



IUPUI

SCHOOL OF INFORMATICS AND COMPUTING
Department of Human-Centered Computing

INFO-I400

Social Impact of Bots and Automation

Fall 2020

Instructor:	Dr. Fawzi BenMessaoud	Phone Contact:	317-525-2214	Credit Hours:	3 Hours
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Pre-requisites & Co-requisites:	None	Term:	Fall 2020	Instruction Mode	On Line

Course Description:

This course examines the disruptive effects of process automation on social, economic, and global environments and how organizations adopt artificial intelligence and other technologies to process unstructured and uncurated data. The course also introduces applications of cognitive automation with bots in various industries and their implications.

Topics:

- Organizational digital transformation and automation
- How artificial intelligence (AI) and robotic process automation (RPA) impact organizations and society
- Organizational cognitive automation and bots
- The implications of AI and RPA applications for organizations and society
- Ethical and global issues of AI and RPA enterprise adoption

Learning Objectives:

1. Appraise research on achieving goals by designing cognitive virtual agents (bots) that process unstructured data with machine learning and natural language processing.
2. Evaluate and report on the applications of AI and RPA to business, organization, and technology and their implications using current events.

3. Evaluate how process automation and artificial intelligence (AI) are performing repetitive and administrative tasks with more speed, reliability, and compliance than human workers.
4. Experiment with how bots can be goal oriented and reactive to the environment by accomplishing different types of tasks or managing projects in different environments.
5. Examine the need for an organization to have a digital transformation plan that considers their knowledge base and organizational structures before investing in automation.
6. Examine how to apply bots in planning, reporting, risk management, work scheduling, employee's selection, evaluating legal documents, finance, and accounting.
7. Identify the pros and cons of using bots, including whether their adoption is freeing employees to address higher-level tasks or eliminating their jobs.
8. Make use of a real-world deployment of bots in the Internet-of-things and evaluate how it is disrupting one of the following: field service automation (FSA), maintenance, repair, and operations (MRO), industrial automation, call centers, or enterprise asset management (EAM) markets.
9. Adapt selected approaches to better understand implications and perspectives on the deployment of AI and RPA and the adoption of cognitive automation with bots.

Course Resources:

Weekly readings from various sources will be provided in the **“Reading Assignments”** in **Canvas**, such as papers, trend reports, and selected chapters on AI Bots and Cognitive Automation and the social and organizational impact, including following examples.

Chatbots: The Definitive Guide (2020), Artificial Solution.

<https://iu.instructure.com/courses/1924138/files/108702558/download?wrap=1>

Coleman, M. C. 1. colemanm@seattleu.edu. (2018). Bots, Social Capital, and the Need for Civility. *Journal of Media Ethics*, 33(3), 120–132. <https://doi.org/10.1080/23736992.2018.1476149>

OECD, & OCDE. (2019). Determinants and impact of automation: An analysis of robots' adoption in OECD countries. *OECD Digital Economy Papers*. <https://doi.org/10.1787/ef425cb0-en>

Shatzer, J. (2019). Robots, Jobs, and Leisure: Being Human in the Face of Technological Disruption. *Ethics & Medicine: An International Journal of Bioethics*, (2), 83. Retrieved from https://www.ulib.iupui.edu/cgi-bin/proxy.pl?url=https://search.ebscohost.com/login.aspx?direct=true&db=edsgih&AN=e_dsgcl.596403585&site=eds-live

Selected chapters from the Information Resources Management Association (2019). *Rapid Automation: Concepts, Methodologies, Tools, and Applications*. Information Resources Management Association, USA. ISBN-13: 9781522580607.

Tripathi, Alok Mani (2018). *Learning robotic process automation*. Birmingham, UK: Packt Publishing. ISBN-13: 978-1788470940.

Course Learning, Teaching and Assessment Strategy:

Informatics has two axes: One is technical, running from the logical and mathematical foundations of information technology to issues of distributed information and knowledge systems. The other is the human, from the individual working with technology in human–computer interaction to groups interacting via computers with each organizations and society.

This course belongs to the second axis and, specifically, its sociological end. It focuses on the organizational digital transformation in today’s data-driven economy caused by cognitive automation, including AI and bots. The course acquaints students with how bots are being created for chatting, messaging, stock trading, and knowledge searching. The course emphasizes how AI and RPA are becoming key to automation and automating insights in most any industry or discipline. The course helps students prepare for a work environment where organizations are racing to automate workflows and processes across platforms and channels. The course also promotes the students’ awareness of bots adoption, which is increasing in all enterprises—a trend predicted to continue by experts, the World Economic Forum, and businesses in all sectors.

The assessment strategy adopted along with the assisted and non-assisted learning modes for this course consist of a balanced mix of graded formative and summative assessment categories, including Exams, Discussion Questions, analysis of Current Events and Trend Reports, Cases Analysis, and Projects. This assessment strategy also adopts learning outcomes and a rubrics approaches focused on providing students every opportunity to practice the following in their deliverables:

1. Research & Discover
2. Analyze & Synthesize
3. Organize & Report
4. Present in-person or deliver virtually online with embedded audio/video presentations

Course Learning Outcome	Program Learning Outcome	RBT*	Level**	SWC†	PLUS‡	Assessment & Evaluation
1. Appraise research on achieving goals by designing cognitive virtual agents (bots) that process unstructured data with machine learning and natural language processing.	A2: Evaluate and create interfaces by applying user experience design principles, methods, and theories	5	I	5.3	P1.1 Communicator – Evaluates information P3.2 Innovator – Creates/designs	<ul style="list-style-type: none"> • Discussion Questions • Case Analysis
2. Evaluate and report on the applications of AI and RPA to business, organization, and technology and their implications using current events.	B4: Develop insights from data and apply them to address problems and explore opportunities	5	R	5.4	P3.1 Innovator – Investigates P3.4 Innovator – Makes decisions	<ul style="list-style-type: none"> • Discussion Questions • Case Analysis • Exams
3. Evaluate how process automation and artificial intelligence (AI) are performing repetitive and administrative tasks with more speed, reliability, and compliance than human workers.	C2: Evaluate various data mining and machine learning algorithms	5	I	5.6	P2.3 Problem Solver – Analyzes, synthesizes, and evaluates	<ul style="list-style-type: none"> • Discussion Questions • Exams
4. Experiment with how bots can be goal oriented and reactive to the environment by accomplishing different types of tasks or managing projects in different environments.	D1: Apply fundamental concepts of software architecture	3	I	5.1	P2.1 Problem Solver – Think critically P2.3 Problem Solver – Analyzes, synthesizes, and evaluates	<ul style="list-style-type: none"> • Final Course Project Part I & II • Current Events & Trend Reports
5. Examine the need for an organization to have a digital transformation plan that considers their knowledge base and organizational structures before investing in automation.	E4: Articulate the business considerations of technical knowledge	4	R	5.4	P1.4 Communicator – Conveys ideas effectively	<ul style="list-style-type: none"> • Discussion Questions • Exams • Case Analysis
6. Examine how to apply bots in planning, reporting, risk management, work scheduling, employee's selection, evaluating legal documents, finance, and accounting.	E4: Articulate the business considerations of technical knowledge	4	I	5.1 5.5	P1.4 Communicator – Conveys ideas effectively	<ul style="list-style-type: none"> • Current Events & Trend Reports • Case Analysis
7. Identify the pros and cons of using bots, including whether their adoption is freeing employees to address higher-level tasks or eliminating their jobs.	F2: Support the ethical and appropriate design and use of technology	3	I	5.2	P4.3 Community Contributor – Behave ethically P4.4 Community Contributor – Anticipates consequences	<ul style="list-style-type: none"> • Discussion Questions • Exams • Case Analysis • Current Events & Trend Reports
8. Make use of a real-world deployment of bots in the Internet-of-things and evaluate how it is disrupting one of the following: field service automation (FSA), maintenance, repair, and operations (MRO), industrial	F6: Work collaboratively as part of a team, including global teams	3	I	5.1 5.6	P2.2 Problem Solver – Collaborates P4.2 Community Contributor – Respectfully Engages Own and Other Cultures	<ul style="list-style-type: none"> • Final Course Project Part I & II • Current Events & Trend Reports

automation, call centers, or enterprise asset management (EAM) markets.						
9. Adapt selected approaches to better understand implications and perspectives on the deployment of AI and RPA and the adoption of cognitive automation with bots.	F6: Work collaboratively as part of a team, including global teams	6	I	5.3	P2.2 Problem Solver – Collaborates P4.2 Community Contributor – Respectfully Engages Own and Other Cultures	<ul style="list-style-type: none"> Final Course Project Part I & II Current Events & Trend Reports

* Revised Bloom’s taxonomy (RBT): 1. Remembering; 2. Understanding; 3. Applying; 4. Analyzing; 5. Evaluating; 6. Creating.

** Indicators of level of knowledge (Level): I – Introduce; R – Reinforce; M – Master

† **Statewide Competencies (SWC)**

5. Social and Behavioral Ways of Knowing

Upon completion of the Statewide Transfer General Education Core, students will

- 5.1 Demonstrate knowledge of major concepts, theoretical perspectives, empirical patterns, or historical contexts within a given social or behavioral domain.
- 5.2 Identify the strengths and weaknesses of contending explanations or interpretations for social, behavioral, or historical phenomena.
- 5.3 Demonstrate basic literacy in social, behavioral, or historical research methods and analyses.
- 5.4 Evaluate evidence supporting conclusions about the behavior of individuals, groups, institutions, or organizations.
- 5.5 Recognize the extent and impact of diversity among individuals, cultures, or societies in contemporary or historical contexts.
- 5.6 Identify examples of how social, behavioral, or historical knowledge informs and can shape personal, ethical, civic, or global decisions and responsibilities.

‡ **IUPUI Profiles of Learning for Undergraduate Success (PLUS)**

This course is designed to demonstrate IUPUI’s [Profiles of Learning for Undergraduate Success](#) (PLUS) aligned with the Instructional Learning Objectives, Assessment, and Outcomes.

Course Evaluation and Grading:

Students are evaluated on knowledge of textbook content, writing and presentation skills, analysis and application of thinking skills.

Grade Categories	Weight
Discussions Assignments	15%
Learning Acts	10%
RISE: Research and Case Analysis	20%
Current Events and Trend Reports	15%
Non-cumulative Exams	15%
Mile Marker: Final Course Project (FCP), Part I, II, and III	22%
Reflection (week 5, 10, and 15)	3%
Total:	100%

Grading Scale		
Letter Grade	Minimum Percentile	Interpretation
A+	>=101	Professional level work, showing highest level of achievement
A	94% to 100%	Extraordinarily high achievement, quality of work; shows command of the subject matter
A-	90% to 93%	Excellent and thorough knowledge of the subject matter
B+	87% to 89%	Above average understanding of material and quality of work
B	83% to 86%	Mastery and fulfillment of all course requirements; good, acceptable work
B-	80% to 82%	Satisfactory quality of work
C+	77% to 79%	Minimally acceptable performance and quality of work
C	73% to 76%	Minimally acceptable work; does not demonstrate mastery
C-	70% to 72%	Minimally acceptable work; minimum course grade allowable
D+	67% to 69%	Poor work
D	63% to 66%	Very poor work
D-	60% to 62%	Unacceptable work
F	< 60%	Failure

Note: All assignments submitted past the assigned due dates, will result in a 10% deduction within two weeks and 25% deduction for over two weeks. Discussion Questions must be submitted by midnight Friday for each week, and the second responses to peers are due each Sunday by midnight. Failure to meet the Sunday deadline will result in deduction of points.

Expectations/Guidelines/Policies:

Online Participation/Attendance – Discussion Board

Students must send an introductory email to the instructor by the first Thursday of the start of the class.

The introduction should include information about your background, interest in AI Bots and Cognitive Automation profession and career goals. The introduction can also include personal information regarding the state the student resides in, children, pets, hobbies, etc.

Collaborative Learning

Since this is an online course, students must confirm their participation/attendance on the Discussion Board. Using the Discussion Board allows the instructor to monitor the student's participation/attendance.

One of the best ways to learn new materials is to collaborate in groups. You are encouraged to discuss class materials and homework assignments with your classmates to help each other. However, the homework you hand in must be your own work, in your own words, and your own explanation.

Course Communications

Communication for this course are administered through IUPUI email. Please email me at fawzbenm@iupui.edu, make sure to add the course title in your subject line. Other students from different courses will be contacting me via this medium so a properly formatted subject line will aid our communication. All announcements, assignments, grades, tests, quizzes etc. will take place in Canvas.

Deadlines

To ensure the student's success in this course you must read all assigned readings to include book chapters and online articles. The power point slides contain lecture notes that are intended to add more in-depth understanding of chapter content. In the power point slides there are hyperlinks to provide a more information regarding the subject matter. Students are encouraged to use the hyperlinks as additional reading/research sources.

All class projects must be submitted according to their related due dates. It is important that students adhere to the class project due dates. Any project submitted late will result in a 5-point deduction each day it is late. Plagiarism will not be tolerated. When submitting written work, resources must be cited to give credit to the resource.

Please be aware there are deadlines for completion of the required projects, assignments, and exams. The student may proceed through the course faster than the prescribed calendar but you CANNOT fall behind. Students who proceed through the course at an accelerated rate must wait until the next unit/exam is open to proceed. No unit will be opened until the date posted.

Testing

Exams may be taken at any time during their availability. Only **one attempt** to take each exam is allowed. **It is not permitted to start the exam, log off your computer, and then come back at another time to complete the exam. The exam MUST be completed at one sitting.** Note the dates of the exam's availability. The exam grade will be available immediately after submitting the exam. There is no retaking of exams once graded. After the deadline, exams will not be available. The student will need to make special arrangements with the instructor to take the exam

after the posted deadline. There will be a ten (10) point reduction from the percentage scored on the exam if taken after the deadline. After one week the exam **WILL NOT** be available.

Incomplete:

The instructor may assign an Incomplete (I) grade only if at least 75% of the required coursework has been completed at passing quality and holding you to previously established time limits would result in unjust hardship to you. All unfinished work must be completed by the date set by the instructor. Left unchanged, an Incomplete automatically becomes an F after one year. <http://registrar.iupui.edu/incomp.html>

IUPUI's mission is derived from and aligned with the principal components—Communities of Learning, Responsibilities of Excellence, Accountability and Best Practices—of Indiana University's Strategic Directions Charter.

Hardware and software needed: You will need a reliable laptop with an Internet connection. You will use Canvas CL and Microsoft Office software; you may also wish to create graphics and presentations with a graphics package or/and suggested applications and tools provided in this course.

You will need some kind of storage medium to back up any files you produce for the class. Remember to back up your files frequently. If you lose your only copy of a file, I will sympathize with you, but you will still be responsible for assignments.

Student Responsibilities

Assignments: All assignments are posted under the Assignment Tab in Canvas CL; your assignment files should be sent back to me using that Tab's functionality. Even if you are submitting a late assignment, you can upload it under the Assignments tab. As a last resort, and only if you are having trouble with the Assignments tab, you may send me an assignment through Canvas e-mail.

Discussion Assignments and Posts: There are discussion questions, which require the student to respond to the discussion question by Friday at midnight, and the second responses to peers are due each Sunday by midnight. I will post two Discussion Questions (DQ) on readings and course objectives each week. The purpose of the discussion board is to allow students to engage in active conversation regarding theory and experiences. There is no limit to the number of times the student must respond to a question but there must be a **minimum of two responses** to each discussion posting by other learners.

Exams: There will be non-cumulative exams during the course of the semester. The exams will be consisting of multiple choice, true/false, fill in the blank and short answer/essay or short projects. Questions may be drawn from your book, from speakers, from class activities and additional readings as assigned. Because these are online exams, they will be "open book" and you will have access to all your materials. However, you will have a limited time window in which to take an exam and the ability to submit it one time, so it is best to be very familiar with the material if you want to quickly find/check an answer.

Research & Case Analysis: (RISE)

Students will review the presented case in class and conduct research for each of the three cases. Students will then compose a report with a summary of their analysis of the case and present a commentary in each category indicating how they relate to the need or/and impact of Bots and Automation. The RISE component in this course for Service and Experiential Learning is associated with the Research Case Analysis-1 and Case Analysis-2. As part of the hands-on community-based professional practice activities, students will select a company or an organization in their community where there is an opportunity to automate processes or/and repetitive and administrative tasks with more speed, reliability, and compliance. Students will research, evaluate, and then communicate the company's or organization's strategy for a Digital Transformation that includes Bots Automation. In the report and communication, students should address: (1) Pros and Cons for the selected Digital Transformation strategy using Bots Automation, (2) Benefits and valuable applications of Bots Automation in the selected area of opportunity to help the company or organization achieve more efficiency and success, (3) What will be the social and business impact from expanding this strategy and using Bots Automation to automate more processes or/and repetitive and administrative tasks. The Research and Case Analysis-3, involves students in conducting research then completing a report of their final analysis on an actual real-world example of Ai and RPA adoption by a known enterprise or organization.

Research & Case Analysis-1: Organizational Digital Transformation and Automation

Research & Case Analysis 2: Bots Automation in Recruiting and Employment.

Research & Case Analysis 3: AI and RPA in the Real World: An Enterprise Adoption.

Current Events and Trend Reports – Many of the fast-changing trends in AI and RPA can only be gleaned from current events and the latest innovation or discoveries in this field. Throughout this course, you will be responsible for 2 to 3 analysis of Current Events and Trend Reports. In each report you are asked to respond to case questions and summarize the AI and RPA current event that highlight how Bots and Cognitive Automation are shaping the digital transformation of organizations and the applications and implications of their deployment. You may collaborate with other learners in this class and complete these assignments as a group.

Final Course Project – The Final Course Project (FCP) is a **Mile Marker assignment** that allows students to work toward the completion of an FCP Final Report and Presentation in three parts. Each part is a separate assigned deliverable that builds toward the completion of the entire FCP with instructions, rubrics, and tracking of progress and status reports posted in the Assignment Tab in Canvas CL according to the course schedule. For more details and instructions see posted document “Final Course Project.”

FCP Part-I: My AI and Bots Automation Overview

In this first part, students would refer to their own experience in a work environment or interest in a given industry or organization, and use the BOTs for BOT chart to identify and select an opportunity for BOTs Automation and where smart robotization may be applied to automate

internal process(s), or workflows and human's interactions. Students will research and discuss how common are bots in their selected project, and provide their own Bots Automation case overview. In the overview, students will list and discuss the problems/challenges that will be addressed by their Bots Automation project in respect to each area in the Business, Organization, and Technology domains.

FCP Part-II: Data Analysis and Bot Selection

In the second part of the FCP, students will identify and complete a mind mapping diagram depicting the data and information interchange or dependencies between each area in the Business, Organization, and Technology domains for their selected BOTs Automation project. Students will then select the type of Bot most suitable for their Bots Automation project based on their data analysis and problems/challenges case assessment and diagram.

FCP Part-III: Final Report and Presentation

In the final Part-III of the FCP, students will complete a final report and a recorded presentation with at least audio that includes an analysis and discussion of the Pros and Cons of their Bot selection on any impacted area within the Business, Organization, and Technology domains. The final report and presentation must also discuss the problems and challenges that may result from the implementation of their BOTs Automation project and any needs for future enhancements or updates. In the summary, students will identify and discuss the feature(s) they would like to add to the Bot they selected for their project for any future enhancements and improvements.

Changes

Any changes in the Course Syllabus or Schedule will be posted on the Announcement page of Canvas. Any emergent notifications will be addressed via email. Students are encouraged to communicate with the instructor as needed throughout this course.

INFO-I 220 Social Impact of Bots and Automation – Course Outline:

Week #	Learning Topics & Objectives	Learning Activities	Assessments & Deliverables
Week 1	<p>Introduction to AI and Robotic Process Automation (RPA)</p> <ul style="list-style-type: none"> Examine the concepts of Organizational Digital Transformation and Automation in a data driven economy. Define AI and Robotic Process Automation and their current role and position in today's data driven tech and work environments. Identify and list the various types of Bots evolving and increasingly rising throughout all industries, including Task Bots, Informational Bots, Conversation Bots, Art and Entertainment Bots, and Voice Bots. 	<p>Reading Assignments: Chapters 1 from Chatbots-the-definitive-guide-2020 Ai-Danger-to-Humanity Community-Roadmap-for-AI-Research 10 Trends of Artificial Intelligence</p> <p><input type="checkbox"/> Lesson Presentation-LP1: (Artificial Intelligence (Ai) Vs. Human Intelligence (Hi) & Intelligent Analysis (iA)) <input type="checkbox"/> Lesson Presentation-LP2: (More on Ai Vs. Hi & iA) <input type="checkbox"/> Discussions Forum</p> <p>Other Assignments: <input type="checkbox"/> Review course syllabus <input type="checkbox"/> Week 1 Discussion Questions <input type="checkbox"/> Complete and submit your Personal Course Introduction <input type="checkbox"/> Current Events & Trend Reports#1: “Ai Trends and Danger to Humanity” assigned & due end of week-2</p>	<p><input type="checkbox"/> Discussion Questions – DQ1 & DQ2</p> <p>Due end of Week 1: <input type="checkbox"/> Post your Personal Course Introduction</p> <p><input type="checkbox"/> Learning Act-1: My Ai Learning Example</p>
Week 2	<p>Organizational Processes and Workflow:</p> <ul style="list-style-type: none"> Discuss smart robotization in planning, reporting, and risk management vis-à-vis process automation and monitoring business functions using bots and AI. Examine the BOT foundations (Business, Organization, and Technology) and identify the relationships and links between their functions in terms of data, processes, and workflow. Identify production and non-production processes in the BOT functions of a given organization. Contrast and differentiate the characteristics between regular bots and advanced or smart bots. 	<p>Reading Assignments: Chapters 2 & 3 from Chatbots-the-definitive-guide-2020 IFTF and DellTechnologies_Human-Machine_Partnership</p> <p><input type="checkbox"/> Lesson Presentation LP3: (Understanding Bots as Ai Agents) <input type="checkbox"/> Discussions Forum</p> <p>Other Assignments: <input type="checkbox"/> Week 2 Discussion Questions <input type="checkbox"/> Research & Case Analysis #1 - “Some Ways AI Could Threaten Our World” assigned & due end of Week 3 <input type="checkbox"/> BOT Mapping and Bot Example Activity <input type="checkbox"/> Week 3 Discussion Questions <input type="checkbox"/> Building My 1st Chat/Informational Bot</p>	<p><input type="checkbox"/> Discussion Questions – DQ3, DQ4 & DQ5</p> <p>Due end of Week 2: <input type="checkbox"/> Learning Act-2: My SigOther Bot <input type="checkbox"/> Current Events & Trend Reports#1: “Ai Trends and Danger to Humanity”</p>
Week 3	<p>Robotization and Bots Automation</p> <ul style="list-style-type: none"> Explain what differentiate advanced bots from traditional enterprise software. Discuss how non-production processes, including in sales, customer service, finance and administration, and strategic procurement are becoming the focus of robotization and digital automation with AI and RPA. Evaluate how robotic process automation – or “Bots” – and artificial intelligence (AI) are increasingly becoming capable of performing tasks that previously could only be done by human workers. Elaborate how advanced Bots can go beyond automatically maintaining and updating databases to being goal oriented and reactive to the environment. 	<p>Reading Assignments: Chapters 4 & 5 from Chatbots-the-definitive-guide-2020</p> <p><input type="checkbox"/> Lesson Presentation LP4: (Ai Agents as Cognitive Bots) <input type="checkbox"/> Discussions Forum</p> <p>Other Assignments: <input type="checkbox"/> Week 3 Discussion Questions <input type="checkbox"/> Review for Exam #1 <input type="checkbox"/> Learning Act-3: Bias in Ai <input type="checkbox"/> Final Course Project Part-I – Research & Literature Review, assigned & due end of Week 5</p>	<p><input type="checkbox"/> Discussion Questions – DQ5 & DQ6</p> <p>Due end of Week 3: <input type="checkbox"/> Learning Act-3: Bias in Ai <input type="checkbox"/> Research & Case Analysis #1 - “Some Ways AI Could Threaten Our World” Complete Exam #1</p>

Week 4	<p>AI and RPA as a Strategic Tech-Business Solution</p> <ul style="list-style-type: none"> Describe how advanced Bots are now capable of accomplishing different types of tasks or managing projects in different environments. Discuss the latest AI technologies like Computer Vision, Natural Language Processing (NLP), fuzzy logic, Neural Networks, and machine learning (ML) and their role in automation. Discuss how businesses and enterprises can automate unstructured data processing end-to-end using the latest AI technologies like Computer Vision, Natural Language Processing (NLP), fuzzy logic, and machine learning (ML). Explain how Bots are system agnostic and are capable of carrying out processes across different systems and databases. 	<p>Reading Assignments: Chapters 6 & 7 from Chatbots-the-definitive-guide-2020 I400-Robotic Process Automation Ai and RPA Pros and Cons</p> <ul style="list-style-type: none"> Lesson Presentation LP5: (Digital Transformation & The Digital Ecosystem - Ai & Automation) Lesson Presentation LP6: Robotic Process Automation Discussions Forum <p>Other Assignments:</p> <ul style="list-style-type: none"> Week 4 Discussion Questions Learning Act-4: My 1st Chat/Informational Bot Current Events & Trend Report #2 – “RPA & Digital Transformation Case Study”, assigned and due end of Week 5 	<ul style="list-style-type: none"> Discussion Questions – DQ7, DQ8 & DQ9 <p>Due end of Week 4:</p> <ul style="list-style-type: none"> Learning Act-4: My 1st Chat/Informational Bot, Flowchart & Design
Week 5	<p>Pros and Cons of AI and RPA deployment</p> <ul style="list-style-type: none"> Assess the benefits of AI and RPA in executing repetitive processes and office administration tasks faster, more reliably, and with greater compliance than human workers. Identify the pros and cons of implementing advanced Bots and cognitive automation to managing projects in different environments. Consider the significances of AI and RPA reducing throughput time in repetitive tasks, and whether this is leading to freeing employees to address higher order tasks and work in growth areas, or ultimately eliminating their full-time employment. Analyze how AI and RPA often provoke fears of bots with human characteristics and machines replacing humans and leading to mass job losses. 	<p>Reading Assignments: Chapters 8 from Chatbots-the-definitive-guide-2020 The Ultimate Guide to Talent Management in the Age of AI.pdf I400-Red Bots do it better.pdf Political Propaganda Spread Through Social Bots.pdf</p> <ul style="list-style-type: none"> Lesson Presentation LP7: (RPA & Employment) Lesson Presentation LP8: (Ai & Botification in Global Politics) Discussions Forum <p>Other Assignments:</p> <ul style="list-style-type: none"> Week 5 Discussion Questions Learning Act-5: RPA in My Employment! How Do Bots See Me? Learning Act-6: Botifying Politics Final Course Project Part-II – Analysis, Design, and Framework, assigned & due end of Week 6 Research and Case Analysis #2 - “Business Impact of Social Media Bots”, assigned & due end of Week 6 	<ul style="list-style-type: none"> Discussion Questions – DQ10, DQ11 & DQ12 <p>Due end of Week 5:</p> <ul style="list-style-type: none"> Learning Act-5: RPA in My Employment! How Do Bots See Me? Learning Act-6: Botifying Politics Final Course Project Part-I – Research & Literature Review Current Events & Trend Report #2 – “RPA & Digital Transformation Case Study”
Week 6	<p>AI and RPA Social/Economic Cost and the Global Perspective</p> <ul style="list-style-type: none"> Demonstrate understanding of the ways AI and the capability of Bots to automate content-centric processes, makes AI an ideal complementary technology to RPA. Compare and contrast the pros and cons of using Bots that learn from people how to handle unstructured and unclear data so processes can be automated from end-to-end Explore the impact of AI and RPA in reducing the trend in global outsourcing. Examine how AI and RPA can address and impact some of the challenges in global outsourcing, including lost efficiency, cultural challenges and poor communication, or time delays. Discuss how automation with advanced bots and AI could slow the trend of offshoring, or replace it with a new one: Cybershoring. 	<p>Reading Assignments: Chapters 9 & 10 from Chatbots-the-definitive-guide-2020 Buddha Bot.pdf Top 10 Social Media Bots Of 2019.pdf</p> <ul style="list-style-type: none"> Lesson Presentation LP9: (Ai & The Botification of Religions & Spirituality) Lesson Presentation LP10: (Ai & The Botification of Social Media) Discussions Forum <p>Other Assignments:</p> <ul style="list-style-type: none"> Week 6 Discussion Questions Learning Act-7: Botifying Religions & Spirituality Research and Case Analysis#3: “Use Cases in Enterprise Bots in Banking & Bot-Building Frameworks”, assigned and due end of Week 7 Final Course Project Part-III - Final Report & Presentation, assigned and due end of Week-8 (last day of class) 	<ul style="list-style-type: none"> Discussion Questions – DQ13, DQ14 & DQ15 <p>Due End of Week 6:</p> <ul style="list-style-type: none"> Research and Case Analysis #2 - “Business Impact of Social Media Bots” Final Course Project Part-II - Analysis, Design, and Framework

Week 7	<p>AI and RPA Real World Approach</p> <ul style="list-style-type: none"> Examine the need for an organization to have an overall digital transformation plan that considers their knowledge base and organizational structures before investing in robotization tools and ML software to automate their internal processes and worker’s interactions. Describe how to apply smart robotization in planning, reporting, and risk management vis-à-vis process automation and monitoring business functions using a variety of cognitive bots. Appraise current research on approaches to designing advanced bots that can act as cognitive virtual agents to achieve desired outcomes. Elaborate how advanced Bots once empowered with the ability to process unstructured data augmented by ML and NLP could impact social structures and networks in addition to impacting work environments. 	<p>Reading Assignments: Chapters 11 & 12 from Chatbots-the-definitive-guide-2020 Leveraging chatbots to improve self-guided learning through conversational quizzes.pdf Data for my EduBot.pdf Botifying Healthcare.pdf</p> <ul style="list-style-type: none"> Lesson Presentation LP11: (Ai & Botifying Healthcare) Lesson Presentation LP12: (Ai & Botifying Education) Discussions Forum <p>Other Assignments:</p> <ul style="list-style-type: none"> Week 7 Discussion Questions Learning Act-8: My COVID-19 MedBot Learning Act-9: Using EduBot with Canvas Current Events & Trend Report #3 – “Ai & Healthcare Bots-Use Cases” assigned and due end of Week 8 	<ul style="list-style-type: none"> Discussion Questions – DQ16, DQ17 & DQ18 <p>Due end of Week 7:</p> <ul style="list-style-type: none"> Complete Exam #2 Learning Act-8: My COVID-19 MedBot Learning Act-9: Using EduBot with Canvas Research and Case Analysis#3: “Use Cases in Enterprise Bots in Banking & Bot-Building Frameworks”
Week 8 (Lesson 8)	<p>AI and RPA – Course Capstone</p> <ul style="list-style-type: none"> Make use of real world and current events to evaluate and report on the applications and implications of AI and RPA on the 3 corner stone BOT foundations of any environment; Business, Organization, and Technology. Select a real-world example of recent deployment of IoT focused Bots and evaluate how this type of Bots are revolutionizing Field Service Automation (FSA), Maintenance, Repair, and Operations (MRO), Industrial Automation, Call Center industry and Enterprise Asset Management (EAM) markets. Adapt selected approaches to better understand various dimensions, implications and perspectives on the deployment of AI and RPA and the adoption of cognitive automation with Bots. Complete a final course project focusing on a selected area in AI and RPA or an enterprise adoption of Cognitive Automation and Bots to automate workflow and processes from end-to-end across platforms and channels. 	<p>Reading Assignments: Bonus Chapter from Chatbots-the-definitive-guide-2020 Artificial Intelligence in the Internet of Things.pdf I400R_Cognitive Computing.pdf</p> <ul style="list-style-type: none"> Lesson Presentation LP13: (Ai & Enterprise Botification) Lesson Presentation LP14: (What if Things Start to Think?) Discussions Forum <p>Other Assignments:</p> <ul style="list-style-type: none"> Week 8 Discussion Questions Learning Act-10: Botifying IoT & Rise of AioT Learning Act-11: My Depiction of Ai & Cognitive Computing Present Course Capstone Project 	<ul style="list-style-type: none"> Discussion Questions – DQ19, DQ20 & DQ21 <p>Due end of Week 8:</p> <ul style="list-style-type: none"> Learning Act-10: Botifying IoT & Rise of AioT Learning Act-11: My Depiction of Ai & Cognitive Computing Current Events & Trend Report #3 – “Ai & Healthcare Bots-Use Cases” Final Course Project Part-III - Final Report & Presentation (Last day of class)

CODE OF CONDUCT

All students should aspire to the highest standards of academic integrity. Using another student's work on an assignment, cheating on a test, not quoting or citing references correctly, or any other form of dishonesty or plagiarism shall result in a grade of zero on the item and possibly an F in the course. Incidences of academic misconduct shall be referred to the Department Chair and repeated violations shall result in dismissal from the program.

All students are responsible for reading, understanding, and applying the *Code of Student Rights, Responsibilities and Conduct* and in particular the section on academic misconduct. Refer to *The Code > Responsibilities > Academic Misconduct* at <http://www.indiana.edu/~code/>. All students must also successfully complete the Indiana University Department of Education "How to Recognize Plagiarism" Tutorial and Test. <https://www.indiana.edu/~istd> You must document the difference between your writing and that of others. Use quotation marks in addition to a citation, page number, and reference whenever writing someone else's words (e.g., following the *Publication Manual of the American Psychological Association*). To detect plagiarism instructors apply a range of methods, including Turnitin.com. <http://www.ulib.iupui.edu/libinfo/turnitin>

Academic Misconduct:

1. **Cheating:** Cheating is considered to be an attempt to use or provide unauthorized assistance, materials, information, or study aids in any form and in any academic exercise or environment.
 - a. A student must not use external assistance on any "in-class" or "take-home" examination, unless the instructor specifically has authorized external assistance. This prohibition includes, but is not limited to, the use of tutors, books, notes, calculators, computers, and wireless communication devices.
 - b. A student must not use another person as a substitute in the taking of an examination or quiz, nor allow other persons to conduct research or to prepare work, without advanced authorization from the instructor to whom the work is being submitted.
 - c. A student must not use materials from a commercial term paper company, files of papers prepared by other persons, or submit documents found on the Internet.
 - d. A student must not collaborate with other persons on a particular project and submit a copy of a written report that is represented explicitly or implicitly as the student's individual work.
 - e. A student must not use any unauthorized assistance in a laboratory, at a computer terminal, or on fieldwork.
 - f. A student must not steal examinations or other course materials, including but not limited to, physical copies and photographic or electronic images.
 - g. A student must not submit substantial portions of the same academic work for credit or honors more than once without permission of the instructor or program to whom the work is being submitted.
 - h. A student must not, without authorization, alter a grade or score in any way, nor alter answers on a returned exam or assignment for credit.

2. **Fabrication:** A student must not falsify or invent any information or data in an academic exercise including, but not limited to, records or reports, laboratory results, and citation to the sources of information.
3. **Plagiarism:** Plagiarism is defined as presenting someone else's work, including the work of other students, as one's own. Any ideas or materials taken from another source for either written or oral use must be fully acknowledged, unless the information is common knowledge. What is considered "common knowledge" may differ from course to course.
 - a. A student must not adopt or reproduce ideas, opinions, theories, formulas, graphics, or pictures of another person without acknowledgment.
 - b. A student must give credit to the originality of others and acknowledge indebtedness whenever:
 1. directly quoting another person's actual words, whether oral or written;
 2. using another person's ideas, opinions, or theories;
 3. paraphrasing the words, ideas, opinions, or theories of others, whether oral or written;
 4. borrowing facts, statistics, or illustrative material; or
 5. offering materials assembled or collected by others in the form of projects or collections without acknowledgment
4. **Interference:** A student must not steal, change, destroy, or impede another student's work, nor should the student unjustly attempt, through a bribe, a promise of favors or threats, to affect any student's grade or the evaluation of academic performance. Impeding another student's work includes, but is not limited to, the theft, defacement, or mutilation of resources so as to deprive others of the information they contain.
5. **Violation of Course Rules:** A student must not violate course rules established by a department, the course syllabus, verbal or written instructions, or the course materials that are rationally related to the content of the course or to the enhancement of the learning process in the course.
6. **Facilitating Academic Dishonesty:** A student must not intentionally or knowingly help or attempt to help another student to commit an act of academic misconduct, nor allow another student to use his or her work or resources to commit an act of misconduct.

OTHER POLICIES

1. **Administrative withdrawal:** A basic requirement of this course is that students participate in all class discussions and conscientiously complete all required course activities and/or assignments. If a student is unable to attend, participate in, or complete an assignment on time, it is the student's responsibility to inform the instructor. If a student misses more than half of the required activities within the first 25% of the course without contacting the instructor, the student may be administratively withdrawn from this course. Administrative withdrawal may have academic, financial, and financial aid implications. Administrative withdrawal will take place after the full refund period, and a student who has been administratively withdrawn from a course is ineligible for a tuition refund. Contact the instructor with questions concerning administrative withdrawal.

2. **Civility:** To maintain an effective and inclusive learning environment, it is important to be an attentive and respectful participant in lectures, discussions, group work, and other classroom exercises. Thus, unnecessary disruptions should be avoided, such as ringing cell phones, engagement in private conversations, and other unrelated activities. Cell phones, media players, or any noisy devices should be turned off during a class. Texting, surfing the Internet, and posting to Facebook or Twitter during class are generally not permitted. Laptop use may be permitted if it is used for taking notes or conducting class activities. Students should check with the instructor about permissible devices in class. IUPUI nurtures and promotes “a campus climate that seeks, values, and cultivates diversity in all of its forms and that provides conditions necessary for all campus community members to feel welcomed, supported, included, and valued” (IUPUI Strategic Initiative 9). IUPUI prohibits “discrimination against anyone for reasons of race, color, religion, national origin, sex, sexual orientation, marital status, age, disability, or veteran status” (Office of Equal Opportunity). Profanity or derogatory comments about the instructor, fellow students, invited speakers or other classroom visitors, or any members of the campus community shall not be tolerated. A violation of this rule shall result in a warning and, if the offense continues, possible disciplinary action.
3. **Communication:** For classroom-based courses, the instructor or teaching assistant should respond to emails by the end of the next class or, for online courses, within two Indiana University working days, which excludes weekends and holidays. The instructor should provide weekly office hours or accept appointments for face-to-face, telephone, or teleconferenced meetings, and announce periods of extended absence in advance.
4. **Counseling and Psychological Services (CAPS):** Students seeking counseling or other psychological services should contact the CAPS office by phone at 274-2548 or email at capsindy@iupui.edu. For more information visit <http://life.iupui.edu/caps/>.
5. **Course evaluations:** Course evaluations provide vital information for improving the quality of courses and programs. Students are urged to complete one course and instructor evaluation for each section in which they are enrolled at the School of Informatics and Computing with the following three exceptions: (a) The student has withdrawn from the course; (b) fewer than five students are enrolled in the section (in which case maintaining anonymity is difficult); and (c) the section is a laboratory that must be taken with a course having a different section number. Course evaluations are completed at <https://soic.iupui.edu/app/course-eval/>. Course evaluations are typically open from the eleventh week. Course evaluations are anonymous, which means that no one can view the name of the student completing the evaluation. In addition, no one can view the evaluation itself until after the instructor has submitted the final grades for the course. In small sections, demographic information should be left blank, if it could be used to identify the student.
6. **Disabilities policy:** In compliance with the Americans with Disabilities Act (ADA), all qualified students enrolled in this course are entitled to reasonable accommodations. Please notify the instructor during the first week of class of accommodations needed for the course. Students requiring accommodations because of a disability must register with Adaptive Educational Services (AES) and complete the appropriate AES-issued before receiving accommodations. The AES office is located at UC 100, Taylor Hall (Email: aes@iupui.edu, Tel. 317 274-3241). Visit <http://aes.iupui.edu> for more information.

7. **Email:** Indiana University uses your IU email account as an official means of communication, and students should check it daily for pertinent information. Although you may have your IU email forwarded to an outside email account, please email faculty and staff from your IU email account.
8. **Emergency preparedness:** Safety on campus is everyone's responsibility. Know what to do in an emergency so that you can protect yourself and others. For specific information, visit the emergency management website. <http://protect.iu.edu/emergency>
9. **IUPUI course policies:** A number of campus policies governing IUPUI courses may be found at the following link: http://registrar.iupui.edu/course_policies.html
10. **No class attendance without official enrollment.** Only those who are officially enrolled in this course may attend class unless they are enrolled as an auditor or making up an Incomplete by prior arrangement with the instructor. This policy does not apply to those assisting a student with a documented disability, serving in an instructional role, or administrative personnel. <http://registrar.iupui.edu/official-enrollment-class-attendance.html> Children may *not* attend class with their parents, guardians, or childcare providers.
11. **Religious holidays:** Students seeking accommodation for religious observances must submit a request form to the course instructor by the end of the second week of the semester. For information visit <http://registrar.iupui.edu/religious.html>.
12. **Right to revise:** The instructor reserves the right to make changes to this syllabus as necessary and, in such an event, will notify students of the changes immediately.
13. **Sexual misconduct:** IU does not tolerate sexual harassment or violence. For more information and resources, visit <http://stopsexualviolence.iu.edu/>.
14. **Student advocate:** The Student Advocate provides assistance to students with personal, financial, and academic issues. The Student Advocate Office is located in the Campus Center, Suite 350. The Student Advocate may also be contacted by phone at 317 274-4431 or by email at studvoc@iupui.edu. For more information visit <http://studentaffairs.iupui.edu/advocate>.

MISSION STATEMENT

The Mission of IUPUI is to provide for its constituents excellence in

- Teaching and Learning;
- Research, Scholarship, and Creative Activity; and
- Civic Engagement.

With each of these core activities characterized by

- Collaboration within and across disciplines and with the community;
- A commitment to ensuring diversity; and
- Pursuit of best practices.

IUPUI's mission is derived from and aligned with the principal components—Communities of Learning, Responsibilities of Excellence, Accountability and Best Practices—of Indiana University's Strategic Directions Charter.

STATEMENT OF VALUES

IUPUI values the commitment of students to learning; of faculty to the highest standards of teaching, scholarship, and service; and of staff to the highest standards of service. IUPUI recognizes students as partners in learning. IUPUI values the opportunities afforded by its location in Indiana's capital city and is committed to serving the needs of its community. Thus, IUPUI students, faculty, and staff are involved in the community, both to provide educational programs and patient care and to apply learning to community needs through service. As a leader in fostering collaborative relationships, IUPUI values collegiality, cooperation, creativity, innovation, and entrepreneurship as well as honesty, integrity, and support for open inquiry and dissemination of findings. IUPUI is committed to the personal and professional development of its students, faculty, and staff and to continuous improvement of its programs and services.

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