

# Ryan Najac

New York, NY

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## Experience

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### Columbia University – Institute for Cancer Genetics

New York, NY

Senior Research Technician, Palomero Lab

September 2022 – Present

- Build automated workflows for multi-omic sequencing data analysis, enabling batch processing of up to 1,000 samples simultaneously to accelerate the discovery of clinically-relevant biomarkers in leukemia and lymphoma
- Design and implement flexible, high-performance cloud-based computational infrastructure for bioinformatic analyses, reducing computation time by 60% compared to on-premises solutions
- Develop a tiered data compression system using SAM-BAM-CRAM pipelines integrated with Amazon Web Services to optimize storage efficiency and reduce long-term archival costs of over 200 TB of sequencing data

### Hyannis Port Research (HPR)

Needham, MA

Software Engineer Intern

May 2023 – August 2023

- Implemented a low-latency parser for the Nasdaq TotalView-ITCH data feed using the C standard library
- Developed simulated data feeds and utilized profiling tools to validate parser functionality, optimize performance, and resolve memory leaks, resulting in improved error handling and elimination of bottlenecks
- Collaborated with network engineers to develop a custom TCP/IP protocol that can recover corrupted data packets

### Columbia University – Institute for Cancer Genetics

New York, NY

Research Technician, Iavarone/Lasorella Labs

May 2019 – August 2022

- Designed a standard operating procedure for single-nucleus sequencing of archival glioblastoma samples
- Performed sub-cranial tumor implantations in mouse models to evaluate the efficacy of novel therapeutic agents
- Created and validated a high-throughput batch analysis pipeline for fluorescence microscopy data

## Education

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### Columbia University

New York, NY

Bachelor of Arts, Computer Science

May 2024

- Relevant Coursework: *Operating Systems, Computer Networks, Data Structures and Algorithms, Software Design, Advanced Programming in the Linux Environment, Probability and Statistics*
- Notable Projects: C HTTP web server, Linux file system and scheduler implementations, C-like language compiler

## Technical Skills

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### Programming Languages:

- Proficient in C, C++, Python, VimL, and Linux shell script (sh, bash, POSIX)
- Some experience functional programming in Ocaml and object-oriented programming in Java
- Working knowledge of SQL database management and web development with HTML, CSS, JavaScript, and PHP

### Frameworks and Software:

- Cloud computing and data management using Amazon Web Services (AWS): EC2, S3, Batch, and Lambda
- Software testing and debugging with Unity, GoogleTest, pytest, GDB, Valgrind, and Wireshark
- Data analysis and visualization using R, pandas, ggplot2, and Matplotlib
- Technical documentation and scientific writing using Jupyter notebooks, Rmarkdown, and  $\LaTeX$

## Publications

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- “Integrative multi-omics networks identify PKC $\delta$  and DNA-PK as master kinases of glioblastoma subtypes and guide targeted cancer therapy.” Migliozi, S. et al. *Nature Cancer*, 4, 181–202, 2023. DOI
- “Pathway-based classification of glioblastoma uncovers a mitochondrial subtype with therapeutic vulnerabilities.” Garofano, L. et al. *Nature Cancer*, 2, 141–156, 2021. DOI