

# Artificial Intelligence Rural & Urban Opportunities

Human brain 100 billion neurons. 100-500 trillion connections 25 watts of power. Intelligence demonstrated by machines. Self-healing technology. Need creativity and empathy as humans. Storytelling shares a vision for the future and to organize sound a vision. Success blockers. Food scarcity. Housing insecurity. Lack of health insurance. Access to high quality healthcare. Access to high quality education. Absence of mentors and role models. "Do something to make yourself interesting." Coach K - "next play." AI for accessibility. AI for Earth-climate, water, agriculture, biodiversity. AI4ALL-non profit. Bias in algorithms. Poor in facial recognition. Rise of the Rest Seed Fund -nonprofit. Startups created 40 million jobs over last thirty years. Kimbal Musk-kitchen Community -built five hundred learning gardens to give access to fresh nutritious produce. Soy, grains, and cotton have low margins -global market. Agricenter International - non-profit, autonomous robot for irrigation. Drones to dispense chemicals. Problems- wasted water, harmful runoff, wasted chemicals. Computer vision. Rural America - R&D for agriculture. Government invests as a limited partner? Matching funds from the government? Barriers to upward mobility. Drug and alcohol problems. Mental health problems. Lack of skills. Limited expertise. Limited broadband. Food deserts. Sister cities- US urban and rural? Revitalize Rural economies.

Drone pilots- fire suppression, fish counts, forest management. Robotics. Affordable housing. Improve early child development. Need quality childcare. Improve health and well-being. Build social capital. Build economic assets. Create pathways to post secondary. Competing with slave labor and government subsidies globally. AI-data-fed insights & predictive capabilities, operational excellence, new job creation. Filter bubble-fragmentation denies us the ability to find common ground. Measure of success = level of engagement? Information diet, information consumption part of wellness. Succession planning. Rural regions wastelands for global production? Soil pH levels, moisture, temperature. Edge computing- run data and analysis on a nearby device. Critical Areas. Healthcare. Conservation.

Sustainability. Accessibility. Disaster Recovery. Intelligent edge intelligent cloud. Microcontroller unit (MCU) powered devices. UHF and VHF radio waves to spread internet and Wi-Fi. Airband-Microsoft reclaimed television radio frequencies to solve last mile problem. Independent software vendors(ISVs).Machine teachers. Supplemental Nutrition Assistance Program(SNAP). Tupelo model-local people must address local issues. Automation of hacking. Nitrogen cycle. AI will not replace human intelligence, judgement, and creativity anytime soon. First phase-systems of reasoning. Second phase-systems of learning. Third phase-systems of simulation. Clever search algorithms. Classifiers-naive bayes. Labeling data takes tremendous effort. Deep learning, machine teaching, transfer learning, reinforcement learning, unsupervised learning. DNN-deep neural networks (neural nets.) Relu-rectified linear unit-neurons are on or off. Linear regression-good predictor? AutoML. Machine teaching. Neural ordinary differential equations ODE. Artificial general intelligence (AGI)-strong AI-humans involved. Use metaphors.