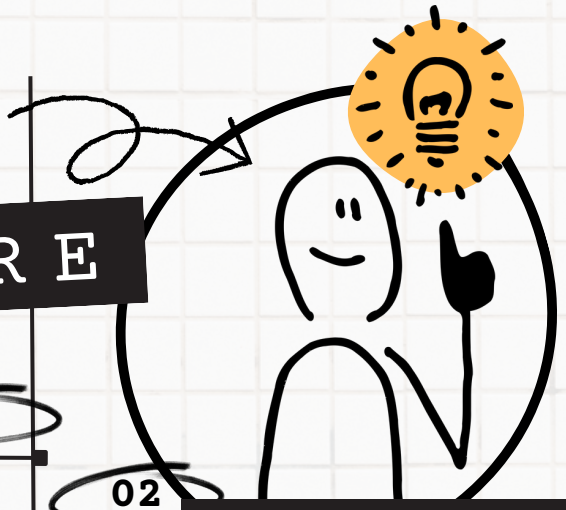
Applied AI

HEALTHCARE



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01 WHY AI?

- Enhancing diagnostic accuracy
- Personalized patient care
- Efficient clinical operations
- Predictive analytics for disease outbreaks
- Drug discovery and development acceleration

02 INDUSTRY

- Hospitals and Clinics
- Pharmaceutical Companies
- Medical Devices Manufacturers
- Health Insurance Providers
- Research Institutions

03 STRATEGIC TRENDS

- Telemedicine and remote monitoring
- AI in diagnostic imaging
- Wearable health technology
- Personalized medicine
- Robotic surgery
- Blockchain for patient data
- AI in drug discovery
- Predictive analytics in patient care
- Digital therapeutics
- EHR optimization with AI

04 WHY CHANGE?

- Aging global population
- Rising healthcare costs
- Chronic disease prevalence
- Need for personalized care
- Digital health data growth

05 LEADING COMPANIES

- GE Healthcare (Medical imaging AI)
- Siemens Healthineers (AI in diagnostics)
- Philips Healthcare (AI-driven patient monitoring)
- Pfizer (AI in drug development)
- Medtronic (AI in medical devices)

06 ENABLING TECHNOLOGIES

- AI-driven diagnostic tools
- Robotics in surgery
- Telehealth platforms
- Blockchain for medical records
- Predictive analytics in patient care
- Wearable health monitors
- Natural Language Processing for EHRs
- AI in drug discovery
- Virtual health assistants
- Machine learning in radiology

07 AI DISRUPTION

- Early disease detection algorithms
- AI in pathology for accurate diagnosis
- Chatbots for patient engagement
- AI-driven personalized treatment plans
- Robotics in surgery and rehabilitation
- AI in mental health therapy
- Predictive analytics in epidemic tracking
- Virtual nursing assistants
- AI in genomic sequencing
- Real-time health monitoring systems

08 GREAT EXAMPLES OF AI

- IBM Watson Health for patient data analysis
- Google DeepMind Health for medical research
- Babylon Health's AI chatbot for consultations
- Zebra Medical Vision for radiology AI
- Butterfly Network's AI-powered ultrasound device
- AI-driven surgical robots by Intuitive Surgical
- Oncora Medical for precision radiation therapy
- Tempus for AI in precision medicine
- PathAI for AI-powered pathology
- Prognos for disease prediction analytics

09 ECOSYSTEM REQUIREMENTS

- High-quality, standardized data
- Strong data privacy and security measures
- Collaborative healthcare AI research partnerships
- Skilled AI professionals in healthcare
- Supportive regulatory frameworks for AI

10 NEW RISKS

- Patient data privacy breaches
- AI algorithm biases
- Over-reliance on AI diagnostics
- Ethical concerns in patient care
- Legal implications of AI decisions

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11 MISUSE

- AI-based misdiagnosis (due to biased data)
- Unauthorized access to health data
- AI-generated fake pharmaceutical research
- Manipulation of AI-driven health insurance claims
- Over-reliance on AI, neglecting human oversight

12 DILEMMAS

- Should AI replace human decision in critical care?
- How to balance AI efficiency with patient privacy?
- Addressing AI biases in healthcare decisions?

13 ORG. REQUIREMENTS

- Commitment to ethical AI use
- Infrastructure for AI integration
- Continuous AI training for healthcare professionals
- Collaborative approach with technology partners
- Strong data management and governance

14 STEP BY STEP AI

- Define healthcare AI objectives
- Select appropriate AI technologies
- Ensure data quality and accessibility
- Train medical staff on AI tools
- Monitor, evaluate, and iterate

15 BEST PRACTICES

- Prioritize patient-centered AI solutions
- Emphasize data privacy and security
- Involve clinicians in AI development
- Pilot before full-scale implementation
- Regularly update AI models

16 AI MODELS

- Convolutional Neural Networks for imaging
- Natural Language Processing for EHRs
- Predictive models for patient outcomes
- Machine learning for genomic data
- Reinforcement learning in robotic surgery

17 DIGITAL TWINS

- Digital twins of human organs
- Virtual patient models for training
- Hospital operational models
- Digital replicas of medical devices
- AI-based drug development simulations

18 GLOBAL LEADERS

- United States (Innovative medical technology)
- Germany (Advanced healthcare research)
- Japan (Robotics in healthcare)
- Israel (Healthcare AI startups)
- United Kingdom (Health data analytics)

19 FUTURE JOBS

- AI healthcare data analysts
- AI ethics compliance officers
- Telehealth operation managers
- AI-driven medical device technicians
- Personalized medicine coordinators

20 THE FUTURE OF AI

- AI in personalized genomics
- AI-driven global health monitoring
- Ethical AI frameworks in healthcare
- AI in mental health therapy
- Augmented reality in medical training

21 RECOMMENDED READING

- "Deep Medicine" by Eric Topol
- "The Patient Will See You Now" by Eric Topol
- "AI in Health" by Terrence Sejnowski
- "Machine Learning for Healthcare" by GC Corral
- "The Digital Doctor" by Robert Wachter

22 TED TALKS

- "What AI in healthcare could look like" by Suchi Saria
- "How we can predict the next pandemic" by Larry Brilliant
- "The future we're building — and boring" by Elon Musk
- "The pharmacy of the future?" by Daniel Kraft
- "A doctor's vision for future healthcare" Daniel Kraft

23 ONLINE RESOURCES

- McKinsey & Company - Healthcare Insights
- Gartner - Digital Transformation in Healthcare
- UCF Online - Healthcare Industry Trends
- Joyce - Resources for Healthcare Students
- PubMed

24 NEXT STEPS

- Engage with AI technology.
- Identify opportunities for AI application.
- Invest in AI education and training.
- Please contact us at hello@nextpaper.me for further exploration or inspiration through a talk, workshop or case study. We'd love to help!

NEXT PAPER

Applied AI HEALTHCARE