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| **Executive Summary** | | | | | | |
| **Title: SRL Assistive Agent** | | | | | **Project ID:** *To be completed only by CVDI Project Coordinator* | |
| **Today’s Date:** 3/17/2017 | **Estimated Start Date:** 5/1/2017 | | | | **Type:** [x] New [ ] Continuing | |
| **Principal Investigator 1:** Matthew Gerber | | **University**: UVA | | | **Email:** msg8u@virginia.edu | |
| **Other Project Participants:** *(Please identify each participant’s role – e.g. Co-PI, researcher, student, etc.)*  Mark Rucker, Student | | | | | | |
| **Project Description:** This research project will develop the tools and framework necessary to create a legal assistive agent for SRL’s. In order to achieve this goal this project will do three things: 1) Determine what input and outcome data needs to be tracked in order to create a virtuous self-improving service. 2) Create a novel content delivery structure that allows for much easier management and improvement from human administrators. 3) Provide empirical tests for the effectiveness of the experimental data and content structure. In particular, this project won’t seek to replace any current stakeholders, but rather will try to fill existing gaps within the SRL process through ideally providing process insights, smart reminders, smart recommendations and ultimately, some day, matching between attorneys and litigants. | | | | | | |
| **Experimental Plan:** 1) Determine what input and outcome data needs to be tracked (or can be tracked) in order to create a virtuous self-improving service. 2) Create a novel content delivery structure that allows for easy management and oversite based upon Reinforcement Learning algorithms. 3) Develop initial content through conversation with subject matter experts 4) Provide empirical tests for the effectiveness of the above data, content structure and content. | | | | | | |
| **Related Work:**  End-to-end LSTM-based dialog control optimized with supervised and reinforcement learning by Williams and Zweig  Policy Shaping: Integrating Human Feedback with Reinforcement Learning by Griffith et al. | | | | | | |
| **How this project is different:**  This project will treat the SRL interaction as a Partially Observable Markov Process. Existing work in Reinforcement Learning has primarily examined either fully deterministic systems or fully open systems. Our approach to human interaction with scripts will be unique as a middle ground between existing research | | | | **Milestones for Year 1:**  *3 months:* InitialData Outlined  *6 months:* Experiments Designed  *9 months*: Experiments Executed  *12 months:* Results Summarized | | |
| **Deliverables for Year 1:**   1. Data framework for learning 2. Initial content for SRL assistive agent 3. Code for SRL assistive agent 4. Report explaining results and supporting theory | | | **Proposed Budget for Year 1:**  Personnel  Students  Overhead  Other *(describe)*  **Total** | | | $ 0  $ 0  $ 0  $ 0  **$ 0** |
| **How this Project may be transformative?**  Builds a strong foundation on which many new intelligent services can be built. While we will likely focus on one particular challenge in the SRL domain, if the project is successful there is no reason the framework can’t be replicated to address other SRL needs. | | | | | | |
| **Potential Member Company Benefits:**  Initial groundwork laid for new legal services that would be profitable for Thomson Reuters while also generating considerable social goodwill with customers and the Justice Department. | | | | | | |
| **Progress to Date:** Company objectives defined, coordination and relationship building between university and company stakeholders, regular communication channels established, and | | | | | | |
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