Anika Gupta

408.858.0485 | anikagupta@g.harvard.edu | linkedin.com/in/anika18 | gupta-anika.github.io

EDUCATION

Harvard University   2018 – 2023 (Expected)
Doctor of Philosophy, Bioinformatics and Integrative Genomics   Cambridge, MA

Massachusetts Institute of Technology   June 2018
Bachelor of Science, Computer Science and Molecular Biology   Cambridge, MA

RESEARCH EXPERIENCE

Stanford University, *Dennis Wall Lab*   June 2017 – June 2018
Autism Data Science Researcher   Palo Alto, CA
Implemented coalitional game theory and unsupervised machine learning techniques on 4,610 autism spectrum disorder genomes to map the genotype-phenotype bridge and enable a causative, molecular understanding for more precise treatments.

Broad Institute of Harvard and MIT, *Aviv Regev and Kasper Lage Labs*   Sep 2015 – June 2018
Statistical Genomics Researcher   Cambridge, MA
Detected cancer vulnerabilities through a robust statistical framework that capitalizes on the identification of protein interaction networks under purifying selection in 4,700 cancer genomes.

Foundation Medicine   May 2016 – May 2017
Cancer Genomics Researcher   Cambridge, MA
Characterized the therapeutically targetable gene alteration landscapes of lung cancers through analysis of >20,000 patient tumors to help make personalized medicine a reality.

Merck   May – Aug 2015
Bioinformatics Researcher   Palo Alto, CA
Analyzed gene expression and signaling pathway data for 416 genes to develop immunotherapy combination signature-predicting algorithms for synergistic therapeutic delivery against melanoma.

PROJECTS

Undiagnosed Diseases Network, *Bioinformatics Case Analysis Team*   Oct - Dec 2018
Standardized and automated (for variant classification) a proof of concept genomic analysis pipeline for the Brigham Genomic Medicine team's efforts to uncover the genetic causes of four previously intractable, rare patient disease cases.

Healthcare Innovation and Commercialization, *Pathology AI Team*   Sep - Nov 2018
Developed a business model to translate a new deep learning framework for pathology-based lung cancer diagnosis from academia to startup. Incorporated feedback from seasoned pathologists and pitched proposal to biotech venture capitalists.

Flagship Pioneering, *VentureLabs Innovation Intern*   Jan – May 2017
Built quantitative models to enable key strategic decisions that maximize value creation for Series A biotech companies being built within this Cambridge, MA-based innovation tank.

PUBLICATIONS

Sun M*, **Gupta A***, Varma M, Paskov K, Jung J, Stockham N, Wall D. Coalitional game theory facilitates identification of non-coding variants associated with autism. *Journal of Biomedical Informatics Insights* (Accepted).

Gupta A*, Sun M*, Paskov K, Stockham N, Jung J, Wall D (2017). Coalitional game theory as a promising approach to identify candidate autism genes. *Biocomputing 2018*. pp. 436-447 (https://doi.org/10.1142/9789813235533_0040).

Gupta A*, Horn H*, Razaz P, Kim A, Lawrence M, Getz G, Lage K (2017). Detecting cancer vulnerabilities through gene networks under purifying selection in 4,700 cancer genomes (https://www.biorxiv.org/content/early/2017/11/21/222687.1).

Gupta A, Connelly C, Frampton G, Chmielecki J, Ali S, Suh J, Schrock A, Ross J, Stephens P, Miller V (2017). The druggable mutation landscape of lung adenocarcinoma. *Journal of Thoracic Oncology*. Volume 12, Issue 1, S977.

CONFERENCE PRESENTATIONS

Gupta A, Horn H, Razaz P, Kim A, Lawrence M, Getz G, Lage K (2018). Detecting cancer vulnerabilities through gene networks under purifying selection. *American Society of Human Genetics Annual Meeting.* San Diego, CA.

Gupta A*, Sun M*, Paskov K, Stockham N, Jung J, Wall D (2018). Identifying candidate autism genes via coalitional game theory. *American Medical Informatics Association Informatics Summit.* San Francisco, CA.

Gupta A*, Sun M*, Paskov K, Stockham N, Jung J, Wall D (2018). Coalitional game theory as a promising approach to identify candidate autism genes. *23rd Annual Pacific Symposium on Biocomputing.* Big Island, HI.

Frampton G, Hartmaier R, Sokol E, **Gupta A**, Greenbow J, Roels S, Gay L, Stephens P (2018). Novel CDH1 mutations in breast invasive lobular carcinoma. *American Association for Cancer Research Annual Meeting.* Chicago, IL.

Gupta A, Chalmers Z, Connelly C, Frampton G, Chmielecki J, Ali S, Suh J, Schrock A, Ross J, Stephens P, Miller V (2016). The druggable mutation landscape of lung cancer. *IASLC 17th World Conference on Lung Cancer.* Vienna, Austria.

Gupta A, Horn H, Lawrence M, Getz G, Lage K (2015). Identifying and targeting gene networks under purifying selection. *11th Annual Broad Institute Symposium***.** Cambridge, MA.

AWARDS

Pacific Symposium on Biocomputing, National Library of Medicine/National Institutes of Health Travel Award	2017
Grace Hopper Conference for Women in Computing, Microsoft Scholarship Recipient	2016
Intel Science Talent Search Competition, National Semifinalist	2014
Siemens Competition in Math, Science, and Technology, National Semifinalist	2012

LEADERSHIP

Harvard Big Data Club, *VP of External Relations* 								Sep 2018 – Present
Coordinate events for students to explore and engage with industry data science opportunities including intensive two-day datathons, hands on data science workshops, company site visits, and speaker panels.

MIT Biotechnology Group, *Founder and Co-President* 							June 2015 – June 2017
Established the undergraduate chapter of MIT's first (now >1,000-member) biotech initiative as a liaison between students and the biotech industry. Organize pitch competitions, speaker panels, interactive workshops, mentorship programs, due diligence groups, and interactive symposiums to foster student entrepreneurship within the biotech industry.

Residential Associate Adviser, *to Professor Maria Zuber (MIT VP of Research)* 			Sep 2015 – June 2018
Mentored MIT freshmen as they navigate through their first year academic and personal pursuits at the institute.

SKILLS

Computer Science Languages: Python, R, Java, HTML, Unix/Linux, LaTex
Databases Familiar With Analyzing: The Cancer Genome Atlas, Human Protein Atlas, Project Achilles (cancer vulnerabilities), Genome Aggregation Consortium, Broad Mutation Signatures Database, ClinicalTrials.gov, genome-wide expression (RNA-seq) and genome-wide sequencing data (UK Biobank and proprietary)
Biochemical: Mutagenesis, Plasmid Preparation (Design, Synthesis, Purification), Primer Design, Polymer Chain Reaction, Gel Electrophoresis, MTT Cell Viability Assays, Spectroscopy (^{13}C- & ^{1}H-NMR, IR), Chromatography (Column, Paper, and Thin Layer), Flow Cytometry, Spectrophotometry, Protein Engineering via Directed Evolution, Western Blotting
Languages: English (native), Spanish (proficient), Hindi (fluent)