

REQUIREMENT

RECOMMENDED BROWSER

For optimal performance with the Archive Flow system, it is recommended to use the following web browsers:

- Google Chrome: Latest stable version (version 117.0 or above)
- Mozilla Firefox: Latest stable version (version 118.0 or above)
- Microsoft Edge: Latest stable version (version 117.0 or above)
- Safari: Version 10 and above

SYSTEM OVERVIEW

Archive Flow is a web-based system for managing documents that optimizes the organization and retrieval of files. It primarily serves individuals and teams aiming to enhance their document handling efficiency. The system allows users to upload various file formats, create and manage knowledge bases, and utilize a chatbot for quick information access, facilitating a user-friendly experience.

USER INTERFACE

The Archive Flow user interface is developed using a combination of Python and JavaScript technologies. Upon user interaction, queries are processed by the backend system, which fetches pertinent information from the database. Results are then displayed seamlessly on the web interface, providing features such as file uploads, management of knowledge bases, and interactive chat options for user inquiries.

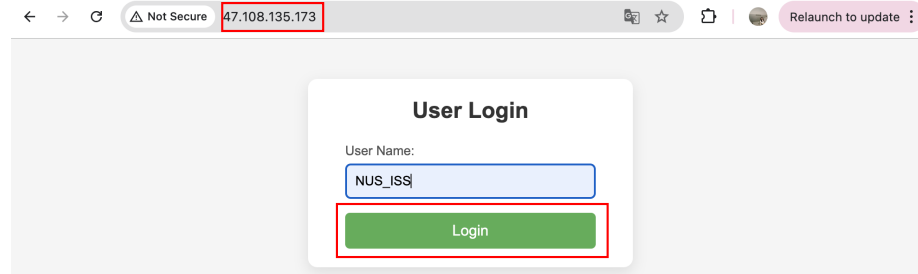
DEPLOYMENT

Operating System: The Archive Flow system is a cross-platform application that can be deployed on remote servers or locally. A valid installation of Python (version 3.6 or higher) is required. To successfully run the system, ensure that you have a functional Python installation along with the required libraries:

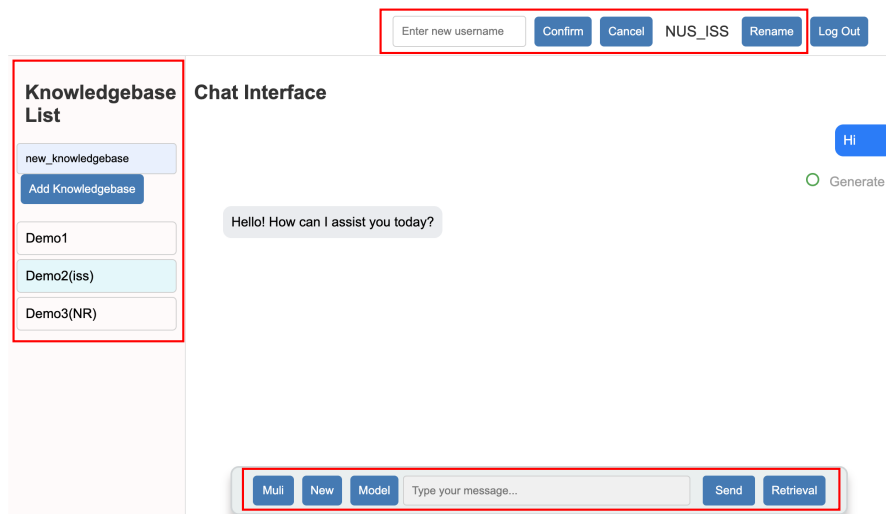
- pandas
- pymysql
- sanic
- opencv-python
- unstructured
- BCEmbedding
- frontend
- PyMuPDF
- cryptography
- langchain
- langchain_community

START

Open your preferred browser and navigate to the following URL: “http://47.108.135.173/,” as shown below:



After clicking the login button, the system will automatically enter the main interface.



From the left side of the page, users can manage or add knowledge bases, or select a knowledge base to start a chat. When a specific knowledge base is selected, the responses in the chat interface will adjust slightly based on the retrieval results from that particular knowledge base.

At the top of the interface, there is a username change section. However, due to the uniqueness requirement for usernames, users cannot choose a username that already exists.

At the bottom of the page, several buttons are visible, each corresponding to different functions: multi-turn conversation, start a new conversation, model parameter settings, and a retrieval button. Each of these features will be introduced in detail.

When users select the multi-turn conversation mode, they can engage in extended dialogues where the system retains context from previous exchanges. This allows for follow-up questions and more dynamic, context-aware responses throughout the conversation.

Knowledgebase List

New Knowledgebase Name

Add Knowledgebase

Demo1

Demo2(iss)

Demo3(NR)

Chat Interface

Remember my exam day is on 5th Nov

Generate

Your exam day is on 5th November. Please ensure you have all the necessary materials and are prepared for the exam. Good luck!

What is my exam day?

Generate

Your exam day is on 5th November.

Multi New Model Type your message... Send Retrieval

When users enable the retrieval function, the system performs a two-stage retrieval process, extracting the most relevant information from the vector database to assist in answering questions. This approach enhances the accuracy of responses and ensures that users receive pertinent information tailored to their queries.

Knowledgebase List

New Knowledgebase Name

Add Knowledgebase

Demo1

Demo2(iss)

Demo3(NR)

Chat Interface

Can you introduce me about NUS-ISS?

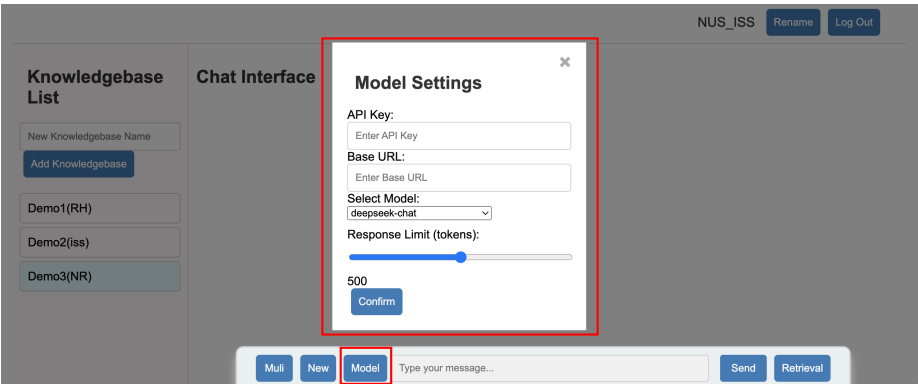
Retrieval Generate

NUS-ISS, which stands for the National University of Singapore - Institute of Systems Science, is a continuing education institute within the National University of Singapore. It is dedicated to supporting individuals, organizations, and industry partners in upskilling their workforce effectively. NUS-ISS offers a range of programs and services aimed at helping students and professionals develop capabilities and advance in multiple areas of specialization through a multi-dimensional learning experience. Key features of NUS-ISS include: 1. **"Diverse Programs"**: NUS-ISS offers a variety of programs in areas such as Enterprise Business Analytics, Intelligent Process Automation, Smart City Applications, and more. These programs are designed to equip learners with the skills needed to thrive in the digital economy. 2. **"Blended Learning"**: The institute emphasizes blended learning experiences, combining online and offline methods to create opportunities for collaboration, co-creation, and real-life application of knowledge. 3. **"Industry Connections"**: NUS-ISS has strong connections with global organizations, and its alumni are pursuing careers at prestigious companies such as Accenture, Microsoft, DBS Bank, and more. The Career Services Office helps students match jobs based on their skills and experience. 4. **"Experienced Faculty"**: The teaching staff at NUS-ISS includes practitioners with over 20 years of industry experience, ensuring that the education provided is relevant and practical. 5. **"Career Support"**: The institute offers career services, including bi-yearly Career Fairs, to help students and graduates network with employers and secure employment opportunities. 6. **"Leadership and Innovation"**: NUS-ISS is committed to innovation in education and is led by a management board that guides the institute's direction and key growth areas. Overall, NUS-ISS aims to be a leading institute in the field of continuing education.

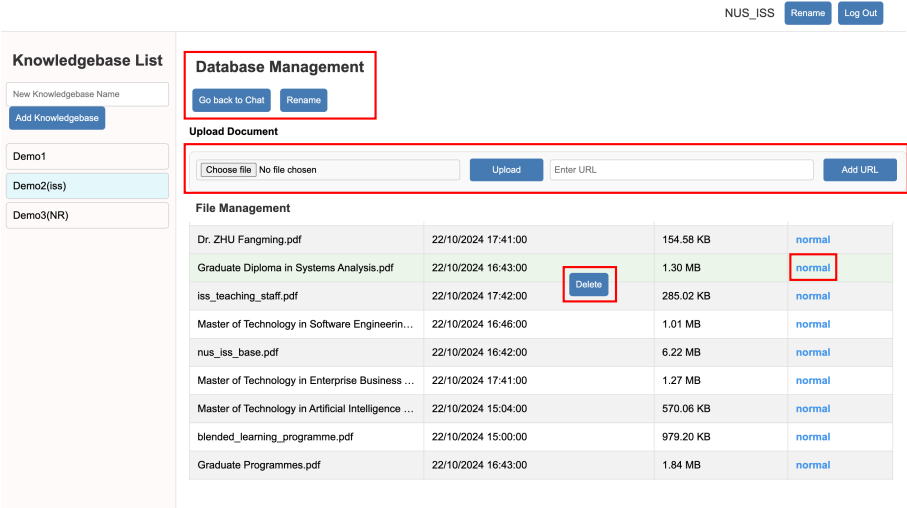
Multi New Model Type your message... Send Retrieval

When the user selects the model settings, a panel will pop up. In this panel, users can choose their preferred LLM interface and enter their API key and base URL. When they click confirm, the back-end will save this user information to the database, and users can later change it themselves. When users right-click

to manage the knowledge base, they enter the interface shown below, where



they can rename the database, upload files (with format restrictions: txt, pdf, docx, md, jpg, jpeg, png), or add URLs. Options for managing and deleting files are also available. Once document editing is complete, users can return to the chat interface.



The file upload status includes 'success', 'error', and 'waiting'. 'waiting' indicates that the file is queued for embedding into the vector database, while 'success' and 'error' show whether embedding was successful, allowing successful files to be used for later retrieval.

BUSINESS SCENARIOS

SAMPLE INPUT & ASSISTANT INFO & SYSTEM OUTPUT

This section illustrates the system's response in real-world business scenarios. Each example provides a sample user input and corresponding system output, showing how the system processes requests to retrieve relevant information. These scenarios demonstrate the system's ability to efficiently meet various business needs and showcase its practical functionality.

2.1 Scenario 1: Students search for school information

User's input	What is ISS?
System's retrieval result in short(Rank from 1 to 5)	<p>1. File Name: Master of Technology in Digital Leadership.pdf</p> <p>Content: This MDL programme focuses on digital strategy and leadership and will equip you with the critical thinking, hard and soft skills to become an effective leader. It will accelerate your equipped with the right processes and people capabilities to ride the digital wave and to thrive in the digital economy. Our goal is also to help organisations to develop its next generation of digital leaders. https://www.iss.nus.edu.sg/graduate-programmes/programme/detail/master-of-technology-in-digital-ladership2024/10/21 14:40</p> <p>Master of Technology in Digital Leadership a s e oe n Master of Technology Degree. Find out more at: NUS-ISS Professional Certificate Programme in Digital Leadership. Who is This Programme For? This leadership programme is uniquely designed to nurture next-gen business and digital leaders who will drive and integrate customer, people and technology strategies to transform and accelerate their businesses in the digital.</p>
	<p>2. File Name: Master of Technology in Enterprise Business Analytics.pdf</p> <p>Content: bullepow eaoipaud pue sisAjeue Professionals will be equipped with the essential technical expertise to harness data, machine learning and enabling technologies to dvelop and deploy effective data-driven solutions. These solutions are designed not only to enhance decision-making processes but also to optimise operations, drive profitability and elevate overall user experiences within enterprises. https://www.iss.analytics2024/10/21 14:41</p>

	<p>Master of Technology in Enterprise Business Analytic Recognition: Top student is awarded the IBM Medal and Book Prize Best Project Prize Graduates of the programme will be capable of undertaking tasks such as: Discovering insights from data Applying concepts and techniques to solve major business problems Designing and customizing marketing campaigns through efficient targeting Analysing sales channels Optimising the marketing mix of their organisations</p>
	<p>3. File Name: Master of Technology in Software Engineering.pdf Content: dlirectly to the University and not through any agents. Candidates who apply through agents will not have any acded advantage in gaining admission and the University reserves the right to rejecef such applications without giving reasons. How to Apply (August 2025 Intake) All applicants applying for Academic Year 2025/26 Semester 1 (August 2025) onwards are required to submit an online application for our graduate coursework programme (through-train) through GDA3. https://www.iss.nus.edu.sg/graduate-programmes/programme/detail/master-of-technology-in-software-engineering2024/10/21 14:41 Master of Technology in Software Engineering Step 1: You can refer to our detailed step-by-step guide on how to complete the online application. Step 2: It will take you about 30 minutes or more to complete your application. You will need the softcopies of the supporting documents for your online application.</p>
	<p>4. File Name: Dr. ZHU Fangming.pdf Content: 1994 Academic and Professional Experience Associate, Technology Application Staff(Knowledge Engineering Program), Institute of Systems Science, National University of Singapore, Jan 2009 - Present Project Specialist (Lecturer/Consultant, Knowledge Engineering Program), Institute of Systems Science, National University of Singapore, Jul 2005 Dec 2008 SMF Postdoctoral Fellow, Department of Electric and Computer Engineering, National University of Singapore, May 2004 Jul 2005 https://www.iss.nus.edu.sg/abozt-us/saff/detail/260/ZHU Fangming</p>

	2024/10/21 15:02 Dr. ZHU Fangming SMF Research Officer, Department of Electric and Computer Engineering, National University of Singapore, Aug 2003 Apr 2004 Membership and Professional Activities Independent Reviewer to Engineering Applications of Artificial Intelligence. Programme Committee Member to IEEE CEC Congress on Evolutionary Computation 2009; Independent Reviewer to IEEE CEC.
	5. File Name: Dr. ZHU Fangming.pdf Content: 4 (4), 381-393, 2004. Zhu, F. and Guan, S. U. Ordered Incremental Training with Genetic Algorithms, International Journal of Intelligent Systems, 19 (12), 1239-1256, 2004, Guan, S. U. , Zhu, F. Ontology Acquisition and Exchange of Evolutionary Product-brokering Agents, Journal of Research and Practice in Information Technology WhatITeach ARTIFICIAL INTELLIGENCE https://www.s.nus.edu.sg/about-us/staff/detail/260/ZHU/Fangming 2024/10/21 15:02 Dr. ZHU Fangming ProblemSolving usingPatternRecognition ARTIFICIAL INTELLIGENCE PatternRecognition andMachineLearningSystems DATA SCIENCE PredictiveAnalytics-InsightsofTrendsandIrregularities ARTIFICIAL INTELLIGENCE ProblemSolvingusingPatternRecognition ARTIFICIAL INTELLIGENCE Reasoning Systems Go Back to Our Team NUS-ISS / About Us / Staff @ National University of Singapore. All Rights Reserved. Legal 2022 Branding Guidelines * Contact Us 2022 Getting to ISS https://www.iss.nus.edu.sg/about-us/staff/detail/260/ZHU/Fangming
System's output	ISS stands for the Institute of Systems Science at the National University of Singapore (NUS-ISS). It is a professional education and training institute within NUS that offers a wide range of courses and programs in areas such as software engineering, data science, artificial intelligence, digital leadership, and enterprise business analytics. The institute aims to equip professionals with the necessary skills and knowledge to excel in their careers and contribute to the digital transformation of organizations.
User's input	Who is Zhu Fangming?

System's retrieval result (Rank from 1 to 5)	1. File Name: File Name: Dr. ZHU Fangming.pdf Content: 2024/10/21 15:02 Dr. ZHU Fangming NUS ISS - Dr. ZHU Fangming Chief, MTech Artificial Intelligence Systems Programme isszfm@nus.edu.sg Profile Dr. Zhu Fangming is the Chief, Master of Technology in Artificial Intelligence Systems Programme with NUS-ISS. He lectures in the Master of Technology programme in the areas of evolutionary computation, neural networks, and data engineering at NUS. He also worked as a research and development engineer in an IT company before pursuing his PhD studies at NUS. His research interests include evolutionary computation, neural networks, data mining. Foundation (SMF) Postdoctoral Fellowship in 2003. He has also published many papers in leading journals and conferences. Educational Qualifications/Professional Certifications Ph.D., National University of Singapore, 2004; M.Eng., Shanghai Jiao Tong University, 1997; B.Eng., Shanghai Jiao Tong University, 1994. Academic and Professional Experience: Associate.
	2. File Name: File Name: Dr. ZHU Fangming.pdf Content: Institute of Systems Science, National University of Singapore, Jan 2009 - Present; Project Specialist (Lecturer/Consultant, Knowledge Engineering Program), Institute of Systems Science, National University of Singapore, Jul 2005 - Dec 2008; SMF Postdoctoral Fellow, Department of Electric and Computer Engineering, National University of Singapore, May 2004 - Jul 2005; SMF Research Officer, Department of Electric and Computer Engineering, National University of Singapore, Aug 2003 - Apr 2004. Membership and Professional Activities: Independent Reviewer to Engineering Applications of Artificial Intelligence; Programme Committee Member to IEEE CEC Congress on Evolutionary Computation 2009; Independent Reviewer to IEEE CEC; Independent Reviewer to IEEE Transactions on Neural Networks. Research Interests: Evolutionary Computation, Neural Networks, Data Mining, Pattern Recognition.
	3. File Name: iss_teaching_staff.pdf Content: 2024/10/21 14:56 Artificial Intelligence Dr. Nicholas HO, Lecturer & Consultant, Artificial

	<p>Intelligence Practice isshjhn@nus.edu.sg; Dr. TIAN Jing, Senior Lecturer & Consultant, Artificial Intelligence Practice isstjonus.edu.sg; Dr. WANG Aobo, Lecturer & Consultant, Artificial Intelligence Practice. Artificial Intelligence Practice Staff: Dr. XIE Zhen, Senior Lecturer & Consultant, Artificial Intelligence Practice xaw.xio@nus.edu.sg; Dr. ZHU Fangming, Chief, MTech Artificial Intelligence Systems Programme isszfmnus.edu.sg. Additional Staff Categories: Management, Practice Chiefs, Programme Chiefs/Heads, Teaching Staff, Artificial Intelligence, Data Science, Digital Health, Digital Innovation & Design, Digital Products & Platforms, Digital Strategy & Leadership, Software Systems, International Programme, Administration Staff, Digital Academy Services, Adjunct Staff.</p>
System's output	<p>Zhu Fangming is the Chief of the Master of Technology in Artificial Intelligence Systems Programme at NUS-ISS (National University of Singapore - Institute of Systems Science). He lectures in the Master of Technology programme in areas such as evolutionary computation, neural networks, and data engineering. Dr. Zhu has a Ph.D. from the National University of Singapore and has published many papers in leading journals and conferences. His research interests include evolutionary computation, neural networks, data mining, and pattern recognition.</p>

2.1 Scenario 1: Employees search company policies (retrieval process omitted...)

User's input	What are the consequences of my lateness?
System's output	<p>The consequences of lateness depend on the duration of the delay: 1. Mild Lateness (1-15 minutes): - Warning issued. - Recorded, and three such instances will escalate to a general lateness. 2. General Lateness (16-30 minutes): - Warning issued. - 20% deduction from the day's salary. 3. Severe Lateness (31 minutes and above): - Warning issued. - 50% deduction from the day's salary. - Serious cases may be subject to further disciplinary action according to company regulations. For exceptional circumstances (such as traffic accidents or sudden illness), employees should inform their direct supervisor upon arrival and provide relevant proof. Such cases may be exempt from being counted as lateness after review.</p>
User's input	How can I get the bonus?
System's output	<p>To receive bonuses, employees must adhere to specific steps and standards. The company offers several types of bonuses: Annual Bonuses are based on yearly performance and overall company profitability, with distribution determined by performance reviews and financial outcomes. Quarterly Bonuses reward departments or individuals for exceptional quarterly achievements and are allocated according to performance assessments and target completion. Project Bonuses recognize outstanding contributions in completing specific projects, with evaluation based on successful project completion and individual or team performance. Special Contribution Bonuses are awarded to those who make exceptional contributions, with amounts determined by management based on the contribution's significance.</p> <p>All bonuses rely on a Performance Evaluation system, categorizing performance into levels A, B, C, and D: Level A signifies outstanding performance with the highest bonus distribution, Level B for good performance with a high distribution, Level C for average performance, and Level D for unsatisfactory performance, which does not qualify for a bonus.</p>

	Additionally, departments must meet clear performance targets, as target achievement influences bonus eligibility, and both annual and quarterly bonus amounts may be adjusted based on the company's overall profitability.
User's input	I want to ask for leave, what is the procedure?
System's output	To request leave, please follow these steps: 1. Leave Application: Fill out the "Leave Application Form" and provide detailed information about the reason for your leave, the duration of the leave, and your contact person. 2. Department Approval: Submit the application to your direct supervisor for review. The supervisor will decide whether to approve the leave based on work arrangements. If the leave is for more than 3 days, the application will be forwarded to the Human Resources Department for further review. 3. Human Resources Department Approval: The Human Resources Department will review the leave application within 2 working days. For special circumstances, additional time may be required for approval. 4. Notification of Results: The approval result will be communicated to you by your direct supervisor, who will also sign the "Leave Application Form." If your leave is denied, you may choose to discuss further with your supervisor or appeal to the Human Resources Department if necessary. Please ensure that you submit your leave application at least 3 days in advance, except for urgent situations like illness. During your leave, please maintain contact to ensure smooth handover of work. If you are taking sick leave for more than 3 days, you must provide a doctor's certificate and submit it to the Human Resources Department within 3 days after returning to work. Thank you for your cooperation.