

# Teaching Data Science and Building Data Literacy – Nationally and Globally

With the Northeast Big Data Innovation Hub & National Student Data Corps

Florence D. Hudson, Executive Director, PI, Founder of NSDC Emily Rothenberg, NSDC Program Manager National Student Data Corps
Northeast Big Data Innovation Hub at Columbia University

# Northeast Big Data Innovation Hub Team



Florence D. Hudson **Executive Director** Northeast Big Data Innovation Hub



Lauren Close **Operations** and **Communications** Manager



**Emily Rothenberg** National Student Data Corps Program Manager

### Columbia University Students - Part Time



Sanket Bhandari **MS Data Science '23** 



**Sneha Dahiya MS Business Analytics '23** 



**Anna Eggers** BA Film & Writing '24



Stephanie Guo **MS Business Analytics '23** 



Hannah Yang MS Data Science **'23** 



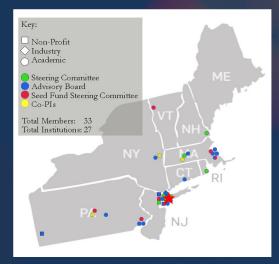
Varalika Mahajan MS Data Science **'23** 



Lylybell Teran MS Data Science **'23** 



#### 🐈 PI Institution



Funded by NSF grants #1550284, 1748395, 1916585, 2028999, 2139391, and NIH AIM-AHEAD.

- The Northeast Hub is a community convener, collaboration hub, and catalyst for data science innovation in the Northeast Region and around the world.
- Building a diverse, equitable, and inclusive community with accessible resources is central to our work.
- We are a community of over 8,300 individuals from 1,375 organizations, all 50 U.S. States and 61 countries. Join us!

Four Focus Areas guide our community engagement and activities.







Health



Urban to Rural Communities



Responsible Data Science: Security + Privacy + Ethics

http://nebigdatahub.org/about/



# Northeast Hub Focus Areas Guide our Activities The NSDC is the Hub's premier Education & Data Literacy Program



http://nebigdatahub.org/about/



## National Student Data Corps

The National Student Data Corps (NSDC) is a community-developed initiative that provides resources and opportunities for students to learn data science, in a community of support, with a special focus on engaging underserved institutions, students, and communities.

There are three teams from the NSDC Founding Committee leading the effort.

**Content and Pedagogy Team**  **Peer Instructor and Mentoring Team** 

Outreach Team











































































## NSDC Enables Data Science Literacy -Now National with an International Reach!

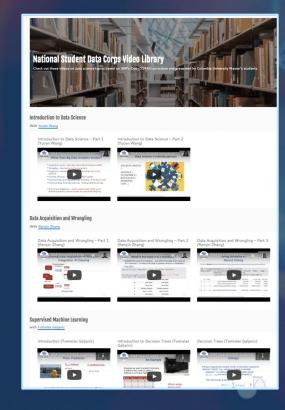


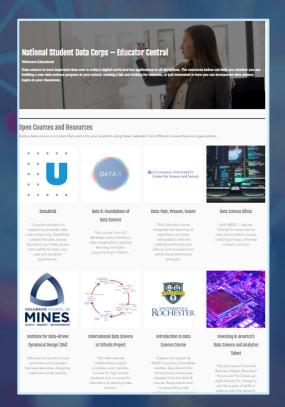
As of June 2023, the NSDC community is made up of 4,430 individuals from 613 institutions representing the U.S. and 28 other countries – Australia, Bangladesh, Botswana, Canada, China, Ecuador, Ethiopia, France, Germany, Ghana, Hungary, India, Israel, Japan, Kenya, Lebanon, Mali, Mexico, Moldova, Nepal, Netherlands, Nigeria, Peru, Philippines, South Korea, Turkey, United Arab Emirates, and the United Kingdom.



## NSDC Provides over 200 Free Online Data Science Resources for Learners & Educators









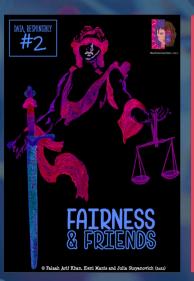
## Data, Responsibly Comic Book Series

Teaching data science ethics and fairness. In English, Spanish, French, Portuguese, and Greek.

Included in the NSDC Educator and Learner Central, and Data Science Resource Repository (DSRR) (https://nebigdatahub.org/learner-central-data-science-ethics/)





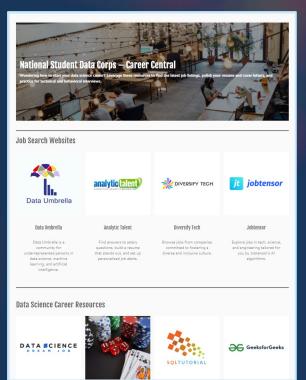


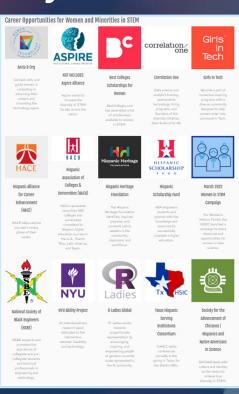


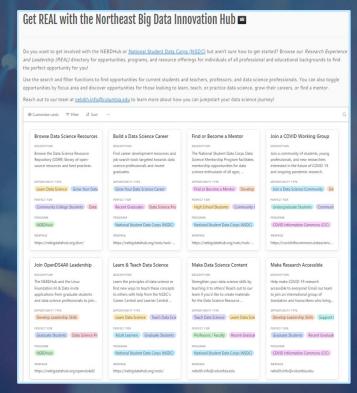
Falaah Arif Khan and Julia Stoyanovich. "Mirror, Mirror", "What is AI?", "Fairness and Friends", "Who lives, Who dies, Who decides?". Data, Responsibly Comics, Volume 1 and 2 (2020). https://dataresponsibly.github.io/comics/



# NSDC Free Online Resources for Career & Professional Development



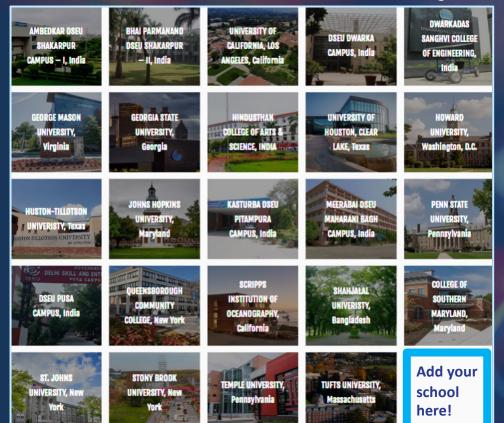




https://nebigdatahub.org/nsdc/nsdc-career-central/https://nebigdatahub.org/nsdc/nsdc-volunteer-central/



## Start or Join an NSDC Chapter! In US and Globally!





### Chapter members benefit from:

- Data science resources
- Mentorship
- Research, volunteer and career opportunities



# NSDC Data Science Career Panels - 14 panels to date, 40 expert panelists, 3800 viewers!

Representing a diverse range of careers and paths to data







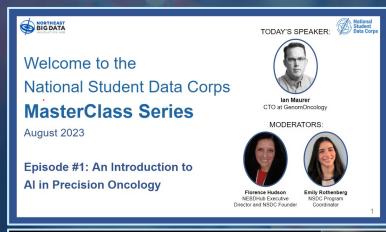


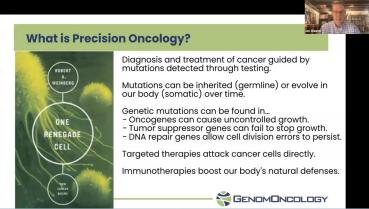
## **NEW NSDC MasterClass Series**

The new NSDC MasterClass Series is designed to showcase how data science is being leveraged in various domains.

### Highlighted domains may include:

- Health
- Finance
- Athletics
- Entertainment, Music & Media
- Technology
- Education
- And more!







## **NSDC Data Science Projects (DSP)**

The NSDC DSP provide **practical data science project experience** for learners of all skill-levels and education-levels, and highlight data science as a team effort!

Through a guided **Google Colab Noteboo**k, and supportive weekly mentorship calls, cross-institutional teams of students learn data science techniques and gain leadership and professional development skills.







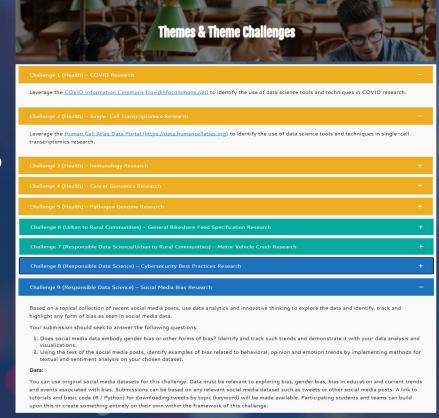


## Join an upcoming NSDC Data Science Symposium!

The NSDC Data Science Symposium (DSS) invites students to learn about data science research and grow their research community.

Students from higher ed institutions are invited to create a data science research project and showcase their findings in a virtual poster board presentation.

The NSDC Data Science Symposium is held annually, and we welcome you to join the upcoming challenges!





## **NSDC** Mentorship Program

Find or become an NSDC Mentee or Mentor to support a data science journey! The National Student Data Corps Data Science Mentorship Program facilitates mentorship opportunities through the NSDC Slack Channel for over 610 data science students, professionals, and enthusiasts across the U.S. and beyond!

#### NationalStudentDataCorps ~



**@channel**, I hope you're having a fun weekend and wish you great holidays ahead.

I'm Dashansh, a Project Coordinator at NEBDHub and in charge of the Mentorship Program. If you're in need of guidance or mentorship, I would be happy to connect you to our amazing volunteers. Don't be shy, just make a request and I'll try my best to set you up with someone whose expertise aligns with your needs.

That being said, have a great weekend. (edited)





Interested in becoming an NSDC Mentor? bit.ly/become-mentors

Interested in becoming an NSDC Mentee? bit.ly/become-mentees



## Data Science Resource Repository

The DSRR is an open access platform with 800+ resources including data science best practices and content to broadly increase knowledge capacity, with a specific focus on underserved communities.

### **Topical areas include:**

- Accessibility & Data Science
- Al
- Apache
- Azure
- Big Data
- Bioinformatics
- Cities
- Climate Change & Environment
- Coding
- COVID

- CSS
- Cybersecurity & Privacy
- Data Analytics
- Data Modeling
- Data Science Basics
- Data ScienceCareers
- Data Science for Good
- Data Visualization

- Database

  Management
- Deep Learning
- DiversityEthics & Bias
- Java
- Kubernetes
- Linear Algebra
- Machine Learning
- Math
  - **Fundamentals**

- Natural Language
  Processing
- Pandas
- Power BI
- Probability
- Public Health
- Public Policy
- Python
- Quantitative Reasoning
- QuantumComputing

- Research Tools
- RuralPopulations
- Splunk
- SQL
- Statistics
- Tableau
- TypeScript
- Water

Volunteer opportunity to add more content, including Spanish content.

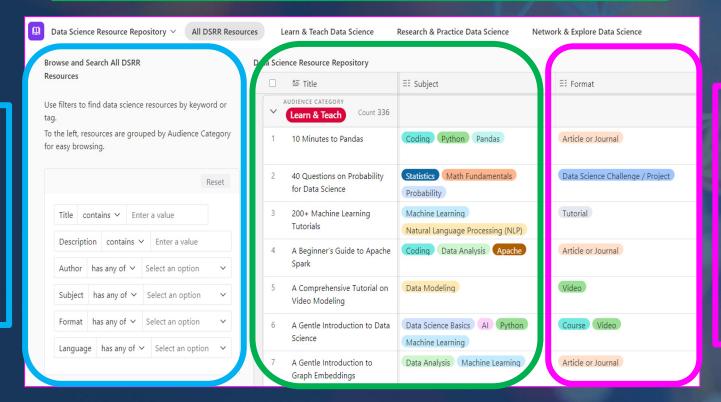
https://nebigdatahub.org/data-science-resource-repository/



## Data Science Resource Repository

Resources are grouped by subjects, or topical areas.

Users can browse, search, and filter resources by keyword or tag.



Learning formats include articles, journals, tutorials, videos, textbooks, courses, challenges, and podcasts.



## OpenDS4All - Call for Participation

The NEBDHub & NSDC, in collaboration with the Linux Foundation AI & Data, is delighted to invite you to join the leadership and development team of the OpenDS4All GitHub repository.

The OpenDS4All GitHub repository includes hundreds of resources from slide presentations on data science ethics and supervised machine learning, to Jupyter notebooks which provide hands-on learning opportunities.

If you would like to join this volunteer team, the three volunteer roles include:

- Technical Steering Committee Member
- Content Review Team
- Content Developers





## Thank you!

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National Student Data Corps
Northeast Big Data Innovation Hub at Columbia University

- Sign up for the NEBDHub & NSDC mailing list: bit.ly/HubNewsSignup
- Join the NSDC Community: <a href="nebigdatahub.org/nsdc">nebigdatahub.org/nsdc</a>
- Join the NSDC Slack Channel: bit.ly/nsdc-slack-channel
- Keep up with the NEBDHub & NSDC on the NEBDHub YT Channel:
  - youtube.com/@NortheastBigDataInnovationHub
- Join a Hub or NSDC event: nebigdatahub.org/events-calendar
- Any questions, reach out to us at contact@nebigdatahub.org

All available through: https://nebigdatahub.org/about