Anika Gupta

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EDUCATION

Harvard University — Expected Completion: 2023
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.

PUBLICATIONS

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*, 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.

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 AND INITIATIVE

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

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.

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.

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), Exome Aggregation Consortium, Broad Mutation Signatures Database, ClinicalTrials.gov, FDA Drugs, genome-wide expression microarray and mutation sequencing (DNA-Seq, RNA-Seq) data
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)