

**Company Background:**

AI Arrive is an artificial intelligence company with the vision to create AI products that accelerate research and enhance our understanding of human disease. AI Arrive partners with pharmaceutical clients to greatly accelerate R&D and drug development efforts by helping clients to make go/no-go decisions, prioritize drug targets, and uncover the mechanism of action (MoA) for drug targets. *HistoricalPathway* is a time analysis of biological discovery of biomolecular signaling pathways. *HistoricalPathway* can show the progress in our understanding of diseases and pathways across time.

Team Size: 4-5 Students

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

Project Summary: AI Arrive would like to develop a beta *HistoricalPathway* solution using biomedical journal articles. The end goal would be to provide a visual time analysis of knowledge that has been gained for a specific biomolecular signaling pathway over time. The first step would be to extract publication date from biomedical journal articles. The next step would be to extract out relationships from the biomedical journal articles and save those relationships in a graph database, Neo4j. The next step would be to provide summary statistics in the dashboard for each temporal discovery. The next step would be to visualize discovery over time by temporal displaying new discoveries using a timeline. Another goal would be to develop out visuals using d3.js and/or other visualization tools to show the networks. All IP rights will be retained by AI Arrive.

Key Skills/Technologies: A background in developing ETL pipelines, NLP, network analysis, visualization, working with databases and visualizations w/ d3.js would be beneficial for tackling this project. The team can seek guidance from the client.

Student Benefits:

- Freedom to develop a creative solution to the problem.
- 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

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