

## Research project and supervisor team

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<b>Short introduction &amp; description of research project</b>	<p><b>Financial Data Management</b></p> <p>Financial institutions in China keep track of a large amount of information about their small-to-medium size clients. This can take the form of accounting reports, bank statements, contracts, invoices, certificates and so forth. Many of these documents are held in paper form or photocopies and they are used as part of risk assessment. Currently that process is not well-automated. This project is to research new methods to digitize this diverse information into a knowledge graph that can then be used for data analytics and automate the risk assessment process. The project is formed of five distinct parts:-</p> <ol style="list-style-type: none"><li>1. Conversion of photocopied documents into electronic form: Although good OCR packages exist, this is not straightforward since the documents are typically noisy. Further processing will be required to achieve good results.</li><li>2. Detect types of documents: Use data analytics and machine learning to determine what type and format each document is. In particular, NLP techniques can be used to identify documents and clustering algorithms to automatically categorize documents into different types.</li><li>3. Develop a financial data management tool that can store and query the documents in a structured way using knowledge graphs.</li><li>4. Use high-level information to extrapolate document details: Use learned information, such as type of document, to extrapolate document information which may not be clear due to noise.</li><li>5. Implement anomaly detection to check for inconsistencies in the processed documents that may represent a credit or fraud risk.</li></ol> <p>This project will be conducted over 4 years with our industry partners in Ningbo. The research student will have excellent analytic skills, as well as an interest in business applications.</p>
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