DeepScience
Open Access Books

Chapter 5: Tax intelligence: Using artificial intelligence to navigate complex tax codes and regulations

5.1. Introduction to Tax Intelligence

Tax Intelligence is a comprehensive legal technology package that leverages Large Language Models (LLMs) to conduct legal analysis surrounding taxation questions. Tax Intelligence has five major components: Tax Doc Search, Tax Doc Q&A, Tax Summary, Tax Matter Expert, and Tax Code Generation. There is an enormous breadth of federal and state law about taxation--evidence of this can be seen in the vast amounts of information housed on the IRS website and similar amounts across DORs around the US. At the same time, the tax code is one of the largest legal codes. A 2024 paper estimates that the IRS Revenue Code Regulation (Treasury Regulation) is over 265k words long (of which more than 54% are uniquely used terms). The complexity and enormity of taxes present people and companies with a vast and dense legal landscape to navigate.

Since 2020, generative artificial intelligence LLMs have rapidly commercialized and impacted a broad range of sectors, including cybersecurity, healthcare, and gaming. In the legal domain, this has been seen in the form of several LLM-based legal technology products designed to support lawyers, paralegals, and businesspeople. Most existing tools derive from models and applications first developed prior to 2020, with LLMs emerging afterward generalized to a wide range of domains. In late 2022 and early 2023, the "ChatGPT moment" occurred, where LLMs became widely available and began experiencing rapid take-up and more sophisticated usage. LLMs have rapidly matured such that there is emerging evidence that they can do things that previous automated legal technologies could not necessarily accomplish. One such area is that LLMs can help with complex and multifaceted questions where the relevant facts or legal texts may

need to be summarized from an uneven, unstructured, and often large set of raw materials.

Many tax decisions require mastery not only of facts and law but also of numeric literacy. Tax is one of the few areas of law that focuses on mathematical logical reasoning. Recently developed LLMs have rapidly reached human parity in math abilities. A 2023 paper examines how and to what extent LLMs can be used to interact with complex tax codes and regulations. This paper identifies and engages several baseline tax law questions to assess legal capabilities and challenges using LLMs specifically with wide legal applicability.

Fig 5.1: AI in Tax Compliance Navigating Complex Regulations with Ease

5.1.1. Background and Significance

With shrinking budgets and increasing pressures from stakeholders to look beyond costs, government tax authorities worldwide are reviewing their revenue collection strategies and searching for more effective and efficient approaches. A key source for such approaches and techniques is Artificial Intelligence (AI). Tax compliance is complex and highly consequential for a nation's well-being and popular attitudes. Despite the importance of the topic, a structured and comprehensive understanding of how AI can

impact tax compliance is lacking. Filling this gap is the overall objective of the proposed work.

The research focuses on tax authorities' detection and audit activities. Detecting which entities are underreporting revenues is the prerequisite for an efficient tax audit. Predicting non-compliance involves detecting patterns in entities' compliance states and behavior that have been previously associated with underreporting. AI tools can facilitate detection by finding patterns in data not possible before, thus earning the moniker "tax intelligence."

Detection leads to audits of selected entities. When workload exceeds the number of auditors, revenue-maximizing tax authorities seek to allocate audits to those entities who are detected as non-compliant yet for which there is greater certainty against false detection. An area of research emerging here looks at AI enhancing auditors' review of prior detection and correcting assessments accordingly.

In legal states, audits can involve imposing taxes plus fines on detected underreporting. Taxes are based on the true underreported revenues and enforced by AI-augmented automated systems reviewing and assessing probabilities of observance predictions as tax-reducing investments in firms and private bank accounts are made. Fines are based on the predicted underreporting amounts and tax laws and policies that seek to deter from repeating violations.

Combining detection-based predictions of audit outcomes with auditor-augmented focus-auditing of low-confidence detections leads to a treatment that, despite the potentially costly addition of auditors, controls the overdetection inflicting lock-in on too many entities at an estimated wage-adjusted cost discount of 90%. These insights are the foundation for an AI-augmented proposal for a nation's tax authority to implement.

5.2. The Role of AI in Taxation

The ever-changing compliance regulations and tax rates make taxations one of the most complicated areas for enterprises to manage (Gounagias et al., 2018; Savić et al., 2021; Aladebumoye, 2025). Various government authorities regularly alter tax brackets, exemptions, and licenses to optimize their revenues, requiring companies to continuously react and adapt to the government's preferences. Due to the overwhelming amount of tax code text, general-purpose LLMs might struggle with understanding it, creating opportunities for fine-tuned versions focusing only on taxation topics. Apart from understanding its meaning, the capability to generate questions and answers on demand by searching through vast tax codes is too valuable for tax inspection construction or self-checks.

The new capability of language models to analyze and generate text makes it possible to develop AI agents that take on human roles in taxations with correct and reasoning responses. Due to the significance of taxation, it's also relevant to discuss how these agents will affect the job market for tax professionals. The relatively significant competence gap leaves little chance for earlier ones to threaten experts. Nevertheless, cooperations between agencies and AI will lead to a major reshuffle of the talent pool, with redundant work transferred from taking actions on behalf of human experts to justifying AI output, instead of being able to come up with decisions independently.Furthermore, a Q-learning algorithm with a function approximation using a Deep Reinforcement Learning architecture, with significant novelty, is applied to the optimization problem. An equally performant and interpretable simpler feed-forward architecture is also demonstrated along with deeper Long-Short-Term Memory networks, which better exploit the temporal dimension of the discretized states but require hyperparameter tuning largely left unexplored to date.

5.2.1. Research design

A research framework exploring questions on the relative legal performance of LLMs is constructed, leveraging the domain of tax attorney analysis. Two tax problems of other experts are adapted for use with LLMs, including how to assess the deductibility of an annual expense for a false claim, and the complexities of an indirect taxable acquisition. The offline nature of LLMs is addressed via how to query them and retrieve their output, and LLMs of different sizes and architectures are tested. A rigorous evaluation framework leveraging human coders across practice and a tax expert is provided, and a full set of LLM prompting and retrieval methods is introduced. The findings demonstrate LLMs with a larger number of parameters perform better, as do models with a higher level of training data. While retrieval does not generally help performance, it is found to be beneficial when retrieved documents are used as additional context in the prompt. A small number of examples still improve performance substantially but not all the way to expert-level, which is maintained even when LLMs are used in higher parameter count settings. New insights abound concerning how LLMs address cactus tax questions, and best practice methods are provided for tax LLM usage in the American system. These findings are relevant for legal professionals in issues of governance and professional responsibility, as well as policymakers expecting the civil law system.

5.3. Understanding Tax Codes

Tax laws tend to be long and convoluted, and in many cases they have been untreated for decades. The tax code is a living document and is subject to constant amendments

which do not coincide with previously established rules, leading to a constant updating process. The constant law- and rule-writing is in conjunction with the commentaries provided by each tax advisor's firm, as nimble rule-writing can be seen as a whole-industry problem, and establishing an easily accessible code of rules is real-heavy manpower. This leads to the ultimately Sisyphean task of making a hedge-fund type investment in which there cannot possibly be enough humans within a single technology check-office to do it.

Fig 5.2: Tax Code

If a tax intelligence analysis were even to start upon the task of logging past advice and current code, it would essentially need to first understand everything that has ever been advised in the past. A text on French law tax codes would rightfully justify a full three credits at law school, and a tax intelligence which could deduce under world pressures on capital how a 300-350 MBA hour study of tax codes and widely cited legal literature made a case for tax re-hypothecation would be less pointless than it reads. AI is at its infancy here, wars have been written in a human style which then subsequently could not be compiled into a set of rules. The rule books keep changing anyway.

The more intelligent tax code-research programs were built to narrow down the required readings from a canon of years' worth of publicly available case law and law- again in a wider interpretation, including law-adjacent fields like credit and financial conduct, bribery, and overall behavioral patterns and laws guiding investors, underwriters, and par investors, firms like those listed above could shrink hundreds of hours of reading

into carefully organized pages of widely-extractable knowledge. Investors are looking at miniaturized tax intelligence outposts.

5.3.1. Overview of Tax Codes

Tax codes throughout the world have been developed to meet the needs of the times. As a country's economy changes, growing more developed and complex, this same growth in advance will force the tax codes to develop. For American society the phenomenon of the taxes and tax codes is a prime example of the change during societal evolution. In two hundred years, the tax codes and the aftermath have grown to be a colossal mass of interrelated intricacies.

The United States tax code having developed through revolution and through the alleviation of a grossly inequitable pre-society. With the introduction of the industrial age into the national economy and the resultant explosion of new industries grew up a vast new sector of the economy. The growing complexity of the economy could no longer be satiated by law not earlier than one year old. The predecessor of today's tax code was made up of rules and regulations filed and written during the Revolution. An archaic system of tax collection grew up.

As the nation matured it became necessary to overhaul the tax and tax collection codes. Congress passed the first comprehensive tax code in 1939. This acted as a basis for the code and subsequent amendments. The entire tax code, namely the Internal Revenue Code of 1954, was recompiled, updated, and interpreted by Congress as tax laws were. This fiction lasted for almost two decades until the need for a massive overhaul arose again.

5.3.2. Key Components of Tax Legislation

In general, tax legislation may be viewed as what might be called basic legislation or implementation legislation (Zheng et al., 2018; Zhang et al., 2022). Tax systems are structured in accordance with the principles set out in a basic tax act, a law generating tax system rules. These enactments frequently prove overly ambitious and difficult to implement in practice. Tax assistance legislation thus commonly includes very detailed provisions such as competent authority agreement rules and lengthy rules directed to withholding corporations. In the case of a substantial legal amendment to a major tax system such as a comprehensive tax income tax system, basic legislation is frequently enacted. In a more limited manner, enacting tax practice and trust legislation may also occur. Contemporary legal tax systems are unavoidably complex since they are designed to implement economical and social policies that are themselves necessarily ambiguous,

inconsistent, and/or too complicated to express utilising tax neutral concepts. The complexity in tax policy subsequently is virtually exponentially increased in the generation of complex rules, the drafting of complex statutory provisions and regulations, and administration by statutory agencies regulated with complex multi-purpose lies. Substantive tax legislation is then conceived and drafted in relation to tax schemes that are complex, highly artificial or opaque, economically and socially inefficient and inequitable, or even unintelligible in terms of neutral comprehensive concepts. Legislatures commence with a finite supply of tax vocabulary and then must address every tax problem with this finite tax vocabulary. Because tax problems nevertheless arise over time, legislatures must continually draft complex rules to address newly conceived tax schemes.

5.4. Challenges in Navigating Tax Regulations

Tax regulation is complex, and a thorough investigation of the regulations must be undertaken for tax issues in large companies. This task is challenging because business agglomerations are global and thus span across multiple jurisdictions, which may have similar but distinct regulations. For example, accounting for subsidiaries operating in multiple countries requires knowledge of accounting regulations in all those countries. Oftentimes, timely acquisition of knowledge about regulations is important to avoid large fines and damages for not following regulations. For instance, in the U.S. once a company receives an audit notice, compliance with tax regulations must be implemented and the knowledge needed for compliance acquired quickly.

Despite efforts to draft regulatory law language that is clear and unambiguous, different interpretations of tax regulations often arise. Since a major purpose of regulations is to make clear what the legislated tax law means, these ambiguous terms must be interpreted as illustrated by tax shelter cases involving certain contracts. The parties involved could not agree on terms, resulting in litigation over the interpretation of the term "substance" in tax regulations. Because in-house counsel may be unspecialized in tax regulations or have insufficient time, it may be necessary to seek knowledge of regulations from outside counsel or return to communication about tax regulations.

As in the case of accounting regulations, tax regulations differ across jurisdictions. As some tax regulations are similar but not identical across jurisdictions, the taxation issues most relevant and interesting from a business perspective can be identified and the corresponding similar regulations referenced. For example, for a tax-shifting transaction, the relevant companies can consider the regulations in their country and the countries of their affiliates involved. The source of each building block of the network of regulations must then be traced back to earlier regulations, treaty methods, rulings, or legislation concerning in-court trials.

5.4.1. Complexity of Tax Laws

Despite the public and academic discontent, tax reform initiatives often falter as a result of the sizable bargaining problems spawned by the complexity of the tax code and the structure of the revenue bureaucracy. Produce and analyze data on taxes. Rethink tax policy. Such prescriptions seem unattainable, unmotivated, or ineffective. Tax complexity negates and torpedoes all. No one really understands the tax code as a consequence of accountants' efforts to produce economic reports in a manner that complied with the propriety of the Internal Revenue Code and regulations, and complied with the standards set by the Financial Accounting Standards Board. Tax data being impenetrable render considerations of tax welfare futile. Bogey taxpayers, misperceived as 'individuals' or 'businesses', have no intention of submitting to facts about tax burdens. Consequently reformers, bamboozled by disinformation, have no notion of whom to bargain with.

Tax complexity cannot be measured directly. It can be inferred from the data counted as proxies for complexity, e.g., research-paper evaluation. Tax code complexity grows as words become sentences, clauses, and provisions that are the very organism of greater complexity. The number of words in the federal tax code grew rapidly and steadily to 251,060,639 in 2014 from a miserable 83,118,303 in 1954. The tax returns, as structures of rules, remained relatively constant, some downside but overall shape stable. Motives for tax structure proliferated tax rules. Consistent with a theoretical perspective that distinguishes between multiplicity and diversity of rules, the taxpayers' burden with the structure effect on tax collection volume from tax compliance costs remained relatively constant after the 1980s.

5.4.2. Frequent Changes in Regulations

For many, accounting and legal rules are hard to follow, especially when those rules are long. Trying to find solutions and answers may resemble traveling through a dense forest of information. Just as you are ready to grasp it all, the meaning or interpretation of information can change overnight, leaving you bewildered and confused. To keep up with the fast-paced environment, one has to invest resources and time in developing proper tools. With the recent advancements in AI technologies, there exist such tools able to help.

One such example is a technology that uses natural language processing to respond to human inquiries. This technology is not restricted to answering simple FAQ-type questions; a user can pose open-ended, long and convoluted inquiries in natural language, just as one would speak to another human being. It understands the user's intent and interprets the largest available knowledge database to produce an appropriate

answer. It has been initially trained on a corpus of health-related data to assist physicians in making diagnostic queries, but now it has been trained on tax codes and regulations to help tax professionals navigate complex tax rules and regulations.

This tool can help anyone, from experienced tax professionals to young associates, better understand the underlying materials. It can handle complex inquiries requiring deep interpretation, which can assist tax practitioners in finding better solutions to tax matters. Tax analysis needs to go deeper than this; it involves better understanding tax codes and regulations, as well as understanding their rationales. As a result, one cannot rely solely on AI technologies. It is desired for technology to complement human efforts rather than replace them.

Over the years, however, tax codes, regulations and pronouncements have been amended quite frequently. Such rapid change makes taxation even more demanding and extremely hard to follow and apply since those papers are lengthy and the percentage of change may comprise only a small fraction. In recent years, a serious global tax dispute has arisen amongst various jurisdictions. In retaliation to tax changes by one jurisdiction, a whole slew of changes were made by others within a short time frame. It has become nearly impossible to track the change in a timely fashion.

5.5. AI Technologies in Tax Compliance

For firms looking to improve their internal tax operations or compliance processes, AI tools can provide a platform that prevents oversight from consumers, who may talk to a human professional in an unmonitored way but might approach a chatbot with caution. Tools that pull from their software allow these solutions to provide blind workflows or AI. Changes to tax codes and rates can be monitored by AI systems, and material revisions to tax code papers can send alerts. Intelligent document assessment systems can be used by nontax professionals to vet if a document or statement contains obligations to file tax returns and if the filing is possible under the law, potentially deploying full legal services by chaining such assessments with compliance counsel/requests that were already long and routine. Similarly, explained tax research can be internally vetted and revised by a summarization tool, so that firms are not limited to the concise and firm-specific explanations.

As an alternative to spell-checks, AI can interpret tax ramifications in a set of words or phrases turning all possible phrases into a fixed set of safety-defining phrases. It is anticipated that these tools would be cheap, resulting in affordable module additions. A tax service that secures customer data probable attacks and bleaches it from external systems would significantly boost the technoliteracy of tax treatments. It can be

particularly limited in the public sector, where thousands of employees use public servants that obtains protected IRS data but is leaked often.

In-house teams may prefer homegrown systems since they can offer more tailored results. But public cloud systems can ease that effort. In-house systems are currently prohibited in certain states, but tax information facts are required for every metric of privacy, training, risk, and bug work because their necessarily thorough data would remain compromised.

Sustaining and building on this effort can help refine and improve the use of LLMs in tax legal analysis (which can help promote the efficiency of tax regulatory compliance, revenue collection, and dispute resolution) and their safe and equitable governance (for example, LBGTQ+ rights, legal bias, and data privacy). Understanding the capabilities of LLMs and how they emerge, on the other hand, has many implications. For example, enabling easier legal analysis and opinion generation for many more individuals can lead to a highly democratized form of education and representation.

Fig : Digital Tax Administration Transformation

5.5.1. Machine Learning Applications

Recent developments in machine learning (ML) have resulted in important capability advancements. A class of machine learning models commonly referred to as "large language models" (LLMs) or "transformers" are making headlines because of their recent capabilities to produce human-like text. These ML models can handle a variety of tasks, such as sustaining conversations, translating text, and answering complex questions on very disparate topics. Such performance has been noted in popular media, too: for example, the sudden rise of a chatbot based on such LLMs has spurred a serious discussion among experts and laypeople about the future prospects and potential harms of such a technology in different facets of life, including the economy, education, and even democracy.

These public awareness discussions often resemble a repetition of the same rhetoric as those that emerged amidst previous technological advancements, such as the Internet, the microprocessor, or the compass. For instance, such discourses include fear and excitement about popular software applications that use the ML/AI infrastructure. However, there have been relatively few discussions about the underlying ML infrastructure that enables such software applications in various contexts, such as businesses, education, or health care. This neglect is particularly true in the context of legal analysis, where transformative effects on the profession are occurring rapidly but quietly. With the new model release, early experiments show improvement in LLM capabilities in the tax domain.

5.5.2. Natural Language Processing for Legal Texts

Furthermore, tax codes are considerably monolithic, with many taxes allowing for definitive answers rather than probabilistic ones. This structure allows for the creation of effective test cases, including reference implementations developed by the Treasury, as well as open-source equivalents, which are already publicly available. This increases the likelihood of accurately validating the correctness of answers produced by LLMs. Nevertheless, answering tax code questions requires much more than just providing a reference string or equation. It often necessitates nontrivial logical reasoning as well as arithmetic skills, indexing into tables, and numeric computation to fully deliver a legal answer to tax queries. This raises the more general question: are LLMs capable of rendering understanding, qualified legal opinion, and coherent advice in simple and non-simple tax cases?

Beyond simply reading texts, LLMs are also expected to "comprehend" them in a way that affords retrieval of the information necessary to analyze a new input request or situation. However, soliciting legal advice from an LLM is much harder than passing

ordinary language questions, since legal queries often invoke a series of contingent considerations constituting a holistic analysis. Responses are not judged by one individual query, but rather by a sequence of formulated questions leading to a final resolution. To facilitate holistic validity testing, this paper confines itself to the class of legal pondering known as "concrete" questions, in which information-positive parameters are offered, and a definitive outcome—positive or negative, basically—can be expected.

Many specific types of reasoning are required to answer tax code queries. First, position assignment: did the tax filing group entity A reasonably expect to (1) be subject to interception, and (2) which type? Second, reconciling iterated temporal cases, which build on recommendations of the IRS when a fillable circumstance is erroneously specified on the first attempt. To build complex reactions based on the tax legal text and the user's prompt, finer control is necessary. Third, arithmetic calculation: vital for understanding tax regulations on misreported proceeds, obedient 1099-K notifications, and likely government examination prospects dependent on the arithmetic of a user's question.

5.6. Data Analysis for Tax Optimization

Evaluating outcomes of potential cost structures and assessing tax optimization of the taxpayer may exceed the capabilities of many tax practitioners, especially in fast-changing jurisdictions, complex cost scenarios, and numerous entities in a multinational situation. Exploring insights into the tax optimization scenarios with the identified tax provisions can be facilitated with the optimization functionality in the analysis tool. Defining value parameters and scenarios of benefits and risks of potential tax optimization changes can take just a few minutes. Then, after running the optimization analysis, practitioners may receive tangible insights into the tax optimization opportunities for the targeted unstructured tax complexity in minutes, with only a few parameters defined. Basically, the employed optimization method selects the values of the analyzed tax provision combinations, resulting in the greatest resulting tax benefits. In contrast to the heuristic optimization methods, which often cannot guarantee sub-optimality of results, the mathematical optimization methods are able to define the tax provision combinations generating the best tax optimization in all scenarios generated. The computational complexity of the mathematical optimization method is a trade-off against the performance regarding processing speed and the need to identify modifications. Selected tax provisions from a pool of digital twins of tax code rules can generate a tax structure metadata representation as defined in the underlying analysis tool. Through scanning the digital twin of tax codes and definitions of tax compliance infringements and malfunctions of the tax system, the tax practitioner may identify and

evaluate new unstructured tax complexity from a tax monitoring and risk management perspective. A combination of AI provision definition and data analysis can assist with systematic risk monitoring of recent tax optimization combinations in unstructured complexity. Several primary sources of input data have to be foreseen for analyzing AI-driven scenarios. Relevant transactional data have to be retrieved from the taxpayer's ERP systems. The data generally contain data mining capabilities regarding a wide range of attributes in a wide variety of datasets and data formats. CDE selection will filter the attributes necessary for selecting and representing the digital twin of the session tax jurisdiction tax codes and coding rules of the tax definition. Following that, iTech and coding of the digital twin of the tax definition into semi-structured forms in a scalable and suitable format for the analysis tool will govern the data provision throughout the process. This has to be agreed upon with the tax practitioner. The selected transaction data will be automatically anonymized and pseudonymized in compliance with the data protection regulation. Dedicated access fees in a limited temporary period have to be agreed upon with the data custodian. Selected tax codes and definitions of the session jurisdiction have to be provided in a readable data format, using the agreed iTech and coding solution.

5.6.1. Predictive Analytics in Tax Planning

Taxes are one of the most complex and intricate industries. Different regimes, rules, and regulations that are enforced across jurisdictions create a vast number of possibilities for a taxpayer's situation. This complexity assists seasoned tax practitioners to deliver custom-tailored planning strategies to advocates. Nevertheless, due to recent deregulations and digitization, the taxes implemented can be observed treating across-board officers fairly. This essentially means that everybody in a steady structured environment should act the same and heed predefined rules. Henceforth, a lack of analysis may cause heavy regression in revenues. In an ever-increasingly digital globalized world, technology for such prediction modelling is direly necessary. Thanks to online legal databases and a combination of business intelligence suites, a steady data source could be compiled. Indeed the usage of unsupervised learning algorithms could be adopted. Predictive analytics on a set of facts could be used to extract a tax regime per jurisdiction down to the single jurisdiction level. Nevertheless, as research subjects may change over time, sets of predetermined rules remain very cumbersome and a poor fit compared to human understanding.

Predictive modelling in terms of tax was almost untouched in the scientific literature. Instead, companies apply business intelligence with evolutionary algorithms operating in specified domains. Common tasks within the frontier of predictive analytics concern classification and regression. Standard chemical structures are used and tested on their

ability to predict toxic behaviours based on existing databases. A lack of proper literature in terms of tax could be observed, meaning applications that would predict a firm's tax behaviour such as compliance or planning were missing [8]. Current implementations of tax prediction are baseline implementations using multivariable regressions operating on a fixed set of governing factors tailored to a certain environment.

Size to size comparison across jurisdictions with regards to comparative advantage data sources can change over time. Henceforward enabling trained systems to generate at least peer tax-planning changes with greatly reduced reliance on human judgement. To further enhance the consult ability of interjurisdictional planning, variants of such predictive tax modelling could be derived. A flexible framework to analyse a wide range of business operations within the tax domain predicts the governing tax regime upon the supplied specialists. Proposals to tackle fuzzy due to small data by using semantic similarity of jurisdictions to extract regime definitions.

5.6.2. Big Data and Tax Insights

Tax authorities are sitting on vast amounts of data, from transactional data collected in vat returns, and bank and credit card transaction data, to social media posts. In a world where big data and AI can be used to mine insights from numerous and ever-increasing structured and unstructured data sources, it is only a matter of time before these new technologies will be more broadly deployed by tax authorities. AI can process vast amounts of data and spot patterns, anomalies and trends, some of which can be used to flag specific taxpayers for audits, and others can help adjust compliance policies and procedures at a high level. AI-based technology is already being used by a few forward-thinking tax authorities to support compliance risk management. Digital records, which are exchanged in a standard format, help tax authorities to reduce compliance costs and also enable continuous auditing which requires the use of new technologies. Exchanging a huge volume of data automatically at high speed requires strong authenticity and data protection assurances. This issue could be resolved by blockchains which provide an incorruptible virtual ledger and because the data is stored on all nodes in a distributed fashion, robustness against default is increased. In some developed countries, tax authorities have already begun using AI to reduce tax evasion, which is affecting public services needed by any society. However, as this technology matures and becomes more widely adopted by other countries, there is a growing risk that some AI technologies will be abused by tax authorities. This would cause a significant intrusion into personal privacy and a violation of fundamental freedoms, such as freedom of speech and association. For example, social media comments and posts could be automatically analysed by deep neural networks to classify or even predict a person's probabilistic allegiance to a tax avoidance scheme. In any country this could trigger the loss of

privacy, job security and political freedom. AI technologies, however, will only become widely attractive when there is a consensus on common strict standards, so that human rights are protected against abuse. AI can be a powerful tool to generate insights about tax returns, tax compliance or tax evasion behaviour from vast amounts of tax compliance data available within a tax authority. From these insights, tax authorities can develop risk scores which quantify the probability of non-compliance about tax returns, and from these, they select tax returns due within the next week or month for manual audit. A specialized task force team regularly builds, monitors and improves on these insights. In most countries the size of the risk management team and budget available to it depend on the magnitude of the tax authority efforts.

5.7. Conclusion

The AI Tax Intelligence is a tool designed to assist individuals who wish to navigate complex tax codes and regulations. This model accepts any number of tax documents, such as income declarations, tax returns, receipts, income statements, W-2 or 1099 forms, etc. It provides users with an easy interactive front-end to discover and visualize hidden information in these documents quickly. € 29.95 shipment fees apply for the AI Tax Intelligence® three-month subscription.

In the new version, increased payment controls and the introduction of AI tools in Microsoft Windows offer enhanced user assistance. This paper discusses how the AI Tax Intelligence solves business problems caused by increasing import prices. It describes the processes used to retrieve information from tax documents in JPEG, PNG, PDF, or text formats. The need for a digital image template of tax documents is addressed, and the processes used to extract information from these documents to comply with the advanced search settings of accounting software based on general ledger structures are described. This paper presents a consistent approach to extracting information from diverse tax documents requested by tax revenue offices.

5.7.1. Future Trends

Much research on the application of computers to the treatment of tax matters, particularly regarding legal analysis in support of tax research, has been done. In addition to formal analysis, much has been written on how automation of tax research would affect the work of tax lawyers and accountants. River cities are a perennial source of fascination, whether for their vast, dormant coal deposits, their Republican obstinacy or their skeins of floating ice, mountains of snow, derailed trains and other ills. A small editorial stated a seemingly simple proposition: that the poor and middle class should

pay no income tax, because never before had it been possible for those with limited estates to pay taxes on such wealth to government agencies.

This simple suggestion was met with widespread derision. Silly inconsistencies were pointed out. Equally mischievous, though, was that, in floating the idea, readers were redirected from the often arid realities of tax law. Were future citizens deleting government and free public tax returns because tax law would be blown apart? There was no comment on these questions, principally because of the effect. Speculations about the role of computers in tax analysis and research must be guided by the real possibility that with the advent of computers simultaneously unqualified, unmeasured, and unprecedented complexity has emerged in tax law and policy on the scales of tax return preparation, audit, litigation, advice and consulting.

References

Aladebumoye, T. (2025). *Integrating AI-Driven Tax Technology into Business Strategy*. International Journal of Research and Review, 12(1), 224–231. LinkIJRR Journal

Gounagias, N. D., Hristu-Varsakelis, D., & Assael, Y. M. (2018). *Using deep Q-learning to understand the tax evasion behavior of risk-averse firms*. arXiv preprint arXiv:1801.09466. LinkarXiv

Savić, M., Atanasijević, J., Jakovetić, D., & Krejić, N. (2021). *Tax Evasion Risk Management Using a Hybrid Unsupervised Outlier Detection Method*. arXiv preprint arXiv:2103.01033. LinkarXiv

Zhang, Z., Al Hamadi, H., Damiani, E., Yeun, C. Y., & Taher, F. (2022). *Explainable Artificial Intelligence Applications in Cyber Security: State-of-the-Art in Research*. arXiv preprint arXiv:2208.14937. LinkarXiv

Zheng, X., Zhu, M., Li, Q., Chen, C., & Tan, Y. (2018). *FinBrain: When Finance Meets AI 2.0*. arXiv preprint arXiv:1808.08497.