Natalie Rie Cheng

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EDUCATION

Northwestern University   *Evanston, IL*

Bachelor of Science in Computer Science (concentration in Artificial Intelligence)   **Expected Graduation: June 2026**

Second Major in Classics, Certificate in Human-Computer Interaction   *GPA: 3.66/4.0*

- ***Coursework:*** Data Structures & Algorithms, Operating Systems, Discrete Math, Game Design Studio
- ***Awards:*** Northwestern Dean's List High Honors (Spring '23, '24, Winter '24), Cum Laude Society ('21)
- ***Certs|Orgs:*** Electronic Arts Software Engineering Virtual Forage Program ('24), JYC Girls Impact Foundation Girls4Girls Coding Counselor ('21) | Women in Computing, Society of Women Engineers

SKILLS

Programming Languages: C#, Java, C/C++, Python, HTML, Javascript, CSS, MatLab, Racket, DSSL2

Tools & Libraries: Unity, Unreal, React.js, Node.js, Git, scikit-learn, NumPy, Matplotlib, Figma, Lucidchart

PROFESSIONAL EXPERIENCE

Northwestern Computer Science Department   *Evanston, IL*

Research Assistant – MUCollective Lab (Human-AI & Data Visualization Project)   Sep. 2024 – Present

- Develop an interactive, **LLM-based tool** for creating customizable and scalable data visualizations, synthesizing human input and AI-driven item generation to ensure high-quality outcomes.
- Create design abstractions to improve tool scalability and evaluation efficiency in data visualization education.

Teaching Assistant – Game Design & Development   Sep. 2024 – Present

- Host 5+ office hours weekly offering personalized feedback and guidance to improve student performance.
- Supervise classroom activities and grade exams and homework for **200+ college students**.

Technological Innovations for Inclusive Learning & Teaching Lab   *Evanston, IL*

Front-End Developer – MusicNU Project   April 2023 – Sep. 2024

- Deployed a website using React.js and Node.js to teach music theory to **100+ high schoolers** in Chicago.
- Engineered an algorithm to extract rhythmic and melodic song patterns with **95% accuracy in real-time analysis**.

Software Developer – Gesturecraft Project   Sep. 2023 – June 2024

- Constructed a controller system of **15+ customizable hand gestures** to adaptively play Minecraft.
- Trained a machine learning system with Google MediaPipe to identify and classify different hand gestures.
- Spearheaded the transfer from a local-based Python script to a browser-based Javascript application.

Fulcrum Global Technologies   *Chicago, IL*

Software Development Intern   June 2023 – Aug. 2023

- Led the development of a proprietary AI-based data extraction tool for workflow automation in the legal industry by designing and creating **100+ application page wireframes**.
- Built **20+ functional webpage prototypes** to demonstrate product potential for work optimization.
- Facilitated the integration of a data extraction product to construct a B2C marketplace while working in an Agile environment as the primary liaison between two project leads.

TECHNICAL PROJECTS

The Chronicles of Dido | *Unity, C# | Feldmann Fellowship, Summer Undergraduate Research Grant*   June 2024

- Utilized two research awards (**totaling $6500**) to study the character Dido from the Aeneid.
- Conducted 8 weeks of independent research, producing an original **11-page game design document**.

SongSpot Generator | *Python, Flask, Amazon Web Services*   May 2024

- Designed a web app deployed on AWS EC2, integrating Spotify API and RDS to analyze user music preferences and generate personalized recommendations and playlists with secure OAuth authentication.
- Implemented **5+ unique music analysis features**, enhancing music discovery and user engagement.