SIMPLIFYING   COMPLEX   LANGUAGE

Company Background:
AIpiphany is an artificial intelligence company with the vision to transform complex technical language into plain actionable language that builds trust and transparency. AIpiphany Notes is an AI solution that takes complex jargon electronic health records EHRs and makes them into plain actionable language. An AIpiphany Note empowers patients to engage in their own health by making their very personal EHR understandable and actionable. Our mission is simply to democratize language to make any technical document understandable and accessible to everyone.

Team Size: 3-4 Students

Location: Remote, client/team meetings will be held with Google Hangouts.

Project Summary: AIpiphany would like to develop a neural network to disambiguate medical abbreviations. Take for example the two sentences: 1) The LAD was occluded for 45 minutes with subsequent 120 minutes reperfusion. 2) LAD II is a rare, autosomal, recessive inherited immunodeficiency disease that induces frequent and recurrent infections. After reading each sentence it is clear that the abbreviation LAD is referring to two different medical phrases. The abbreviation LAD is ambiguous mapping to both 'left anterior descending' in the first sentence and 'leukocyte adhesion deficiency' in the second sentence. The objective of this project would be to develop a neural network that could determine which medical word should be substituted for a particular abbreviation. Ideally this neural network should be able to generalize across a database of acronyms and should have accuracy above 80%. All IP rights will be retained by AIpiphany.

Key Skills/Technologies: A background in NLP and deep learning would be beneficial for tackling this project. Although the team will have the freedom to choose how best to solve the problem a recommendation would be to start with ClinicalBERT transformer self-attention architecture trained on clinical notes. In addition the team can seek guidance from the client as the client has deep expertise in AI and NLP.

Student Benefits:
- Freedom to develop a creative solution to the problem.
- Mentorship from the client on AI & NLP
- Future paid internship opportunities
- Build leadership skills by seeing the project through to completion.
- Opportunity to work on a project that is high impact and can make a difference in patients lives

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