



**Namibia AI Readiness**  
**AI Regulatory Frameworks, Promotion of AI Innovation,**  
**Opportunities for Youth and AI's role in advancing**  
**Research, Science, Technology and Innovation**  
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**Namibia ICT Summit**

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**Co-Chair: Africa 4IR Working Group – AU Africa Scientific Research & Innovation Council (ASRIC) (2024-present)**

**Chair: Namibia Presidential Task Force on the Fourth Industrial Revolution (2021-2022)**

# National Commission on Research, Science and Technology

Established by the Research, Science & Technology Act No 23 of 2004

*Coordinate, Promote and Develop Research, Science & Technology plus Innovation*

- National Research, Science and Technology Fund
- National Programme on Research, Science, Technology & Innovation
- Regulatory Functions (Register Research Institutes, GMO Permits, etc)
- Establishment of Thematic National Research Councils
  - Biosafety Council (Biosafety Act No 7 of 2006)
  - National Space Science Council
  - Indigenous Knowledge Systems Council
- Policy Research, Advice and Briefs
- National Innovation Coordination (SAIC, Africa NIA Network)
- Science Promotion programmes (STEM promotion, Science Fairs, Math Olympiads, etc)
- Technology programmes (e.g. Applied Science, TT, Emerging Technologies)
- RSTI National Information Collection and Dissemination, Systems plus Open Science



## NATIONAL RESEARCH AND EXPERIMENTAL DEVELOPMENT SURVEY

MAIN ANALYSIS AND STATISTICAL  
REPORT 2021/22

NAMIBIA



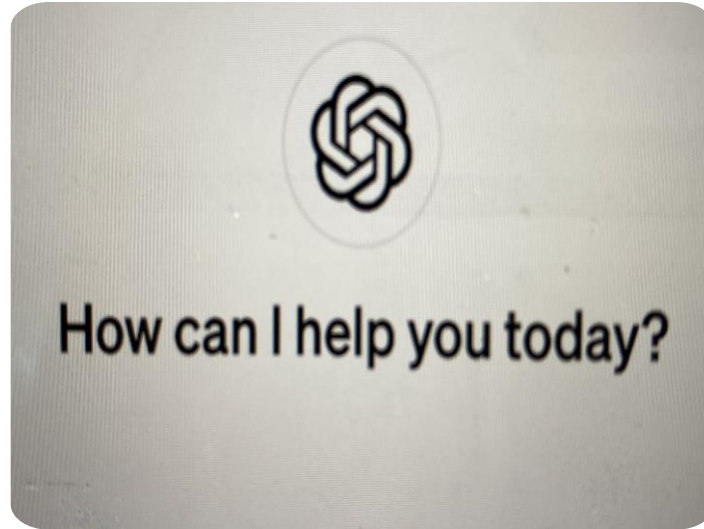
# Intertwined Concerns

- Pressing concerns
  - Climate change and green industrialisation
  - Water-Energy-Food Security Nexus
  - One Health
  - **4IR technology, esp. Artificial Intelligence** as enabler, driver
- Geopolitical tensions impacting all





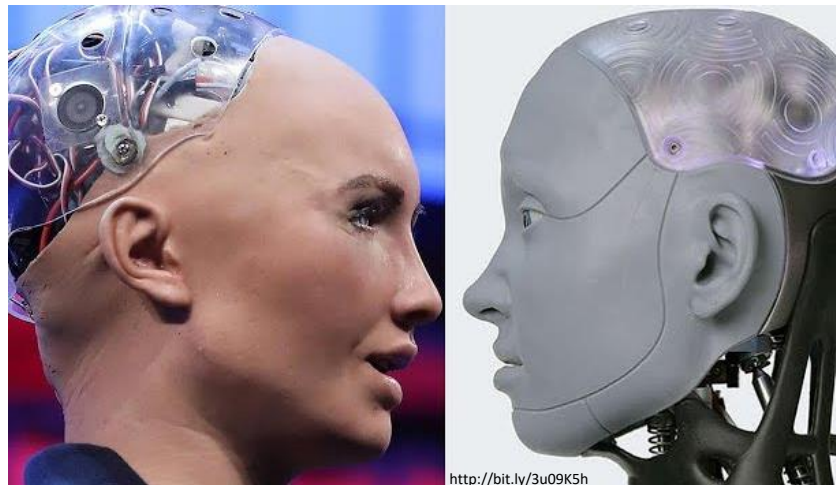
<https://guidebookgallery.org/splashes/netscape>



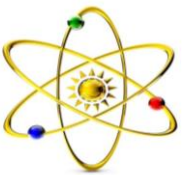
<https://chat.openai.com/>

# The Rise of AI

- A transformative force, evolving rapidly
- Netscape moment for AI: Unleashing OpenAI's ChatGPT
- Dilemma: Desire for human-like AI vs resistance and ethical concerns
- Human control must remain paramount



<http://bit.ly/3u09K5h>



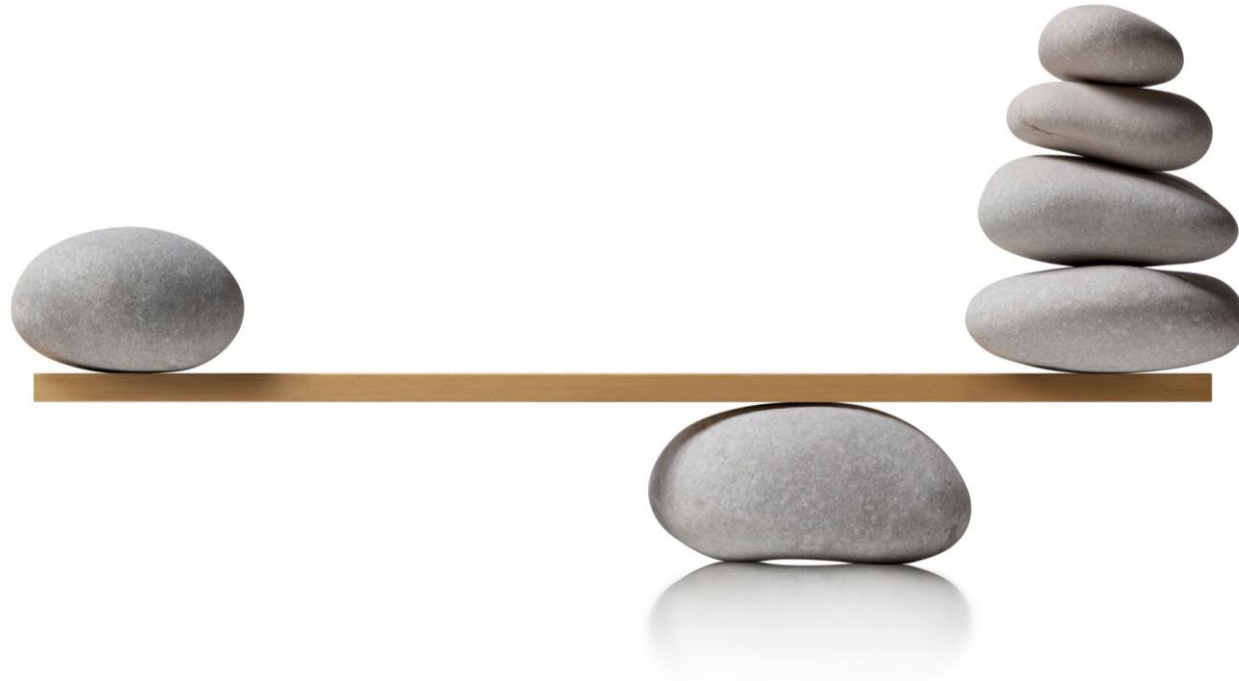
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# Examples: AI Strategic Direction

- Hiroshima Process International Code of Conduct for Organisations Developing Advanced AI Systems
- UNESCO Ethics of AI
- USA Executive Order on AI
- Europe:
  - AI Act
  - EU 5-year AI Vision (Research, Science and Tech)
- Africa
  - AU Continental AI Strategy
  - UNESCO Windhoek Statement on AI in Southern Africa
  - Africa 4IR Policy and Strategy (in dev)
- Namibia
  - 4IR Task Force – 13 Recommendations
  - National Programme on RSTI
  - Draft UNESCO AI Readiness Assessment
  - National AI Working Group



# Africa and AI: Promise & Peril



- Potential to revolutionise various sectors and alleviate many of Africa's challenges
- Own AI solutions underdeveloped, overreliance on imported AI research and technologies, skills, infrastructure, financing, conducive regulatory framework
- Negative and unintended consequences





# Unintended Consequences

- Deepening digital divide
- Deepening of inequalities and biases
- Exclusion of Africa/Namibia due to data poverty
- Future of Work / Job losses
- Unequal development of legislation
- Weaponization of AI
- Exclusion of Africa's values, indigenous knowledge in AI solutions
- Unethical and irresponsible development of AI
- Human-centered AI
- Potential loss of indigenous languages
- Etc





# Namibia AI Opportunities

- Namibia's youthful population and emerging startup ecosystem provide a fertile ground for technological innovation and AI development.
- Technological leapfrogging
- Plenty of challenges to be solved, e.g.
  - Climate Adaptation, Mitigation & Resilience
  - Clean water and sanitation
  - Energy
  - Food security
  - One Health
  - Education and Skills
  - Space Science and Technologies
  - Innovation and Manufacturing
  - Indigenous Knowledge Management
- Ethics, responsible, trustworthy, human-centered AI development





# Namibia AI Challenges

Includes:

- Specialised skills
- Educational Reform
- Legislative and regulatory framework
- Infrastructure (data centers, energy, equipment, telecommunications, etc)
- Funding
- Data poverty
- Cybersecurity
- Ethics
- Human centered AI





# Namibia: Initiatives

- Draft Overarching ICT Policy (& related ones)
- Digital Transformation Strategy
- 4IR Task Force Report
- National 4IR Conference and Expo
- UNESCO Southern Africa Subregional Forum on AI
- Capacity Building:
  - Curriculum development efforts
  - Data Science (UNAM and NUST)
  - Bachelors AI and HCI (NUST)
  - Human Centered AI Dev for startups)
- AI Virtual Institute at UNAM
- NCRST: Research and Innovation grants; NPRSTI
- National AI Working Group
- Telecoms Infrastructure (e.g. 5G)



# Future Opportunities: AI

- Align and integrate with National Research Priorities
- AI Scientific Solutions to Namibia's challenges
- AI in Production and Manufacturing Environments
- Regional and National AI Research Institutes
- AI Governance and enabler frameworks
- AI StartUps, SMEs and MSMEs
- Rapid Upskilling and reskilling: Youth, Educators
- Enabling emerging industries for Green Hydrogen, Oil and Gas, Critical Raw Materials, Blue Economy





# National AI Working Group

- **Steering Committee:** NPC, NCRST, MHETI, MICT, OPM, MEAC, MHSS, NUST, UNAM, IUM (MOD, CRAN invited)
  - Thematic Technical Groups: Diverse experts.
- **R&D and Innovation Strategy for AI**
- **Education and Skills:** Develop Namibian **expertise** in AI
- **Co-design** the priority areas and implement
- **Infrastructure**
- **Data Governance and Infrastructure**
- **Partnerships**
- Develop **standards and guidelines** for ethical, responsible and human-centered AI RD&I in Namibia
- AI Innovators and StartUps
  
- Establish the **National AI Institute**



# Proposed Namibia National AI Institute (Draft 1)

## SW/AI Development Centre Coding Academy Mathematics Academy

- Project-based Just-in-time training while developing **e-government** projects
- Bootcamps at every milestone stage of the projects
- Out-of-school youth
- Local & int expert trainers – 2week hands-on bootcamps based on milestones in the projects
- pipeline for developers, researchers, Trainer-of-Trainer approach

## AI R&D Centre

- Research
- Applications of AI
- Exchange programmes
- Partnerships
- Curricula Design (Schools, Tertiary Education)
- Human-Centered, Trustworthy, Reliable, ethical AI development

## AI Innovation Centre

- Tech StartUp Accelerator
- Innovator programmes
- Commercialisation
- Technology Transfer Platforms

Policies, Regulations, Frameworks, Standards, Strategies, Sandboxes

Data and Data policies (NSA, CRAN, MICT, NCRST)

High Performance Centers  
National Data Centre (private government cloud) and

Infrastructure (Physical, Telecommunications, etc)





NATIONAL INSTITUTE

Modern AI

Development & Private Sector

AI

Project-Based Youth Solutions

AI

NATIONAL INSTITUTE

DATA

DATA GOVERNATION

E-GOVT

R&D

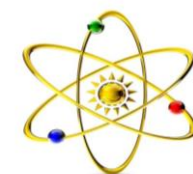
Academy Private Sector

Out-of-School Solutions

Private Advtion



The End



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