# Expanding IEEE's reach to Industry
## …Data-based Projects…
### …Practitioners, Non-Society Members, YP's, WiE,…

**Dr. Rakesh Kumar**, *IEEE Life Fellow*

*IEEE/TA Data-based Strategy Ad Hoc Committee Chair*
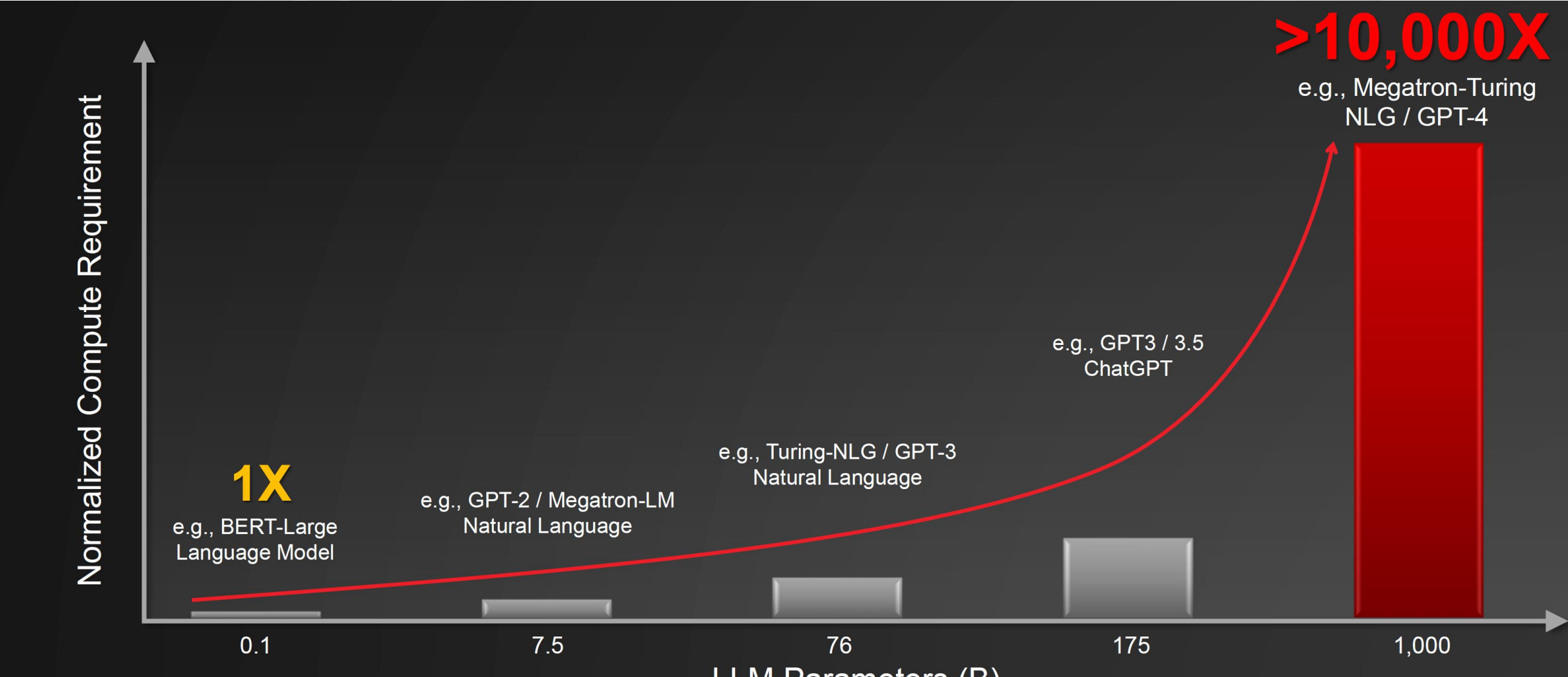
*Past-Chair IEEE Roadmaps*

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2024R10 GM March 2-3, 2024

# Data-Based Business Strategy Ad Hoc Committee

➢ Launched as an IEEE Ad Hoc committee in 2022

  ➢ Currently continuing as a TA Ad Hoc committee

➢ Some Trends

➢ DataPort 2.0

**The world is generating ZetaBytes of DATA**

# Generative AI significantly Accelerating compute needs



Source: OpenAI, NVIDIA

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*Ref:* TSMC Kevin Zhang, ISSCC February 19, 2024

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# From **Pat Gelsinger, Intel CEO...**

Every aspect of human existence is becoming more digital creating an era of
## sustained, long-term demand

- Ubiquitous Compute
- Cloud-to-Edge Infrastructure
- Pervasive Connectivity
- Artificial Intelligence

**A $1T market opportunity**

Simulation of **Virtual Economies**

Simulation of **Intelligent Avatars & Bots**

Simulation of **Full Immersion**

Simulation of **Photorealism**

Compute: $10^9$, $10^{15}$, $10^{21}$, $10^{27}$, $10^{30}$

Tera, Peta, Zetta, Quecca

1990   2000   2010   2020

*Ref: Pat Gelsinger, Intel Investor Day, June 2022*

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# Performance Democratization

**100B INTELLIGENT CONNECTED DEVICES**

Distributed Intelligence

Compute

$10^{18}$

$10^{15}$

Cloud Everything

$10^{9}$

Mobile Everything

$10^{4}$

Network Everything

# Exascale
## For Everyone

$10^{2}$

Digitize Everything

1980

1990

200
0

2010

2020

**intel** labs

**Technology has changed Lives….**

**…Many of _you are_ creating solutions….**

**…Many Many more challenges & solutions on the way!!!….**

**…Many New PRODUCT Opportunities…**

**…Many TECHNOLOGY Innovations needed…**
_Multi-disciplinary Integrations_

# IEEE Has an Extensive Data Portfolio

**IEEE Xplore
~ 6M Documents**

**>2,000
Conferences**

**> 1000
Standards**

**How do we create additional VALUE from our DATA?**

**IEEE**

# Four Product Categories Explored…

**Ask IEEE**

- Knowledge search engine
- "RAG"* AI
- Answers Q's based on IEEE info
- IEEE maintains IP ownership

**ForeSight**

- Derive Pubs & Conference Data
- Create Tech Trend Reports
- Market to CxO's, Analysts

**DataPort 2.0/3.0**

**A.I. Use Cases Digital Transformation**

- From Data Warehouse to Knowledge Partner
- Understand Customer Interests
- Offer relevant solutions

* RAG: Retrieval Augmented Generation

**IEEE**

# IEEE *DataPort*
## Valuable Tool for Research Data Management

**IEEE DataPort™**  DATASETS  |  SUBMIT A DATASET  |  COMPETITIONS  |  🔍  |  ◆IEEE

Store, Share, Access, & Manage Research (or Other) Data

Gain Exposure for Your Research.
Learn More »

**WHY IEEE DATAPORT?**
Store, search, and access standard or Open Access datasets up to 2TB.
Learn More

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Login for freely available Open Access datasets or subscribe for full access.
Learn More

**SUBMIT A DATASET**
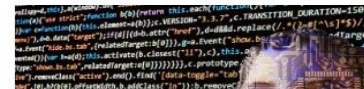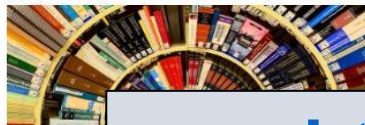Storing and sharing your datasets on IEEE DataPort is completely free.
Learn More

**SUBSCRIBE**
Subscribers may download all datasets or access them directly on AWS.
Learn More

**DATASET CATEGORIES**

https://ieee-dataport.org

# Getting to Know IEEE DataPort

**Currently**
**>6,500,000 global users**
**>5,000 datasets!**

**Cloud Service Provider (AWS and/or others)**

**Cloud Storage & Cloud Services**

**IEEE**DataPort™

**IEEE Web Interface**

| Digital Object Identifier | Link to manuscript | CCBY License | Metadata Cataloger |
|---|---|---|---|
| Store data, scripts & analyses | < 2TB per dataset | Easy to Use Web Interface | Data Challenge Manager |

Data Analytics Community

Universities and Research Institutions

Government Agencies

Industry

Scholarly Authors and Conference Attendees

**Datasets:**
Span all areas of research (not just engineering)
- Bio-data
- Sensor data
- Weather data
- and many others

**All formats accepted (except executables):**
- Video files
- Images/photos
- CSV
- Audio files
- and many others

3/3/2024

# DataPort – some current statistics

➤ ~7M Users (cumulative)

➤ ~10K Users/DAY

➤ ~5,500 Datasets

➤ Over 90% of IEEE publications offer authors to upload their datasets

➤ Institutional subscriptions are gaining momentum

**NIC\* $1M funding to DOUBLE usage in 2024**

NIC: New Initiatives Committee

# IEEE *DataPort* - Users
## 3 of 5 Top countries are from Region 10
## India has the MOST USERS (~20%)

*Top countries (#Users)*

| | 2022 | 2023 |
|---|---|---|
| • Bangladesh | 57K | 980K |
| • India | 572K | 547K |
| • Algeria | 35K | 437K |
| • Nepal | 34K | 195K |
| • Egypt | 34K | 136K |
| • USA | | 103K |

# IEEE DataPort 2023 Climate Change Contest

## ...Winner from China

## ...Runner-up from Meghalaya, India



**LSDSSIMR: LARGE-SCALE DUST STORM DATABASE BASED ON SATELLITE IMAGES AND METEOROLOGICALL REANALYSIS DATA**
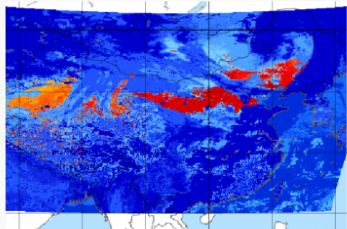
| | | | | |
|---|---|---|---|---|
| Citation Author(s): | Cong Bai | | 👁 477 Views | |
| | Zhipeng Cai | | Categories: | Artificial Intelligence |
| | Xiaomei Yin | | | Machine Learning |
| | Jinglin Zhang | | | Geo-Sensing |
| Submitted by: | zhipeng cai | | | Computer Vision |
| Last updated: | Tue, 10/31/2023 - 04:41 | | | Climate Change/Environmental |
| DOI: | 10.21227/g8x0-1744 | | | Weather |
| Data Format: | HDF5 | | | Geoscience and Remote Sensing |
| Link to Paper: | LSDSSIMR: Large-Scale Dust Storm Database Based on Satellite Images | | | Remote Sensing |
| | and Meteorologicall Reanalysis Data | | Keywords: | Dust storm; Database; FY-4A; Met |
| | | | | Remote sensing; Geoscience; |
| License: | Creative Commons Attribution 🅭🅯 | | | |

**REAL-TIME LANDSLIDE DATASET OF MAWIONGRIM, MEGHALAYA, INDIA**

| | | | |
|---|---|---|---|
| Citation Author(s): | J Sharailin Gidon *(National Institute of Technology Meghalaya)* | 👁 403 Views | |
| | Jintu Borah *(National Institute of Technology Meghalaya)* | Categories: | |
| | Smrutirekha Sahoo *(National Institute of Technology Meghalaya)* | | |
| | Shubhankar Majumdar *(National Institute of Technology Meghalaya)* | | |
| | Masahiro Fujita *(University of Tokyo)* | Keywords: | |
| Submitted by: | SHUBHANKAR MAJUMDAR | | |
| Last updated: | Fri, 10/27/2023 - 02:07 | | |
| DOI: | 10.21227/hyf5-3c15 | | |
| Data Format: | *.csv | | |
| Link to Paper: | Bi-Directional LSTM Model for Accurate and Real-Time Landslide Detection: A Case Study in Mawiongrim, Meghalaya, India | | |
| Links: | Bi-Directional LSTM Model for Accurate and Real-Time Landslide Detection: A Case Study in Mawiongrim, Meghalaya, India | | |
| License: | Creative Commons Attribution 🅭🅯 | | |



https://ieee-dataport.org/news/finding-solutions-climate-change-crisis-one-dataset-time
https://ieee-dataport.org/documents/lsdssimr-large-scale-dust-storm-database-based-satellite-images-and-meteorologicall
https://ieee-dataport.org/documents/real-time-landslide-dataset-mawiongrim-meghalaya-india

# IEEE Data Descriptions

*IEEE Data Descriptions* is a journal that publishes short articles on all aspects of data: data descriptors, data collections, and metadata.  Its overarching purpose is to promote publicly available datasets (open access or subscription-based access) in support of reproducible science while at the same time bringing insights into the associated dataset, data collection methods, and data quality. The metadata collected provides enhanced dataset discoverability and creates a foundation for future data science tools such as auto-discovery and mashups.

https://open.ieee.org/ieee-announces-6-new-fully-open-access-journals-and-3-hybrid-journals-coming-in-2024/

# DataPort Opportunities

➢ Upload your Data…Share…Get free DOI and make Data citable

    ➢ Free uploads and downloads for Society Members

    ➢ Normal charge for OPEN Access Dataset uploads

    ➢ ALL Datasets available for download for a subscription fee for non-members and non-Society members

➢ Design and other Competitions Data storage and sharing

➢ We are looking for a few DataPort "Ambassadors" – 5 from each Region

# "DataPort Ambassador" Roles

➢ Promote DataPort (and other Data products) in the region

➢ Gather and report on Region Data needs

➢ Local Point-of-Contact

➢ Maintain local KPI's

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