Beagle - Navigating Academic Research

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ABSTRACT

Beagle is a client-side application that facilitates both annotation on PDFs and web pages and traversing open source academic research. Structurally, Beagle is envisioned as a browserified node application based on a peer-to-peer distributed file system, accessed through a browser extension and a stand-alone application. The UI is envisioned primarily as inline annotations combined with an informative sidebar overlayed on the PDF or wbe page. The application is inherently modular, which serves the dual purpose of maximising extensibility for the code base (which could then be utilized by other members of the open research community) and allowing users to select what information they can see. This document outlines the technical specifications underlying Beagle.

1. INTRODUCTION

[Motivate Beagle. Introduce problems. Open Research. Citation graph. Competitors. Partners. Chrome Extension. Data storage. User interaction. Encrytion. Future]

2. FRONT ENDS

2.1 Chrome Extension

Beagle is mainly realised as a Chrome extension. The extension loads a browserify bundled javascript file. This file is the concatination of the the node.js modules which are specified by the user; it also contains the React templates used to automatically generate a siderbar and various modals which make up the UI for the extension.

2.1.1 Components

- Author Profile
- Publication Graph
- Tags
- Citation
- Saved papers
- Annotations
- Journal information
- Paper information
- Notes

2.2 Standalone App

Beagle will be able to pass on PDFs and web snippets via email to other users. It will also be able to store PDFs and display them to users who share them with other users.

3. DATA STORAGE

Beagle will store publicly citation data; data about viewed articles; data about authors; publication graph data. It will also have a node available for accessing and storing encrypted user data and annotations in a peer-to-peer distributed file system, allowing for maximal uptime and decentralization of storage costs. Users can share directly via their own node with other uses, bypassing the central storage, if they wish, although all data sent will be hashed.

Some data will be optionally encrypted. For instance, tags on paper will have the option of being public, semi-private (available to user groups), or private. This allows Beagle to use tags to deduce contents of papers, or related papers.

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