Armaan Karan Mehta

Curriculum Vitae

Howard Hughes Medical Institute, Stowers Institute for Medical Research
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EDUCATION

2023 **M.P.H. Public Health,** The George Washington University
Women and Gender Minority Health, Psychiatric epidemiology

2018 **B.S. Computer Engineering,** Georgia Institute of Technology
Digital Signal Processing, Healthcare Data Security

2024 - 2026 **Postbaccalaureate Premedical Coursework,** Northern Virginia Community College
Biology, Organic Chemistry, Biochemistry, Cell Biology

PROFESSIONAL APPOINTMENTS

2025 - Present **Research Specialist**, HHMI / Stowers Institute for Medical Research
Supervisor: Dr. David L. Stern (Stern Lab); Evolutionary genetics, computational biology, comparative genomics

2024 - 2026 **Instructional Assistant and Guest Lecturer**, The George Washington University, Milken Institute School of Public Health
Course: Autism, A Public Health Perspective; Supervisor: Dr. Sean Cleary

2018 - 2025 **Senior Machine Learning Engineer / Health Researcher**, The MITRE Corp., McLean, VA
Supervisors: Liz Oppenheim (Health Research); Keith Boyer (Engineering)

2018 **Application Architect**, Deloitte, Washington, DC

2017 **Business Operations and Data Analytics**, Citigroup, Long Island City, NY

2016 **Data Engineer**, Capital One, Richmond, VA

2016 **Project Manager**, Office of Information Technology, Georgia Tech

2015 **Software Engineer**, ARRIS Group Inc., Suwanee, GA

PUBLICATIONS

1. Mehta, A. (2026). Artificial Intelligence as a Spontaneous Religious Threat. Global Affairs and Religion Network, The George Washington University. Washington, DC.

2. Mehta, A. (2025). Faithful Diagnoses: Association of Socioeconomic Status with Diagnoses of ASD and ADHD in Girls. *medRxiv* 2025.05.11.25327397. https://doi.org/10.1101/2025.05.11.25327397

3. Casnoff, C. A., Mehta, A., et al. (2023). A Vision for Mental Health Systems of Care for Young People. The MITRE Corporation, McLean, VA. https://www.mitre.org/news-insights/publication/vision-mental-health-systems-care-young-people

4. Mehta, A., Markman, B., & Rodriguez-Cintron, W. (2022). Don’t jump down my throat: gender gap in HPV vaccinations risk long-term cancer threats. *Expert Review of Vaccines*, 21(8), 1045–1053. https://doi.org/10.1080/14760584.2022.2075850

PRESENTATIONS

- Development, Regulatory Genomics & AI, Stowers Institute for Medical Research, Kansas City, MO. April 22, 2026
- ASPIRE RIKEN Meeting, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. December 1, 2025
- Annual guest lectures, The George Washington University: (1) biological considerations for gender differences in autism diagnoses; (2) current genetic and neurobiological methods of autism subtyping; (3) autism pharmacology in pediatric and adult patients. Spring semesters 2024 - 2026

RESEARCH EXPERIENCE

Evolutionary Genetics, Stern Lab (2025 - Present)
Howard Hughes Medical Institute / Stowers Institute for Medical Research; Supervisor: Dr. David L. Stern

- Designed, trained, and tested deep learning models for evolutionary genetics including transformers, CNNs, RNNs, autoencoders, and BiLSTMs
- Built petabyte-scale data pipelines to assemble, decontaminate, and annotate genomes
- Evaluated long-read and hybrid assembly tools and performed genome curation
- *Unpublished work omitted*

Autism, A Public Health Perspective (2023 - 2026)
The George Washington University; Supervisor: Dr. Sean Cleary

- Conducted statistical analyses of nationwide autism datasets (NSCH, ADDM) using Python and STATA, integrating community-partner interviews with epidemiologic data.
- Investigated sex and gender components of autism and the contradictions between biological and genetic evidence for diagnostic differences.
- Co-developed participatory research methods involving unreliably speaking autistic adults as research and teaching partners.
- Created and presented over a dozen lectures on the epidemiology, neurobiology, and pharmacology of autism spectrum disorders

Evaluation of Federal Programs for Children's Mental Health (2022 - 2023)
The MITRE Corporation; Supervisor: Liz Oppenheim

- Aggregated and classified more than 40 federally funded mental health programs into structured analytic datasets covering target populations, goals, expenditures, and outcomes.
- Conducted qualitative classification of program objectives and regression analysis of funding sensitivity to identify under- and over-funded program categories.
- Identified and advised on areas of improvement and cost savings in current federal programs, as well as necessary changes to current definitions of child psychological epidemiology
- Authored sections of a published MITRE report and presented findings to the Health Advisory Council of healthcare executives.

Machine Learning, Biotechnology, and Health Research (2018 - 2025)
The MITRE Corporation; Supervisors: Keith Boyer

Clearance: TS/SCI, DHS EOD 5C (2021-2025)

- Prototyped LLM-embedding-based vector database storage for flow cytometry and other biotechnical data
- Implemented UNet deep CNN architectures for medical image segmentation on sparse (<10k) detection datasets
- Built parsers for efficient storage of laboratory data in Parquet and flat-file formats.
- Designed multi-agent reinforcement learning environments (PPO) for strategy analysis
- Built geospatial pipelines for graph stores of millions of international populations for disease modeling
- Architected secure AWS GovCloud multi-account environments and automated account deployment

- Advised U.S. Congress and senior military staff on tradeoffs between cloud deployments for ML architectures.

TEACHING EXPERIENCE

The George Washington University, Milken Institute School of Public Health
Teaching Assistant and Guest Lecturer, Autism: A Public Health Perspective (2024 – 2026)

- Facilitated community based participatory research between epidemiology students and local autistic adults. Included helping students gain familiarity with unreliably speaking community members using Augmentative and Alternative Communication devices (AAC) and teaching them about different technological communication options when connecting with the community.
- Taught students about several national survey datasets and presented series of research findings on the epidemiology of autism, ADHD, and gender in the United States.
- Annual lectures on gender and sex epidemiology of autism, genetic and neurobiological methods of autism subtyping, and pharmacology patterns. Recurring guest invitation by request.

SERVICE AND VOLUNTEER EXPERIENCE

2020 - Present	Volunteer, Virginia Medical Reserve Corps. Roles include election poll health worker, COVID-19 vaccine transporter, vaccine registration, contact tracing, sanitation, and resource distribution to at-need communities. President's Silver Volunteer Service Award recipient.
2024 - 2026	Active member, Global Affairs and Religion Network research group and journal club, The George Washington University.
2022 - 2024	Trained backcountry medical responder; primary medical resource for rock climbing team on outdoor excursions; responded to more than a dozen front-country and backcountry emergencies.
2019 - 2025	USA Climbing Level 2 Certified Coach, LifeTime Fitness (2019 - 2020) and Sportrock Climbing Centers, Alexandria, VA (2020 - 2025). Coached youth athletes (ages 5-18) and adults, including national-level competitors; instruction in technique, training plan design, nutrition, injury prevention, and return-to-sport care.

AWARDS AND RECOGNITIONS

2020	President's Volunteer Service Award, Silver - COVID-19 Response, VA Medical Reserve Corps
2014 - 2017	Dean's List, Georgia Institute of Technology

CONTINUING EDUCATION

Professional Certifications:

- AWS Certified Solutions Architect – Associate, Amazon Web Services (2018 – 2021).
- Social and Behavioral Research, CITI Program, The George Washington University (2021 – 2024).
- Incident Command and National Incident Management System IS-100.C and IS-700.B, FEMA (2020-2021)

Medical and Rescue Certificates:

- Wilderness First Responder Certification, NOLS, 2022
- Level 1 Avalanche Training, AIARE, 2022
- Rock Climbing Rescue, REI, 2019

CDC, VDH, NDPHTN, and NCTSN Volunteer Training (~50 hours, 2020 – Present):

- **CDC:** Principles of Vaccination; Vaccine Administration; Vaccine Storage and Handling; You Call the Shots series (Tdap, MMR, Influenza, Hepatitis A, Vaccine Administration); Pfizer-BioNTech Preparation and Administration; HPV.

- **Virginia Department of Health:** Immunization Techniques; Anaphylaxis; Vaccination in a Pandemic; Airborne and Bloodborne Pathogens; Point of Dispensing; Use of PPE; Disaster Behavioral Health; Human Trafficking for Volunteers.
- **NDPHTN:** Practical Epidemiology; Measurement of Global Health.
- **NCTSN:** Psychological First Aid.

Coursera Certificate Courses:

- Fundamentals of Immunology: Innate Immunity and B-Cell Function
- Developing the Susceptible, Infectious, and Recovered Model
- Living with Dementia: Impact on Individuals, Caregivers, Communities and Societies
- Epidemics: The Dynamics of Infectious Diseases
- Essential Epidemiologic Tools for Public Health Practice
- COVID-19 Training for Healthcare Workers
- Epidemiology: The Basic Science of Public Health
- Medical Emergencies: Airway, Breathing, and Circulation
- EMT Foundations
- COVID-19 Contact Tracing
- Measuring and Maximizing Impact of COVID-19 Contact Tracing
- Predicting the Weather with Artificial Neural Networks
- Chemerinsky on Constitutional Law: The Structure of Government

CLINICAL AND WILDERNESS TRAINING

- NOLS Wilderness First Responder (2022) - patient assessment, emergency medical care, long-term patient management, evacuation, epinephrine administration, AED / CPR.
- COVID-19 vaccine transportation, administration and aseptic technique, Virginia Medical Reserve Corps.
- Avalanche safety training; endurance sports and high-altitude mountaineering experience. AIARE, REI

LANGUAGES

English	Native
Mandarin Chinese	Intermediate (Harvard Business Chinese, 2013; coursework through 2018)
Japanese	Intermediate
Hindi	Conversational (childhood home use)

SOFTWARE SKILLS

Non-Exhaustive Selection of Common Software:

Programming:	Python, Java, C++, SQL, Scala, R, STATA, Bash, HTML / CSS
AI and ML:	PyTorch, TensorFlow, Keras, scikit-learn, Ray / RLlib, MLflow, LangChain, Hugging Face
Bioinformatics:	Nextflow, hifiasm, BWA, samtools, NCBI (BLAST, SRA), Bioconda, Pacbio pbtk
Cloud DevOps:	AWS (Former Solutions Architect), Azure, Docker, Kubernetes, Terraform, Jenkins, CI / CD
Data Engineering:	PySpark, EMR / Hadoop, Apache Kafka / Nifi / Zeppelin, Neo4j, Qdrant, Pandas, Parquet
Geospatial:	QGIS, Geoserver, geospatial graph databases
Tools:	Git, Jupyter, Jira, Salesforce, Splunk, Pro Tools