Results of Competition: Transforming Accountancy, Insurance and Legal Services with AI and Data (Large Consortia Strand)

Competition Code: 1805_ISCF_NEXTGEN_CRD_LS

Total available funding is £6.16 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
GINIE AI LIMITED	Enabling rapid adoption of artificial intelligence through an anonymized data protocol and explainable models	£987,379	£612,175
BARCLAYS PLC		£170,400	£85,200
Imperial College London		£320,413	£320,413
PROFESSIONAL INSURANCE AGENTS LIMITED		£300,945	£180,567
University of Oxford		£239,454	£239,454
WITHERS LLP		£203,284	£101,642

Two of the greatest obstacles towards adoption of artificial intelligence in UK services is the acquisition of confidential data, and the explainability of blackbox neural models. This research will draw on a number of academics from leading research institutions, large commercial partners and Ginie AI, a machine learning startup to tackle these issues. In particular, commercial products that advance state of the art algorithms will be developed. These solutions will draw on the latest body of research in computational privacy and machine learning. The technology will be researched, tested and trialled in a commercial setting. In addition, key stakeholders and regulatory bodies will be engaged with to provide an industry wide protocol of how to enable access to data for the rapid adoption of machine learning in services.

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ALTELIUM LIMITED	Pozibot	£690,200	£483,140
BRILL POWER LIMITED		£458,151	£320,706
DELTA MOTORSPORT LIMITED		£442,176	£309,523
Lancaster University		£527,158	£527,158
QUANTUM BASE LIMITED		£294,585	£206,210

Project Pozibot brings together prominent organisations involved in battery development from university to a battery pack manufacturer, to a BMS developer, to a niche EV market manufacturer and a leading FCA regulated Insured Warranty provider from the LLoyds' and London insurance market. The aim of Project Pozibot is to enable a new type of dynamic insured warranty to be developed, covering components too young for traditional history-based risk calculations. It will enable partnerships between insurance providers and smaller (local) battery pack suppliers removing market entry barriers; Pozibot will play a significant role in the development, and real-life rollout, of next generation batteries.

Battery packs need remote monitoring for predictive maintenance, to flag high-level information such as state-of-health, predictions of remaining asset value and lifetime enabling a modern dynamic warranty insurance product which, with the help of AI, goes beyond traditional risk calculation and forecasting and enables the insurance provider to conduct prescriptive analytics based on real-time battery health and usage data. Using patented quantum-based asset tagging technology enables an unforgeable logging and monitoring system for battery packs.

Cells and battery level suppliers need a warranty to get their products to market. The warranty provider needs the data to provide the insured warranty. Project Pozibot will deliver a warranty thus supporting a significant UK industry initiative at each point in the supply chain.

The project responds to many of the challenges on measurement needs within the battery industry identified by the National Physical Laboratory report on Energy Transition: Measurement needs within the battery industry (c)NPL Management Ltd 2017\.

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FLUIDLY LIMITED	The Development of an Artificial Intelligence Recommender System for Advisory Service Provision at Scale	£1,689,382	£1,182,567
BALDWINS HOLDINGS LIMITED		£467,119	£233,560
THE SAGE GROUP PLC.		£218,728	£0

As data technologies and machine learning are increasingly being applied to accountancy software, more and more traditional accountancy functions are becoming automated; from bookkeeping to reconciliations and reports.

The current challenge for accountancy companies is how to utilise technology and the deeper data insight capabilities on offer to create new opportunities to engage with customers and to open new market channels -- to move from a compliance-based reporting service to an advisory service adding value by providing actionable strategic advice to improve client's financial health and decision making.

The analysis of data is time-consuming and requires new skill sets. The challenge in offering an advisory service across the client base (which may run to thousands of SME clients) is how to analyse the oceans of client data now available in real time, directly from cloud servers. How can timely strategic insight and advice for clients be provided in a cost-effective way for the accountancy firms that is affordable for SMEs?

This project will develop a Client Advisory Insight Engine (CAIE), a web-based client engagement solution to enable resource efficient remote monitoring of SME clients' financial performance across an Accountancy firm's client portfolio. CAIE prioritises clients based on key financial performance metrics, produced automatically and in real time from a client's cloud accounting data. CAIE utilises AI to recommend advisory actions for accountants to open timely advisory conversations with their clients. CAIE enables a cost-effective advisory service at scale.

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INTELLIGENT VOICE LIMITED	Automation and Transparency across Financial and Legal services: Mitigating Risk, Enhancing Efficiency and Promoting Customer Retention through the Application of Voice and Emotional AI	£1,098,271	£615,032
STRENUUS LIMITED		£433,428	£273,060
University of East London		£473,479	£473,479

Insurance fraud costed the UK £3B in 2017, increasing 8% since 2015, equating to £10,400 per fraudulent claim. This causes an increase of £50 per policy. Current manual processes to identify illegitimate claims are repetitive, time-consuming, inefficient, non-user friendly with no consideration for vulnerable customers. This presents fraud identification as a primary target for developed AI capabilities.

The public are becoming increasingly aware of voice activated AI following the release of Amazon's Echo: a market leader in the 'voice-controlled home'. Resultant scientific research surrounding this is focusing on adding intelligence to spoken commands for real-time information.

Current advanced emotional AI technologies capture (non-verbal) human expressions via computer vision, voice analysis and/or biometric sensors. These lack processing speed and are unable to understand both vocalics and linguistics. No solution currently combines artificial intelligence and voice technology for a true conversation with full explainability of its decision.

Addressing this gap, Intelligent Voice aim to develop an AI software that detects and interprets emotion and linguistics from voice. In collaboration with behavioural analysis experts at Strenuus and deep neural networks academics at University of East London, this project aims to develop a vocal AI technology for credibility/vulnerability assessment, key word spotting, in-call behavioural guidance and transparency of the decision-making process, trialled by an insurance contact centre during live claims handling. This will offer a breakthrough technology for the anti-fraud sector, simultaneously providing unique expertise to the UK in deep neural networks and AI with cross-sector potential.

All partners are well placed to exploit this opportunity: Intelligent Voice have an existing global client-base for their voice recognition/transcription software in the financial/insurance services market, Strenuus completed Proof-of-Concept studies with their linguistic algorithms to assess credibility, successfully identifying deception, UEL has demonstrable expertise in data analytics, machine learning architecture and AI explainability. Insurance software providers are in place as in-kind contributors for exploitation.

With InnovateUK support, a 30-month programme of Industrial Research and Experimental Development is required to develop behavioural analysis algorithms, explain the neural networks of the system, integrate the solution to ICE's existing platform and trial the technology in a controlled environment. Project success will support commercialisation by 2021, to establish:

- Intelligent Voice at the forefront of the speech recognition software market, poised for significant growth;

- Strenuus as a leader in behavioural analysis with novel audio processing algorithms;

- UEL as a UK leading university with state-of-the-art explaining of DNNs.