Nandita **Rahman**

Data Scientist · M.S. ·
Washington, DC 22209
(571)274-7449 | nanrahman@deloitte.com | rahm0054 | nanditarahman

Summary

Data scientist with machine-learning, bioinformatics and wet-lab experience in contracting, academic, and medical device industry setting. Current work includes AI-explainability (Trustworthy AI) research, guidance development for AI risk management, and providing Subject Matter Expertise (SME) to federal agencies on building safe, secure, reliable, transparent and fair AI-enterprises. Adjunct lecturer at University of Maryland Baltimore Country, teaching undergraduate-level software tools for bioinformatics and data science.

Work Experience

Deloitte
Rosslyn, VA

Senior Advisory Consultant (40.0 hours/week) *Aug. 2021 - PRESENT*

- Client work (Individual contributor/SME): Center for Medicaid (CMS)-Office of Minority Health, Veteran Affairs (VA)-Cybersecurity Innovation Program, Health and Human Services (HHS)-Office of the Chief Information Officer
- Trustworthy/ethical AI (TAI) R&D, Regulatory and Model-risk Management Group (GPS).
- Publication, R&D eminence work within AI Strategic Growth Offering, (CortexAI for Government, TAP)
- Research focus: AI Explainability modeling, AI Governance, Model-risk management, Ethical AI policy & Regulations.
- Primary technical skills: Python, R, AWS, Azure, Jupyter, Tableau, Git, Tensorflow, Machine-model development.

Noblis
Reston, VA

Bioinformaticist (40.0 hours/week) *Sep. 2019 - Aug. 2021*

- Developed software component for Noblis BioVelocity tool, applying machine-learning modeling on genomic sequence data as detection method for surveillance of genetically-modified pathogens/microbial agents.
- Use of python, R programming, MATLAB and Tableau to apply and communicate machine-learning modeling on large biological data sets.
- Noblis Sponsored Research (NSR): awarded funding as lead PI for proposal developed during ideation for Noblis sponsored research for fiscal year 2021. Work centers on innovation within the ML/AI/Data science pipeline.
- Technical contributor to several NSR projects, focus-areas include: SARS-CoV-2 WGS analysis, biosensors, biological 3D-printing
- Biological Safety Officer, established biological safety program for lab personnel at Noblis and expanded lab to biosafety level-2 capabilities.
- Bioinformatics mentor for Noblis intern cohort for Summer/Winter 2020, and currently Summer 2021.

Military HIV Research Program, Walter Reed
Silver Spring, Maryland

Bioinformatics - Research Associate (40.0 hours/week) *Sep. 2018 - Sep. 2019*

- Analysis of transcriptomics through RNA-sequencing (single-cell and bulk), to understand potential genetic signatures involved with immunogenic host response to vaccination and infection.
- Developing bioinformatic pipelines on high-throughput NGS data (multiple platforms) from human clinical vaccine cohorts.
- Post-pipeline processing of NGS data, for use in other analysis pipelines (e.g. TCR-diversity, gene-enrichment, immune correlates, time-series).
- Use of UNIX/LINUX, Job submission and resource allocation on high-performance computing grids (SLURM).
- Scripting in R, bash and python to clean and obtain data; and prepare visualizations for manuscripts and publications.

Canon U.S. Life Sciences
Rockville, Maryland

Scientist (40.0 Hours/Week) *Aug. 2014 - Sep. 2018*

- R&D member in Class II medical prototype-device development team. Developed and trained wet-lab research experiments involving human biologicals, BSL-2 organisms. Developed PCR assays (Taqman) for human gene-targets.
- Biological Safety Officer, developed framework for BSL-2 laboratory work, including documentation system, training suite, compliance/reporting and building controls.
- FDA regulatory work: experimental design for device-development, preparing reporting for FDA 510k submission packets, built language and gained consensus with stakeholders for design-history file documents
- Promoted from Associate Scientist to Scientist, Jul. 2016.

Skills

Programming	R, Python, UNIX, LaTeX, SQL, MATLAB, Arduino/RaspberryPi
Bioinformatic focus areas	Single-cell transcriptomics, WGS SNP-variant analysis, Differential gene-expression, TCR-profiling
Machine-learning skills	NLP, Random Forest, Regression, Ensemble-methods, SHAP, LIME, Feature-engineering, Tensorflow, PyTorch
Lab skills	3D Bioprinting, Microcontrollers, Cell-tissue culture, Genetic engineering, Next-gen sequencing,
Computational Skills	AWS, Azure-Kubernetes, Jupyter, GCP, Git, Tableau, JIRA, Anaconda, RShiny
Communication	Proposal and Manuscript writing, White papers, FDA regulatory memos, Standard Operating Procedures

Education

George Mason University — *Fairfax, VA*

Master in Computational Biology and Bioinformatics — *Jun. 2017 - May. 2020 (Graduated)*

Minnesota State University - Mankato — *Mankato, MN*

Bachelors in Microbiology — *Jun. 2009 - Jul. 2014 (Graduated)*

- Minor in Chemistry

Publications & Projects

Biomimetic Gut Model Systems for Development of Targeted Microbial Solutions for Enhancing Warfighter Health and Performance — *mSystems Biology*

Contributing Author — *Oct. 2020*

A vaccine-induced gene expression signature correlates with protection against SIV and HIV in multiple trials — *Science Translational Medicine*

Bioinformatic contributor — *Aug. 2019*

T-blocker: a simple and robust probe-free quantitative PCR assay to detect somatic mutations down to 0.1% frequency — *BioTechniques*

Contributing Author — *Oct. 2018*

Modulatory Effect of TGFβ-1 Protein, Using Natural Language Processing (NLP) Software to Find Potential Therapeutic Targets for Chronic Fatigue Syndrome — *Virginia Academy of Science*

Poster Presentation — *Spr. 2018*

Extracurricular Activity

American Association for the Advancement of Science (AAAS) — *Washington, D.C.*

Scientist in the Classroom (1.0 Hour/Week) — *Sep. 2020 - Present*

An organization of science, technology, engineering and mathematics (STEM) professionals who volunteer in K-12 classrooms in 7 school districts in the Washington DC metro area.

COVID Work-study Group — *Washington, D.C.*

Back End Developer (10.0 Hours/Week) — *Mar. 2020 - Sep. 2020*

https://www.covidworkstudy.com/team | Our goal is to identify elements of the working environment and novel coronavirus-related safety protocols that are associated with higher or lower prevalence of COVID-19. This information will be made publicly available so that professionals and business owners can make informed decisions regarding workplace safety. All individual data and identifying information will be kept strictly confidential. We are collecting survey responses from each participant on an ongoing, weekly basis so that we can provide data visualizations and analyses that are timely and sensitive to changing conditions.

Memberships

International Society for Computational Biology — Member, Jan. 2019 – Present

Virginia Academy of Science — Member, May. 2018 – Present

Association for Women and Science — Member, May. 2017 – Present

American Society of Microbiology — Member, Jan. 2014 – Present