EXHIBIT 1. ILLUSTRATIVE AI TOOLS AND USE CASES IN INVESTMENT MANAGEMENT

Use Case	Example Application	Example Tools	Description/Benefit
Portfolio management	Fundamental analysis	NLP applied to corporate financial reports, earnings calls transcripts	Infer sentiment, discover signals, input into the development of buy/sell recommendations
	Mean–variance optimization	Machine learning, such as artificial neural networks (ANNs), support vector machines (SVMs); used to estimate expected returns and variance–covariance matrices	Determine asset allocation and enhance portfolio construction with improved parameter estimates
Risk management	Forecasting market risk	Conducting dimension reduction, such as principal component analysis, to combine related variables and extract common factors affecting market risk; using ANNs to forecast market variables	Identify common factors driving market variables, then apply ML to the components to forecast returns and distributions
	Backtesting and validation	Unsupervised ML (model trains on unlabelled input data), such as deep learning to learn features and structure in underlying data	Detect market anomalies; improve model performance and robustness of simulations
	Credit risk estimation	ML algorithms, such as ANNs and SVMs, used to model a variety of credit risk measures	Improved measurement of such risks as counterparty credit risk, bankruptcy risk, and loss given default in loan portfolios
Trading	Pre-trade analysis	Clustering techniques used to identify commonalities and connections between assets (identify related assets with similar features or behaviours)	Identify opportunities to enter positions through a series of trades in related assets rather than a single large position (managing liquidity risk and market impact)
	Trade execution	Reinforcement learning algorithms used to test and learn optimal trade execution strategies	Use of execution algorithms that learn from market reactions to previous trades to optimise execution (speed, cost, likelihood of execution) in subsequent trades
Automated advice	Investment recommendations	Use of NLP to analyse textual data in client risk tolerance questionnaires; use of recommender systems to identify suitable investments for clients	Deliver suitable investment recommendations; build customised portfolios at lower cost, optimised for client risk and return preferences
Client onboarding	Compliance with Know Your Customer (KYC) requirements	Use of deep learning (neural networks) in image recognition to verify prospective clients' photographic ID; use of machine learning classification algorithms to detect potential for fraud	Improved compliance with KYC and anti-money-laundering regulations, lower fraud risk