

# ROLAND YAN

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## EDUCATION

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**Mount Sinai, Icahn School of Medicine**, New York, NY  
Masters of Biomedical Sciences

August 2025 – Present

**New York University, Tandon School of Engineering**, New York, NY  
Bachelor of Science, Major in Biomolecular Science, Minor in Mathematics

May 2025

- **Activities:** Biomedical Engineering Society, Delta Epsilon Mu (Prehealth Fraternity). Pi Delta Psi Fraternity.
- **Relevant Coursework:** Tissue Engineering, Virology, Stem Cells & Development, Epigenetics, Genetic Engineering, Microbiology, Physiology & Anatomy, and Telerobotics & Surgical Robotics.

## PROFESSIONAL EXPERIENCE

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*Graduate Student Researcher, Castellano Laboratory, Mount Sinai*

September 2025 – Present

- Researching blood-borne youth associated factors in mice through parabiosis, microfluidics, perfusions, and structural experiments. Also studying TIMP2 and its microenvironmental impact on ECM and cell development.

*Student Researcher, William Laboratory, NYU Langone Neuropathology*

January 2024 – August 2025

- Researched Dyrk1a's impact on synaptic plasticity in Down Syndrome and Alzheimer's disease, its effect on excitatory and inhibitory neurons, pharmacological interventions, genomic experiments and rescue of function, and its phosphorylation of APP.
- Performed mouse husbandry & genetics, live spatial fluorescent brain imaging, floxed genes, brain slicing, in-situ hybridization, and molecular biology.

*Emergency Medical Technician, SeniorCare EMS*

March 2025 – Present

- ALS Operator doing ALS emergencies with paramedics, standard BLS emergencies and transport, and Strike shifts with only BLS emergency calls. Serves NYU Langone, NYP, Mount Sinai, Brookdale, and Northwell.

*ML/Vaccine Research Intern, Pfizer Inc. (SGE Program)*

June. 2022 – August 2024

- Research Intern in the Pfizer Summer Growth Experience Program for two summers, where I developed a neural network pipeline for protein generative AI. Utilized ProGen 1, ProtGPT, AlphaFold2, PyRosetta, and RITA LLM. Also generated Gene Databank system and automated bioinfo systems.
- Generated and verified protein mutation variants for Phi29 Polymerase, with higher thermostability/fitness landscape (pLDDT) using cell-free protein synthesis, NGS, purifications. Supported DNA purification, extraction, and cloning processes with centrifuge, RT-PCR, HPLC, co-immuno precipitations, & in-situ hybridization.

*BioRobotics Researcher, Rui Li Laboratory, NYU UGSRP & VIP*

Jan. 2023 – Nov. 2023

- Researcher in Soft BioRobotics/Biosensors Vertically Integrated Projects (VIP) team at NYU Tandon, where we developed soft- robotic prosthetics/pneumatic fingers in silicon for patients.
- Led team in NYU Undergraduate Summer Research Program (UGSRP) to develop artificial skin and muscles with electro/pressure sensitivity , thin & flexible biosensors from silicon embedded laser-etched graphite sheets.
- Developed low-cost, customizable 3D-printed prosthetics in NYU Biomedical Devices VIP Program, testing and improving tensioning systems and mobile arm supports for pediatric cerebral palsy patients at NYU Langone.

*Research Intern, Winawer Laboratory in Neurobiology, NYU Psychology, NY*

June. 2022 – Oct. 2023

- Helped train Machine-learning models for visual cortical mapping through contours of retinotopic graphs
- Utilized a Docker Virtual Machine to create Ventral and Dorsal (V1-V5) maps for Visual Cortices based on ultrahigh-field fMRI retinotopic maps of 181 adults.

**Research Fellowship, Carleton Laboratory, NSF REU @ Columbia University, NY** Sept. 2017 – May 2018

- Performed Ground Heat Exchanger research at the Carleton Laboratory at Columbia Engineering under Professor Huiming Yin's Research Group (NSF Grant)
- Developed, numerically modeled, and tested a novel bidirectional passive heat exchanger. Machined and tested a passive, thermally-driven pump system from CNC-milled and 3D-printed materials. Incorporated phase change materials, pressure propagation, and fluid- structure interactions.

**Student Researcher, Carleton Laboratory, ENGI 3900 @ Columbia University, NY** Sept. 2018 – August 2018

- NanoCrystal Technology Research: MnOx-CeO<sub>2</sub> nanocrystals to filtrate carcinogens and toxins like Aldehydes found in E-Cigs/Vaporizers under Professor Chillrud at the Geochemical Department.
- N95 Mask Reuse Research: 20k+ reads/downloads. Worked with International Rescue Committee to develop disinfection systems for 90k refugees in Thailand.
- Passive Solar Tracker: Designed and built a passive solar tracking system for higher efficiency solar- guided photovoltaic panels within the ENGI 3900 Undergraduate Research Program with Professor Huiming Yin in the Carleton Laboratory.

## CLINICALS/VOLUNTEERING

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**Clinical, ACT Case Manager, Mount Sinai EHHOP** August 2025 – Present

- EHHOP is the Attending-directed, student run PCP free clinic for patients in the upper east side who lack any health insurance.
- ACT Case Managers handle individual patient cases, running logistics behind healthcare visits, and individually meeting with patients coming in to communicate healthcare needs, medical concerns to highlight during checkups, and provide social resources such as free transportation, financial support, legal support, and food security for families struggling without insurance.

**Clinical, CARE ED Volunteer, Mount Sinai Hospital ED** August 2025 – Present

- Volunteering in the Mount Sinai Main Hospital Emergency Department, providing supportive materials, sitting with, and sharing care packages for the patients in the Emergency Room.

**Clinical Shadowing, NYU Langone Health Neuropathology** Jan. 2024 – Present

- Shadowed the Neuropathology Dr. Christopher William on the day to day clinical operations, brain smears, staining, journal clubs, tumor board, and anatomical case studies.
- Observed many surgical cases, from tuberculosis to multiple sclerosis patients, and the diagnostic reasoning process and diagnostic surgical support.

**Volunteer, Camps For The Blind** June 2022 – August 2024

- Volunteered at the VISIONS/Services for the Blind and Visually Impaired Camp for both summers with Pfizer SGE interns, where we cleaned the cabins, repainted the interior and exterior, rearranged new bedding and mattresses, mopped, put together new furniture, and interacted with the camp's leadership and members.

**Volunteer, Heart of Dinner, Bowery Mission, Walk to End Alzheimer's** April 2022 – Present

- As a member and previous President of Pi Delta Psi, we volunteered at Heart of Dinner, where we designed hundreds of custom food bags for the elderly and isolated asian community members. We have volunteered to serve food at the Bowery Mission for the homeless, attending the NYC Walk to End Alzheimer's each year, and raised multiple fundraisers for Cooperative for Assistance and Relief Everywhere (CARE) and It's On Us, and consistently volunteered at East River Park Cleanup.

## CONFERENCES

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International Symposium on Functionally Graded Materials 2022

- 2nd Best Presentation Award ([link](#))

N95 Reusable Mask Publications (2020) (1,& 2)