

# Nikhil Kumar

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## Education

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**Rutgers, The State University of New Jersey** Piscataway, NJ  
Master of Science in Biomedical Engineering May 2017  
Bachelor of Science in Biomedical Engineering, Minor: Computer Science May 2016  
Grad GPA: 3.9 / 4.0

- Engineering Honors Program, Dean's List (All Semesters)

## Skills

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**Programming:** Java, Shell, C, Python, R, Elixir, C#, Html, C++, JavaScript, CSS, LaTeX, Matlab, x86 Assembly  
**Environments:** Windows, Linux, Gimp, Git, Excel, Word, PowerPoint, Amazon Web Services, OpenCV, SolidWorks  
**Conferences:** AACR 2018, AACR 2019, Open Source Summit 2019, ISMB 2020

## Work Experience

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**Memorial Sloan Kettering Cancer Center** New York, NY  
Bioinformatics Engineer June 2017 - Present

- Developed a robust and portable pipeline for large scale genomic analysis using the Common Workflow language, Singularity containers, and the TOIL executor.
- Full-stack development of pipeline and metadata services using Django, PostgreSQL, Elixir, and Phoenix LiveView
- Dedicated to informative data visualization and contributing back to open source

**Harvard Medical School - Department of Biomedical Informatics** Cambridge, MA  
Summer Intern Summer 2016

- Developed an optimized algorithm for processing 2D genomic data that reduced processing time and storage space by 50% and 35% respectively.
- Used methods such as parallelization, vectorization, and run-length encoding

**Merck & Co., Inc.** Rahway, NJ  
Intern - Future Leaders Program Summer 2015

- Developed a scientific data platform using Python on Amazon Web Services with scalable and customizable components.
- Implemented a publication recommendation tool on the platform using machine learning and PubMed.

**Human Genetics Institute of New Jersey** Piscataway, NJ  
Computational Research Spring 2013 - Fall 2014

- Analyzed nucleosome stability on Chip-Seq data resulting in published work.
- Computed expression profile clustering on Rna-Seq data.

## Research

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**Computational Analysis of Gene Expression in Stem Cells** Piscataway, NJ  
Team Leader - Senior Design September 2015 - May 2016

- Lead and organized a team to conduct computational analysis on gene expression.
- Designed and tested algorithms to retrieve Chip-Seq differential expression.

## Publications

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- Chahar et al., (2014). Chromatin Profiling Reveals Regulatory Network Shifts and a Protective Role for HNF4 $\alpha$  during Colitis. *Molecular and cellular biology*, 17, 3291-3304.
- Kerpedjiev et al., (2018). HiGlass: web-based visual exploration and analysis of genome interaction maps. *Genome biology*, 19(1), 125.