

Zeran Ni (Simon)

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Education

New York University, Center For Data Science, College of Arts and Science *Sep 2023 – May 2027*

Major: **Computer Science and Data Science**

GPA: 3.91/4.0

Relevant Courses: Data Structures and Algorithms, Fundamentals of Machine Learning, Software Engineering

Experience

Research Intern

New York, NY

RiskEcon® Lab, Courant Institute of Mathematical Sciences

Dec 2025 – Present

- Performed exploratory data analysis on ERCOT electricity load, pricing, and weather data, and conducted hypothesis testing to validate observed patterns in load and price behavior under temperature extremes.
- Investigated risks to electricity grid stability from extreme weather events using observational data and statistical analysis.

Class Tutor and Grader

New York, NY

Department of Computer Science, New York University

Jan 2024 – Dec 2025

- Led **3** hours of in-class tutoring and **7** hours of office hours each week, supporting **200+** students with Python programming (control flow, OOP, File I/O, and data structures) and assignments debugging.
- Reported common student challenges to the instructor and assisted in improving assignment design.
- Graded **11** programming assignments for **~180** students, delivering detailed and constructive feedback.

Projects

AI-Assisted Autograder for Introductory CS Course at NYU

[GitHub Repository](#) 

- Designed an AI-powered autograder evaluating 11 programming assignments for 180+ students, reducing grading time by over 60% by integrating OpenAI GPT models via LangChain to assess code quality, formatting standards, and programming style beyond traditional unit tests.
- Engineered dynamic testing pipeline using `subprocess` for code execution, `re` for output validation, and custom parsers to extract numerical values from formatted tables, with adaptive input handling that automatically feeds test cases and flags edge cases requiring human review.
- Overcame Gradescope's function-call dependency limitations and assess early assignments before students learned advanced programming concepts.
- Technologies Used: Python, OpenAI API, LangChain, Bash, Regular Expression, Git, VS Code.

NGrams – (Based on UC Berkeley CS61B: Data Structures)

[GitHub Repository](#) 

- Designed and implemented efficient data structures in Java (`HashMap`, `TreeMap`) to store and query millions of n-gram records, enabling fast retrieval of frequency counts across specified time ranges.
- Built methods to generate temporal trends and compute aggregate statistics, supporting queries on multiple words simultaneously.
- Technologies Used: Java, `HashMap`, `TreeMap`, `JUnit` (unit testing), Git, IntelliJ.

Data Science Capstone: Professor Rating Analysis

[GitHub Repository](#) 

- Quantified gender bias in evaluations by hypothesis testing on a processed RateMyProfessor dataset.
- Achieved ~0.80 prediction accuracy by developing linear, Ridge, and logistic regression models, utilizing Principal Component Analysis (PCA) to reduce dimensionality and enhance feature interpretability.
- Delivered insights through clear visualizations and performance reports using Matplotlib and Scikit-learn.
- Technologies Used: Python, NumPy, Pandas, SciPy, Scikit-learn, Matplotlib.

Technologies

Core Languages: Java, Python, JavaScript (ES6+), C, SQL, HTML5/CSS3

Libraries: NumPy, Pandas, PyTorch, Scikit-learn, SciPy, LangChain, Flask

Tools & Platforms: Git, Github, VS Code, Antigravity, Spyder, Jupyter Notebook, IntelliJ IDEA, MicroSoft Word, Powerpoint, Excel, Overleaf