ChatBot Support for Loan Services

Two Sentence Elevator Pitch:
The JP Morgan Chase project team will design and build the first ChatBot to be utilized in Commercial Loan Services. There will be significant interaction with a wide range of JPMC Technologists and stakeholders. All team members will become JPMC Summer interns in Chicago.

Abstract:
Loan department support staff continuously field calls for specific information, instructions on appropriate business processes, and/or queries on where to find information. Many of these calls follow identical/highly similar patterns that could be addressed by a ChatBot. The ChatBot development will leverage natural language processing techniques. Students will document current business processes, prioritize use cases, develop an architecture and implement the system.

Impact:
The ChatBot will deliver a number of benefits to Commercial Loan Services. It will be available 24/7, provide faster customer response for simple questions, and free up support personnel to focus on more complex queries. The ChatBot will make it easier to monitor business value, collect data on user questions, evaluate user satisfaction and develop a better understanding of our customer's business needs.

Scope:

Minimum Viable Product Deliverable (Minimum level of success)
- By the end of the Winter term students will have completed a user needs assessment, prioritized the potential use cases, developed a system Architecture and received approval of their proposed system from the JMPC Architectural Review Board.

Expected Final Deliverable (Expected level of success)
- All student team members will be JPMC interns in Chicago for the summer where they will work full time on this project. Students will deliver a fully functional, validated system within the JPMC test environment.

Stretch Goal Opportunities (High level of success - May include one or more of the following)
- User focus group testing on the test environment

Student Skills:
MDP Sponsored Projects are both a professional and academic learning experience for students. By participating in this program, students are actively preparing for graduate school and a professional career. As part of the experience, MDP expects professional behavior. To best prepare you for future

professional opportunities, your experiences on this MDP team will be very broad. In addition to key technical skills that you will bring to the team, you will engage deeply in the self-directed learning of new and important concepts, demonstrate flexibility, collaboration, and cooperation, and develop strong professional communication skills. This also means that you will need to be able to work outside of your traditional area of study in the true multidisciplinary nature of our projects. You won't always be able to anticipate how your skills and expertise will be used, so the MDP Sponsored Project will challenge you to grow and develop as a professional.

Project Roles	Key Skills and/or Knowledge	Likely Majors
Programming (3 Students)	General skills in programming. Strong interest in developing NLP skills. Must have completed EECS 281 or equivalent.	CS DATA (all) SI (BS)
Natural Language Processing (1 - 2 students)	Natural Language Processing	CS (MSE/MS) EE (MSE/MS) DATA (all) SI (MS)
Business Process Analysis (1-2 students)	Business process analysis and development. Customer needs identification. In addition students must have introductory computer science skills and high motivation to develop; please be sure to identify these in your personal statement.	IOE BBA (with CS minor) CS (with BBA minor)

Additional Desired Skills/Knowledge/Experience

Any of the following Skills, Knowledge, Experience, Interest or Outlook, would be valuable to the 2020 team. We don't expect students to be familiar all or even most of the technical items, but strong candidates will have familiarity or experience with *some* of them and a positive attitude to learn what is necessary as the project gets underway. Please highlight your experience with any of the items on this list in your personal statement on the application.

- Successful team based project experience
- Project Management utilizing Agile/Scrum
- Interest/Experience applying existing NLP to develop solutions

Location:
Project work during year will take place on campus with opportunities to travel to JPMC Offices in Chicago for user interviews and project presentations. The team will be based in Chicago during their summer 2020 internship. (MDP will provide transportation during Winter/Fall academic terms).

Sponsor Mentors:

Binu Jose
Vice President Wholesale Loan Technology
Binu is based in Chicago and had been with J P Morgan for 22 years where he has performed multiple roles as developer, technical lead, Scrum Master and application development manager. Binu designed and built all of the international and domestic money transfer interfaces for Wholesale Loan Technology and was responsible for setting up the first offshore development team based in India.   In his current role as the application development manager for Equipment Finance and Asset Based Lending Technology, Binu is leading his team in the implementation of public and private cloud technologies.   In his free time Binu loves travelling and enjoys teaching and mentoring.

Wilson Taylor
Associate, Wholesale Loan Technology
Wilson is a software engineer who started with the firm over four years ago in Columbus, Ohio as part of the Software Engineering Program (SEP). While in Columbus, Wilson's application development team was responsible for building out an integrated, modular client relationship platform which was deployed internationally. Presently Wilson is located in Chicago, Illinois and is tasked with creating a standardized system to track and maintain collaterals across the firm. Additionally, Wilson lead development efforts on the build out of a cloud native application that propagated cleansed data to a strategic survey vendor to report customer satisfaction levels. In his free time, Wilson enjoys hiking, experimenting with new technologies, reading, and frequenting The Art Institute of Chicago.

Executive Mentor:

Todd Ippen
Executive Director
Wholesale Loan Technology
Todd is based in Chicago, Illinois and has been with the firm for over 21 years portraying many roles from application development to multi-year program management involving architecture required to support numerous lines of businesses and products. Mr. Ippen was responsible for the technical build and roll-out of the firm's strategic loan platform to international countries in Europe, Latin America, and Asia. In addition, Mr. Ippen is responsible for the architectural design and build-out of a new global loan collateral tracking application. Outside of his day-to-day activities, Mr. Ippen is the JP Morgan Captain for University of Michigan recruiting and is a member of two Chicago Technology Operating Committee (CTOC) Work streams (Recruiting & Global Innovation. In his free time, Mr. Ippen enjoys spending time with his wife and two children travelling, boating, skiing, and attending various sporting activities.

Faculty Mentor
Michael Nebeling

Michael is an Assistant Professor in the School of Information, where he leads the Information Interaction Lab. His lab investigates new methods, tools and technologies that enable users to interact with information in more natural and powerful ways, and also make it easier for designers to create more usable and effective user interfaces.

Previously, he was a postdoctoral researcher and lecturer at the HCI Institute at Carnegie Mellon University and the Department of Computer Science at ETH Zurich, where he also obtained his PhD.

Legal Requirements:
Citizenship Requirements.

- **Due to JP Morgan's employment requirements, this project is open to US Citizens/Permanent Resident only.**

Intellectual Property Agreements / Non-Disclosure Agreement
- Students will sign the JPMC IP/NDA agreement

Summer Project Activities
Summer Internships (in Chicago) <u>are required</u> to participate on this team.
  - All project students must participate in the JPMorgan summer internship program and will be based in Chicago.
  - All students must
    - Have Cumulative University of Michigan GPA > 3.0
    - Pass a background and drug test
  - Offer letters will include required dates, compensation, and other conditions of the internship. Students will have 10 days to accept or reject their MDP/JPMC offer.

Company Information:
JPMorgan Chase (NYSE: JPM) is one of the oldest financial institutions in the United States. With a history dating back over 200 years, here's where we stand today:
- We are a leading global financial services firm with assets of $2.4 trillion.
- We operate in more than 100 countries.
- We have over 235,000 employees.
- We serve millions of consumers, small businesses and many of the world's most prominent corporate, institutional and government clients.
- We are a leader in investment banking, financial services for consumers and small businesses, commercial banking, financial transaction processing and asset management.
- Our stock is a component of the Dow Jones Industrial Average.