**Forensic Psychology of Autonomous Systems**

An autonomous system (AS) is a very large network or group of networks with a single routing policy. Each AS is assigned a unique ASN, which is a number that identifies the AS. ASes connect with each other and exchange network traffic (data packets) through a process called peering. One way ASes peer with each other is by connecting at physical locations called Internet Exchange Points (IXPs). An IXP is a large local area network (LAN) with lots of routers, switches, and cable connections. Artificial intelligence also known as machine intelligence, refers to the ability of computers to perform human-like feats of cognition including learning, problem-solving, perception, decision-making, and speech and language. Cyberpsychology is a scientific inter-disciplinary domain that focuses on the psychological phenomena which emerge as a result of the human interaction with digital technology, particularly the Internet. It encompasses all psychological phenomena that are associated with or affected by emerging technology. In the Psychology field, resilience is understood as the capacity of people to overcome adversity. Resilience has been determined to be a permanent necessary element for the life of an individual. In addition, different levels of intelligence, analysis capacities, and degrees of autonomy have been progressively incorporated within information systems that are oriented to support decision-making processes. Particularly, the inclusion of affective criteria or variables within decision-making systems represents a promising line of action. Companies have started using artificial intelligence to bridge the customer gap understanding customer needs, and then better connecting with them. Simply, using AI to become more human. For example: The incorporation of a psychological approach to resilience in the stock market allows the autonomous system to face special difficult investment scenarios (e.g., an economic shock) and prevent the system from achieving a permanent negative performance. Thus, psychological resilience can enable an artificial autonomous system to adapt its decision-making processes according to uncertain investment environments. Through determining consumer preference (or evaluation of certain resource), psychological factors could have effect on the evolution of autonomous networks and systems with direct and indirect ways: consumer preference can directly affect the diffusion of virus, information and behaviors in autonomous networks, and facilitate to design the easy-to-use and non-intrusive interfaces between human and computers; on the other hand, the indirect way lies in that: consumer preference change will have influence on related economic theories, which, in turn, affects many economically-inspired networking researches and applications. For better applications & user-experience of the autonomous systems, one should consider these 4 foundations of responsible AI which are as follows:

1. Acting with Empathy: The AI has to understand not only what’s relevant to the audience, but what is suitable for that audience in that context. It’s the AI developer’s responsibility to define those rules and provide guardrails for the AI as it learns.
2. Reducing or Eliminating Bias: AI shouldn’t be racist. Building a fair AI requires a focused effort to avoid that kind of unfairness, because even with the best of intentions, innocent looking data might be correlated with protected variables, like gender and age, and introduce problems. Companies have to regulate AI training data and evaluate the impact of their strategies as they’re being used in the real world to catch bias.
3. Providing Transparency: Companies should be proactive about certifying their algorithms, clearly communicating their policies on bias, and providing a clear explanation of why decisions were made when there’s a problem. They also should consider using transparent and explainable algorithms for regulated/higher-risk use-cases.
4. Establishing Accountability: They should proactively establish and hold themselves accountable for higher standards, and balance the great power AI gives them with the larger responsibility of sustaining relationships with the customers they serve.

Approach of autonomous systems used in forensics has focused mainly on the collection of evidence and very little time has been spent on how to effectively and efficiently examine, analyze, and arrive at a decision based on the evidence identified. Behavioral analysis has been used to support traditional criminal investigations very successfully.