariate adaptive regression splines.

Web Resource

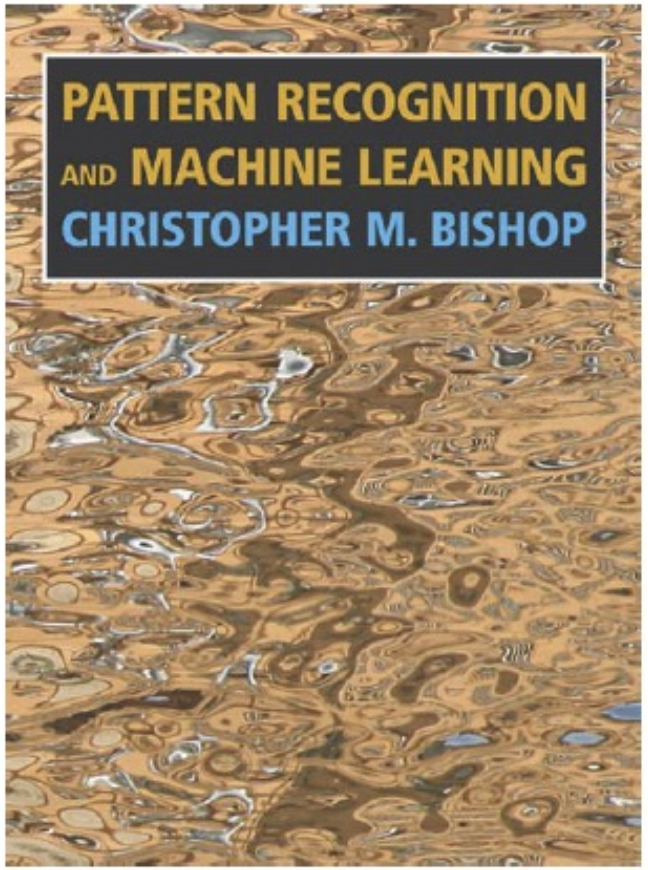
The authors include algorithmic descriptions of the procedures as well as examples that illustrate the use of algorithms in data analysis. The MATLAB code, examples, and data sets are available online.

Suggested Textbook

- **Pattern Recognition and Machine Learning**

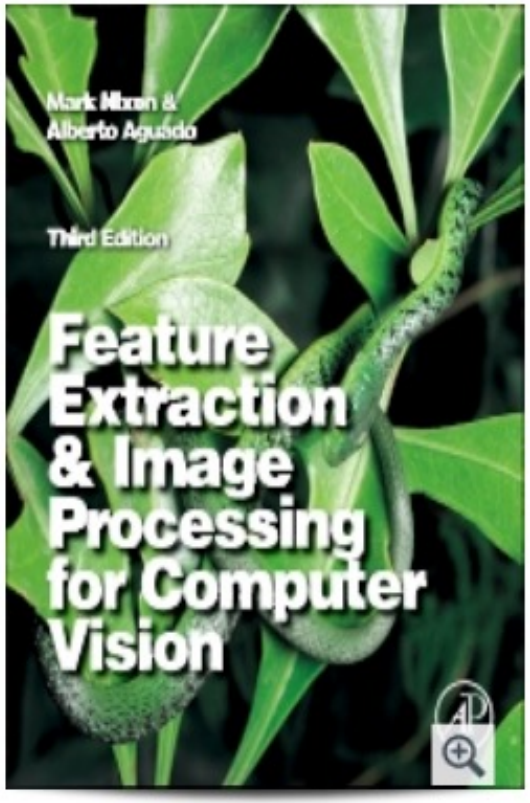
Christopher Bishop, Springer, 2006.

- Excellent on classification and regression



Suggested Textbook

Feature Extraction & Image Processing for Computer Vision, 3rd Edition



Author(s) :	Nixon & Aguado
Release Date:	25 Sep 2012
Imprint:	Academic Press
Print Book ISBN :	9780123965493
eBook ISBN :	9780123978240
Pages:	632
Dimensions:	235 X 191

Full coverage of the theory and implementation of feature extraction algorithms and techniques - revised and updated with the latest developments and new tutorials

Other Reading Material

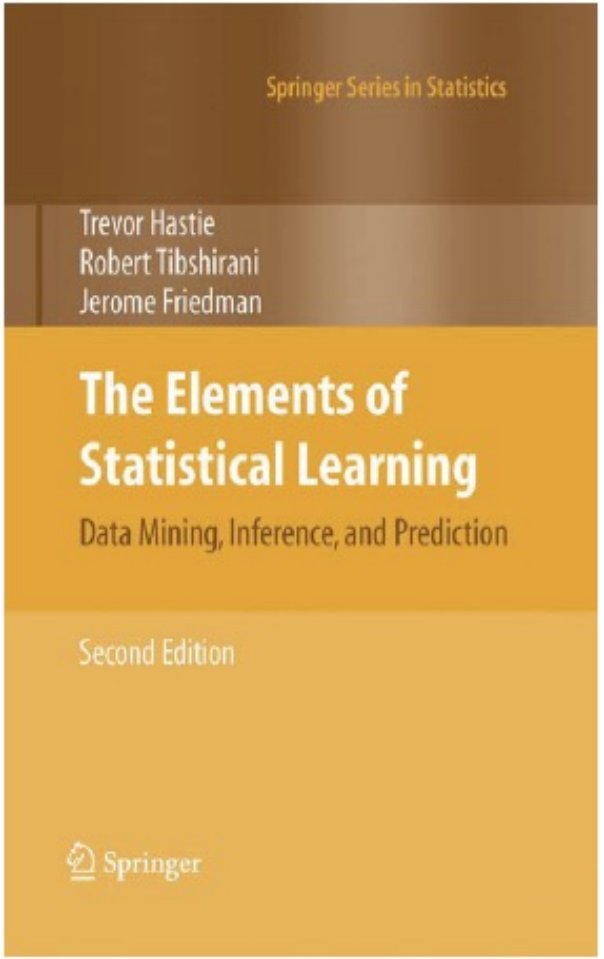
- **Fukunaga**, "Introduction to Statistical Pattern Recognition".
- **Pavlidis**, "Structural Pattern Recognition".
- **Gonzalez and Wintz**, "Syntactic Pattern Recognition".
- **Devijver and Kittler**, "Pattern Recognition: A Statistical Approach“.

Other Reading Material

- **Elements of Statistical Learning**

Hastie, Tibshirani, Friedman,
Springer, 2009, second edition

- Good explanation of algorithms
- pdf available online



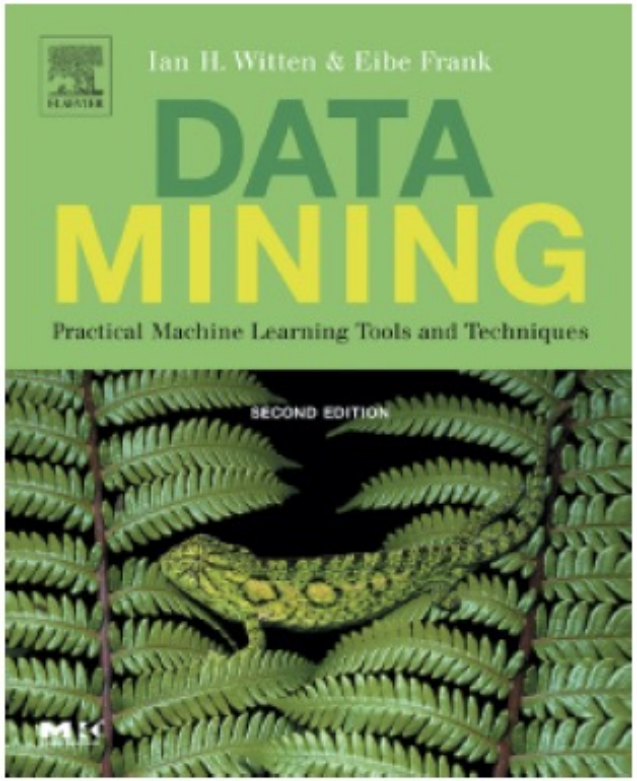
Other Reading Material

- Data Mining: Practical Machine Learning Tools and Techniques (Second Edition)

Ian Witten & Eibe Frank,

Morgan Kaufmann, 2005.

  - Very readable and practical guide



Prerequisites and Expectations

UGR students

- 1301 or ELEE 2040
- ENGR 2090 Probability & Statistics for Engineers

All students

- An undergraduate level understanding of **probability**, **statistics** and **linear algebra** is assumed
- Basic knowledge on **Signal** and **Image Processing** is essential
- Basic to Intermediate knowledge of **MATLAB** is essential
- Experience in other programming languages is recommended (C, C++, C#, Python)

Course Description

- This course will introduce, to a UGR and GRA audience, *salient topics* in **statistical pattern recognition**.

These include concepts in:

  - Bayesian decision theory
  - Parametric and non-parametric density estimation schemes
  - Linear discriminant functions
  - Neural networks
  - Clustering

- Topics in feature extraction, and PR case studies (biometrics) will also be visited.

- The project component of this course will test the student's ability to design and evaluate classifiers on appropriate datasets.

Course Topics *(Expected to Cover)*

- This course will introduce a graduate audience to salient topics in Machine Learning, and Pattern Recognition - (Supervised and Unsupervised Learning):
- Supportive Material to Linear Algebra and Probability Theory
    - Introduction to pattern recognition
    - Linear Regression
    - Logistic Regression
    - Gradient Descent
    - Neural Networks
    - SVMs
    - Bayesian decision theory
    - Linear Discriminant functions
    - Clustering
    - Dimensionality Reduction
        - Principal Component Analysis, Multidimensional Scaling and Isomaps
    - Density estimation schemes
    - Nearest-neighbor rule
    - Feature Extraction (briefly – supportive material)
    - Pattern Recognition Case Studies (Invited Speakers / Experts)

- <u>The topics will be taught not necessarily in the aforementioned order</u>.

Fall 2022

Based on 50 minute classes (MWF), 75 minute classes (TTH), 15 weeks of classes + Exams

Orientation	Aug. 15	Monday
Advisement	Aug. 15	Monday
Registration	Aug. 16	Tuesday
Classes Begin	Aug. 17	Wednesday
Drop / Add for undergraduate and graduate level courses	Aug. 17 – 23	Wednesday – Tuesday
Holiday: Labor Day – No Classes	Sept. 5	Monday
Midterm	Oct. 10	Monday
Withdrawal Deadline	Oct. 24	Monday
Fall Break	Oct. 28	Friday
Last Day of Classes prior to Thanksgiving Break	Nov. 22	Tuesday
Holiday: Thanksgiving – No Classes	Nov. 23– 25	Wednesday – Friday
Classes Resume	Nov. 28	Monday
Friday Class Schedule in Effect	Dec. 6	Tuesday
Classes End	Dec. 6	Tuesday
Reading Day	Dec. 7	Wednesday
Final Exams	Dec. 8 – 14	Thursday – Wednesday
Commencement	Dec. 16	Friday
Grades Due	Dec. 19	Monday, 12 PM

Week #	Date	Lecture #	Lecture Topic Covered
Week 1	17-Aug-22	L#1	#L1 PR - Week 1 - Class 1 - Class Intro 2022
	19-Aug-22	L#2	#L2 PR - Week 1 - Class 2 - Background Material
Week 2	22-Aug-22	L#3	#L3 PR - Week 2 - Talk About Data in Machine Learning
	24-Aug-22	L#4	#L4 PR - Week 2 - Pattern Recognition - Intro Oxford
	26-Aug-22	L#5	#L5 PR - Week 3 - Matlab Binder - Introduction to ML 2022 with links
Week 3	29-Aug-22	L#6	#L6 PR - Week 3 - ML Problem Checklist
	31-Aug-22	L#7	#L7 PR - Week 3 - Duda Chapter 1 - Part 1 Upload
	2-Sep-22	L#8	#L8 PR - Week 4 - Duda Chapter 1 - Part 2 Upload
Week 4	5-Sep-22	**DAY OFF**	**NO CLASS**
	7-Sep-22	**Students PPTs**	Present their IDEAS for a Project
	9-Sep-22	L#9	#L9 PR - Week 4 - Duda Chapter 2 - Bayes Decision Rules
Week 5	12-Sep-22	L#10	#L9 PR - Week 4 - Duda Chapter 2 - Bayes Decision Rules - Cont.
	14-Sep-22	L#11	NG 1
	16-Sep-22	L#12	NG 2
Week 6	19-Sep-22	L#13	NG 3
	21-Sep-22	**DAY OFF**	**NO CLASS**
	23-Sep-22	L#14	NG Overfit and Underfit
Week 7	26-Sep-22	L#15	Linear Regression Master ML
	28-Sep-22	L#16	Logistic Regression Master ML
	30-Sep-22	L#17	LDA Master ML
Week 8	3-Oct-22	**Students PPTs**	Present their Phase 1 for a Project
	5-Oct-22	L#18	Gradient Descent - Andrew NG and Master ML Book
	7-Oct-22	L#19	Design Aspects - What next --- and, Review Lectures 2-18
Week 9	**10-Oct-22**	**MID TERM**	**NO CLASS**
	12-Oct-22	L#21	Supervised Learning 1
	14-Oct-22	L#22	Supervised Learning 2

Week 10	17-Oct-22	L#23	Naïve and Gaussian Bayes Master ML
	19-Oct-22	L#24	NG NNs
	21-Oct-22	L#25	Into to Deep Learning
Week 11	24-Oct-22	L#26	Data Partitioning
	26-Oct-22	L#27	k-Nearest Neighbors Master ML
	28-Oct-22	**DAY OFF**	**NO CLASS**
Week 12	31-Oct-22	**Students PPTs**	Present their Phase 2 for a Project - Deeper Dive -- Group 1
	2-Nov-22	**Students PPTs**	Present their Phase 2 for a Project - Deeper Dive -- Group 2
	4-Nov-22	L#28	Clustering 1
Week 13	7-Nov-22	L#30	Clustering 2
	9-Nov-22	L#31	Clustering 3
	11-Nov-22	L#32	Sampling and Random Variables 1
Week 14	14-Nov-22	L#33	Sampling and Random Variables 2
	16-Nov-22	L#34	Learning Vector Quantization Master ML
	18-Nov-22	L#35	SVMs - Caltech
Week 15	21-Nov-22	L#36	SVM Master ML 1 and 2
	23-Nov-22	**DAY OFF**	**NO CLASS**
	25-Nov-22	**DAY OFF**	**NO CLASS**
Week 16	28-Nov-22	L#38	Ensemble Algorithms Master ML
	30-Nov-22	**Students PPTs**	Present their FINAL Phase 3 for a Project
	2-Dec-22	**Students PPTs**	Present their FINAL Phase 3 for a Project
Week 17	5-Dec-22	L#39	Conclusions Review - Discussion - Project Final Report Preparation
	LAST DAY Dec 6th 2022		

Weight/Distribution of Course Points

- The tentative weight associated with each grading component is as follows:
  - Homework and Quizzes - 10%
  - Project: Meeting Milestones & Reports - 15%
  - Midterm exam - 25%
  - Project* - 50%, including
    - Task 1: Final Project Report,
    - Task 2: Presentation / DEMO that the code is working
    - Task 3: Code submitted – Instructor will check (code and readme file / how to run).
    - Tasks 1-3 are expected to be submitted via a Google Drive or equivalent

Note on Grade Assessment: the project counts 50% and the students will be assessed, evenly, on each of the tasks above, namely, Final Progress Report; Presentation/Demo; and Code.

Requirements: GRAs

- **Required to** have completed a full project related to machine learning, run existing and/or, preferably, generate new code
- **Required to** make modifications to code/programs found online, not just run it as is, and design and run their own experiments
- **Expected** to explain the project, processes and generated outcomes and what they did different in case their starting point is a project/code found online. *The recommendation will be to design and develop their own code and as a starting point find a paper with associate code*
- **Required to** share the code for assessment, present their work and submit a final report

Requirements: UGRs

- **Required** to find code online and run the code they found *as is – no alterations will be expected although encouraged*
- ***E*xpected** to briefly explain the project, processes and generated outcomes
  - *The recommendation will be to find a paper with associate code to start working with*
- **Required** to share the code for assessment, present the paper their found online and submit a final report

Grading *(Assignment/Scale)*

The grading scheme (%) will be as follows:

- A >= 90
- B >= 80, <90
- C >= 70, <80
- D >= 60, <70
- F <60

Grading Policy

- A hard copy of the **homework** and **project reports** must be turned in before lecture begins on the due date.
- No make-up for midterm and finals, including demo presentations for individuals or a group of students.
- Make-up for exams will be issued only under exceptional circumstances provided prior arrangements are made with the instructor.
- Instructor reserves the right to deny requests for make-up exams.

Outcomes

- A good knowledge of Bayesian decision theory and Bayesian learning.
- Fundamental understanding of feature extraction (selected topics), and of classifiers such as nearest-neighbor rule, linear discriminant function, neural networks and SVMs.
- Ability to evaluate the performance of various classifiers on real-world datasets.

Project Presentations (1/2)

- Students are **expected to** present their Presentation/DEMO via ZOOM on the same dates as originally planned – a plan will be present and shared with the students.
- **Share** their screen and present.
- If they cannot connect and present for ANY reason (due to bandwidth etc.) → they are **expected to** *send a recorded presentation*, namely one presentation for each student, independent on the group they are at (if they are part of a group project).
  - *Note*: Instructor will send one ZOOM invite to all students that are expected to attend, i.e. one invited for Days 1 and 2 during the last week of November 2022.

Project Presentations (2/2)

- ***Time** the presentations start and end*: during regular course hour or longer if necessary since we may be in Zoom (if needed or requested and granted).
- ***Duration** of presentations*: no less than 10 min per person.
- ***Structure** of presentations:*
  - **Slide 1:** **Title etc.**
  - **Slide 2:** **Problem you are solving**
  - **Slides 3-6:** **Tools you are using to solve the problem**
    - Datasets; Methodology; Approach; Algorithmic Steps; How do you establish a baseline; How do you assess performance (e.g. on detection to see at IOU 50%; for X proposals; Precision and Recall etc.)
  - **Slides 7:** **Experiments you performed**
  - **Slide 8-9:** **Results**
  - **Slide 10:** **Conclusions**
  - **Slide 11:** **Thank you; Q&A**

Project – Note

- **It is not acceptable** that the students propose to work on a class project that is the **same/similar as the one they work in their own research**,

  > i.e. funded work in their labs.

Project

- Pick topic by Sept 15th, 2022 the latest
  - You are expected to present your project idea, 2-3 min – 1 Slide each student, on Sep 8th, 2022;
  - Update ppts once per month;
  - Final ppts last 2 lectures of the semester.
- I will suggest ideas and datasets to be used

  e.g. Stanford Projects
- Keys towards high grade:
  - To have new/original ideas or approaches to solve existing problems (published or not)
  - To prove via DEMO and code submitted that your solution is practical and solves (as well as possible) the problem

Projects to pick for 2022

- **Project 1**: Detecting a disguised vs. a real voice
- **Project 2:** Generating and Detecting Synthetic Faces (Face Morphing)
- **Project 3**: Generating and detecting fake face images (Face Spoofing)
- **Project 4**: Palm or Vein Recognition
- **Project 5:** Generate synthetic professional cards; Detect and recognizing all letters and word on the card (suggested by a student)
- **Project 6**: Fingerprint Recognition; fingerprints captured by cameras (photos)
- **Project 7**: Detect Pneumonia vs. normal using X-Rays (or similar)

Any other project using imagery … you can propose (medical, surveillance etc.)

Projects to pick for 2022 – Top Selections

- Generate Data in https://store.unity.com/products/unity-pro

And then…

- Detect Cracks on walls, cars etc.
- Recognize type of cracks on walls, cars etc.

- Detect Objects on your generated scene
- Recognize Objects on your generated scene

- Case Study: https://unity.com/products/computer-vision

  Learn how Boeing worked with Unity to generate over 100,000 synthetic images to better train the machine learning algorithms of its augmented reality (AR)-powered aircraft inspection application.

Project Planning

- Smart selection of project partners - Realistic and fast planning
- Follow plan/meet milestones (the best way possible)
- Find fast, annotate and pre-process the dataset you will use
- Identify performance measures
- Find a paper relevant to your selected project
- Find code
- Provide a solution

Homework & Project Updates

- Aug 30th, Sept 30th, Oct 30th and Nov 30th 2022
- **Homework** - by the deadline assigned
- **Projects**: by the **end of each month** → project report (its selection by Sep 30th)

Project Report Structure

Class; Title; Project Participants; Date

1. Project Overview

- General Problem Description
- Literature Review
- What you will do: DBs, code etc.

2. Project Schedule

2.1 Timeline Chart by Task
2.2 Project Phases, Milestones
2.3 Deliverables (code, demo, reports)

3. Experiments / Results / Conclusion
(updated per month)

FINAL Project Structure

(Submission: Semi-Final Week)

Title/ Participants

1. Introduction
2. Literature Review
3. Methodology (Theory/Tools)
4. Experiments/Results
5. Conclusions

Class Rules

- Be Professional
- Be on Time – Start on Time
- Mindful of Technology – Keep Laptops and Cell Phones closed during lecture
- Respect all the teaching and learning processes
- Respect your instructor
- Respect each other

Note: The lecturer does not consent on Audio/Video recording of live lectures. Recording of conversations before or after the class is not allowed.

Resources

- Lecture updates (eLC)
- Matlab Tutorial:
    - MathWorks - Matlab Tutorial
    - A Matlab Primer - Kermit Sigmon
- Datasets:
    - FunSpec Dataset
    - MNIST database of handwritten digits
    - Netflix Prize
    - The UCI Machine Learning Repository
    - National Space Science Data Center
    - Financial Data Finder at OSU
    - Enron Email Dataset

Course Attendance Policy

UGA Policy due to COVID: This is a in person course --> students must have an **approved accommodating** that he/she can take it fully online.

- Missing or late submission of presentations and reports receive zero credit.
- Makeup exams and quizzes for university-excused reasons **only** (illness, family emergency, etc.).
- Notice must be given prior to missed exam/quiz via university email.
- Unexpected missing exams and quizzes will result in zero credit.
- Attendance is not mandatory but highly recommended.

The UGA class attendance policy has not changed this semester.

Attendance Policy – by UGA

"We continue to receive some inquiries about attendance policy. As a reminder, the policy has not changed, and faculty can adopt attendance requirements that best suit their classes. However, we anticipate a few students needing to quarantine/isolate (especially early in the semester) and class attendance requirements and we must remain sufficiently flexible to address these needs. We also have received inquiries about students desiring online accommodations in face-to-face and hybrid courses. **Students without a DRC accommodation need to make plans to follow instructor guidelines as outlined in their syllabus"**

Participation Policy

Participation in within-class examples and discussion is strongly encouraged but it will not be assessed

Late Assignment and Missed Exam Policy

Excused exam/quiz absence must be retaken as soon as the student is able to return to campus

and

should be scheduled prior to original exam date if possible

Institutional Policies @UGA

- Students are responsible for reviewing policies on:

  Research Misconduct Policy

  Academic Honesty

  Student Sexual Misconduct Policy

  Inclement Weather

  Course Evaluations

  Religious Holidays Attendance Policy

  Grade Changes And Incomplete (I) Grades and Appeals

  Any policy relevant to selling of course materials

Assistants

- Please be patient with the TA's (if/when they needed)
- They are not officially assigned by ECE
  - Have no option but to request their assistance when travelling
- TA's are students just like you → their purpose is to try and assist you the best way possible

Discussion points for this semester

Face coverings:
Following guidance from the University System of Georgia, face coverings are recommended for all individuals while inside campus facilities.

How can I obtain the COVID-19 vaccine?
University Health Center is scheduling appointments for students through the UHC Patient Portal (https://patientportal.uhs.uga.edu/login_dualauthentication.aspx). Learn more here – https://www.uhs.uga.edu/healthtopics/covid-vaccine.

The Georgia Department of Health, pharmacy chains and local providers also offer the COVID-19 vaccine at no cost to you. To find a COVID-19 vaccination location near you, please go to: https://georgia.gov/covid-vaccine.

Discussion points for this semester

The Georgia Department of Health, pharmacy chains and local providers also offer the COVID-19 vaccine at no cost to you. To find a COVID-19 vaccination location near you, please go to: https://georgia.gov/covid-vaccine.

In addition, the University System of Georgia has made COVID-19 vaccines available at 15 campuses statewide and you can locate one here: https://www.usg.edu/vaccination

What do I do if I have COVID-19 symptoms?
Students showing COVID-19 symptoms should self-isolate and schedule an appointment with the University Health Center by calling 706-542-1162 (Monday-Friday, 8 a.m.-5p.m.). Please DO NOT walk-in. For emergencies and after-hours care, see, https://www.uhs.uga.edu/info/emergencies.

Discussion points for this semester

What do I do if I test positive for COVID-19?

If you test positive for COVID-19 at any time, you are **required to report it** through the DawgCheck Test Reporting Survey. We encourage you to stay at home if you become ill or until you have excluded COVID-19 as the cause of your symptoms. UGA adheres to current Georgia Department of Public Health (DPH) quarantine and isolation guidance and requires that it be followed. Follow the instructions provided to you when you report your positive test result in DawgCheck.

Discussion points for this semester

Guidelines for COVID-19 Quarantine Period (As of 8/1/21; follow DawgCheck or see DPH website for most up-to-date recommendations)

*Students who are fully vaccinated **do not** need to quarantine upon exposure unless they have symptoms of COVID-19 themselves. All others should follow the Georgia Department of Public Health (DPH) recommendations:*

Students who are not fully vaccinated and have been directly exposed to COVID-19 but are not showing symptoms **should self-quarantine for 10 days**. Those quarantining for 10 days must have been symptom-free throughout the monitoring period and continue self-monitoring for COVID-19 symptoms for a total of 14 days. You should report the need to quarantine on DawgCheck (https://dawgcheck.uga.edu/), and communicate directly with your faculty to coordinate your coursework while in quarantine. If you need additional help, reach out to Student Care and Outreach (sco@uga.edu) for assistance.

Students, faculty and staff who have been in close contact with someone who has COVID-19 are no longer required to quarantine if they have been fully vaccinated against the disease and show no symptoms.

Discussion points for this semester

Well-being, Mental Health, and Student Support

If you or someone you know needs assistance, you are encouraged to contact Student Care & Outreach in the Division of Student Affairs at 706-542-7774 or visit https://sco.uga.edu/.

They will help you navigate any difficult circumstances you may be facing by connecting you with the appropriate resources or services.

UGA has several resources to support your well-being and mental health: https://well-being.uga.edu/

Counseling and Psychiatric Services (CAPS) is your go-to, on-campus resource for emotional, social and behavioral-health support: https://caps.uga.edu/, TAO Online Support (https://caps.uga.edu/tao/), 24/7 support at 706-542-2273. For crisis support: https://healthcenter.uga.edu/emergencies/.

The University Health Center offers FREE workshops, classes, mentoring and health coaching led by licensed clinicians or health educators: https://healthcenter.uga.edu/bewelluga/

Discussion points for this semester

Monitoring conditions:

Note that the guidance referenced in this syllabus is subject to change based on recommendations from the Georgia Department of Public Health, the University System of Georgia, or the Governor's Office or. For the latest on UGA policy, you can visit coronavirus.uga.edu.

Q & A

Thank you!