

# Jefferson Xu

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## EDUCATION

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**Northwestern University** | Bachelor of Arts in Computer Science and Minor in Economics Expected June. 2023

- GPA: 4.0/4.0
- Relevant Courses: Data Structures & Algorithms, Linear Algebra, and Multivariable Integral Calculus
- Awards: Capital One Software Engineering Summit Participant (1/60 chosen from 500 applicants)

## EXPERIENCE

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**Undergraduate Research Assistant** April. 2020 - Present

System Software & Security Lab at Rutgers University | New Brunswick, NJ

- Researched the usage of the Vapnik–Chervonenkis (VC) dimension as a proper metric for testing Neural Networks
- Conceptualized, trained, and tested my own experiments and models in PyTorch using the CIFAR10 dataset
- Generated polynomial regression tests on data collected with NumPy, uncovering a new correlation between a model's accuracy and its VC bound
- Effectively presented my results to Ph.D. students and research professors over a virtual conference and weekly meetings

**Web Development Intern** Jun. 2018 - May. 2019

BlackLapel | New York, NY

- Implemented a universal content management system and an XML sitemap generator to improve company's SEO
- Streamlined unit and integration tests using Selenium WebDriver and Node.js to allow for test automation
- Refactored API endpoints in PHP and wrote Neo4j queries to be compatible with REST API, maintaining legacy code
- Reconfigured the main page to be ADA compliant using Ember.js and developed microservices using Docker containers
- Improved readability of dashboard through UI upgrades and new tools for the team to view sales more effectively

## PROJECTS

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**Biological Network Visualization** Sep. 2018 - Jun. 2019

Icahn School of Medicine at Mount Sinai | New York, NY

- Developed tools for my capstone groups' mentors Dr. Selim Kalayci and Dr. Zeynep Gümüş to better analyze biomolecular data
- Utilized the Three.js library to add more 3D features like arrowheads, shapes, and the ability to toggle visibility attribute
- Changed network structure to graph to improve efficiency and runtime when searching for unique node
- Incorporated submodules to allow multiple node hierarchies be parsed, adding more depth to the data
- Gained knowledge in the field of computational biology and how to work with specialized researchers

**SeniorMania** - <https://seniormaniaman.fun/> Oct. 2018 - Dec. 2018

Bergen County Academics | Hackensack, NJ

- Senior Mania is a list of challenges for each senior class where groups compete with one another to see who can complete the most challenges
- Created a web application to efficiently keep score of each team's points and various challenges they have completed throughout the year
- Gained experience with responsive-design as well as using Firebase as a backend to host user and admin data
- Had 16 teams registered with over 150 students participating, highest number of students in school history

## SKILLS

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Languages: Java | Python | Javascript | HTML | CSS

Technologies: Git | Firebase | MySQL | Node.JS | jQuery