

# Hanyi Xu

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## Research Interest

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My research examines how interactive media shape users' stress, motivation, and well-being. I study when enjoyable experiences become demanding and how design can support both engagement and restoration. My master's thesis applies the Interactivity-as-Demand framework and builds skills in experimental design, computational modeling, and large-scale text analysis. I aim to expand this work in my doctoral studies.

## Education

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<b>Columbia University</b> , M.A. in Quantitative Methods in the Social Sciences	August 2024 – Dec 2025
- GPA: 3.92/4.00	
- Masters Thesis: "Why Games Stop Feeling Fun: A Computational Approach to Emotional Demand in Play"; Thesis Advisor: Dr. Gregory Kossinets; DOI: 10.7916/3mm4-3482	
- Coursework: Machine Learning in Social Science, Data Analysis, Data Visualization, Quantitative Research Theory in Social Science	
<b>Syracuse University</b> , B.S. in Advertising	August 2020 – May 2024
- GPA: 3.45/4.00, Cum Laude	
- Coursework: Media Planning, Digital Social Media, Communications Theory, Advertising Capstone	

## Research Experience

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<b>Research Assistant</b> , Language and Cognitive Neuroscience Lab Columbia University – New York, NY	May 2025 – Present
- Principal Investigator: Dr. Peter Gordon - Used Python and MNE to automate sLORETA EEG analysis for 24 subjects across 30 conditions, enabling real-time 3D brain visualization and temporal peak detection. - Built a configurable pipeline supporting multiple cognitive tasks (e.g., direction, size, cardinality). - Participated in EEG and eye-tracking equipment training and operation - Engaged in a journal reading group to exchange ideas and stay current with research developments	
<b>Research Assistant</b> , Cognitive Media Lab UCSD/Columbia University – New York, NY	October 2024 – Present
- Principal Investigator: Dr. Michael Haupt - Contributed to survey design and implementation, including programming and data collection - Conducted statistical analyses using Python and SPSS, including multiple regression models and group comparisons - Analyzed relationships between race, income, education, age, and geography in relation to barriers to birth control and abortion access - Authored and revised the analysis section of a manuscript prepared for publication	
<b>Research Assistant</b> , Meaningful Math Research Group	April 2023 – May 2024

Syracuse University – Syracuse, NY

- Principal Investigator: Dr. Nicole Fonger
- Investigated the impact of social justice themes on critical thinking, identity, and academic engagement in undergraduate precalculus students
- Employed mixed methods, including interviews and surveys, with data from 58 students at a predominantly white institution
- Assisted The Data Warriors, a youth-focused community research program, by helping organize events and supporting students during activities.
- Conducted thematic analysis, contributed to academic manuscripts, and presented findings at conferences including the SOURCE Fall Research Expo, the D.E.I.A. Symposium, the 18th ACC Meeting of Minds, and PME-NA 2024.

**Research Assistant**, The Sharpe Lab

February 2022 – May 2022

Syracuse University – Syracuse, NY

- Principal Investigator: Dr. Charlotte Sharpe
- Trained in qualitative research methods and ethics for studying high school students' attitudes toward teaching
- Conducted on-site interviews and facilitated focus groups at a local high school
- Collaboratively analyzed qualitative data and identified key themes
- Contributed to research discussions and final analysis synthesis

## Manuscript

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- [1] *Xu, H.* (2025, December). Demand overload: How game mechanics trigger stress and reduce enjoyment. Poster submitted for presentation at the 2026 APS Annual Convention, Barcelona, Spain.
- [2] Rhee, V., Chen, Z., Gushiken, Y., Bakhru, K., *Xu, H.*, Bisbee, N., Li, Y., Tang, J. E., & Gordon, P. (2025, September). Electrophysiological and behavioral indices of numerical perception and cognition. Poster submitted for presentation at the 2026 Annual Meeting of the Cognitive Neuroscience Society, Vancouver, Canada.
- [3] *Xu, H.*, Raja, W., Boutros, E., Wu, Q., & Fonger, N. L. (2024, November). *Emotions in social justice mathematics: Students' experience from a college precalculus classroom*. Paper presented at the 46th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Cleveland, OH.
- [4] Boutros, E., Wu, Q., *Xu, H.*, & Fonger, N. L. (2023, August). *Making mathematics meaningful: How learning about local social injustices develops undergraduate students' identity, intellect, skill, and criticality*. *The Crown: Syracuse Undergraduate Research Journal*, 1, Article 16.

## Presentation

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- [1] *Xu, H.* (2024, April). *Making mathematics meaningful: A mixed-methods study of undergraduate students' learning through social justice*. Paper presented at the 18th Annual ACC Meeting of the Minds Conference, South Bend, IN.
- [2] Boutros, E., Fonger, N. L., Wu, Q., *Xu, H.* (2023, December). *Making mathematics meaningful: How learning about local social injustices develops undergraduate students' identity, intellect, skill, and criticality*. Paper presented at the SOURCE Fall Research Expo, Syracuse University.
- [3] Boutros, E., Fonger, N. L., Wu, Q., *Xu, H.* (2023, October). *Enhancing students' inclusion and belonging by developing meaningful mathematics literacy in the place we now call home*. Paper presented at the D.E.I.A. Symposium, Syracuse University.

- [4] Boutros, E., Fonger, N. L., Wu, Q., Xu, H. (2023, August). *Making mathematics meaningful: How learning about local injustices develops undergraduate students' criticality, identities, intellect, skill, and emotion*. Poster session presented at the SOURCE Symposium, Syracuse University.

## Teaching Assistantship

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**Natural Language Processing Social Sciences, Columbia University (QMSS GR5067):** Spring 2025, Summer 2025, Fall 2025

**First Year Seminar, Syracuse University (FYS 101):** Fall 2022, Fall 2023

**AEW for Calculus II, Syracuse University (ECS 116):** Fall 2021

## Professional Experience

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**Account Executive Intern, BlueFocus – Shanghai, China**

June 2024 – August 2024

- Supported the Sony Camera Line Promotion Campaign by assisting the Project Manager in implementing plans, coordinating workflows, and managing timelines across RED (Xiaohongshu) and Bilibili platforms
- Facilitated internal communication by summarizing and relaying client feedback, accelerating article production, and monitoring campaign traffic
- Analyzed July market share performance of Sony's new release using Power BI to inform strategic adjustments
- Handled internal project procedures, including initiation, finalization, and contract documentation

**Marketing and Media Intern, Boathouse Group Inc – Waltham, MA**

June 2023 – August 2023

- Led media optimization analysis within a five-person team for the Story District Promotion Campaign
- Collected and analyzed data from social media platforms, websites, and competitor reports to assess campaign effectiveness
- Developed a comprehensive content calendar and designed performance KPIs
- Produced a media plan selected by the client over competing proposals
- Delivered data-driven recommendations to enhance public relations strategy and fostered collaboration through Hub project management tools

**Associate Producer, Orange Television Network – Syracuse, NY**

March 2023 – May 2024

- Served as Associate Producer and Director of Photography for the TV program *Psych vs. Star*, responsible for visual storytelling design, crew training, on-set direction, and post-production editing.
- Oversaw post-production and quality control, including title sequence design, visual packaging review, and final cut supervision; developed and managed overall production schedules.
- Participated in the filming of *Loud and Clear* as a one-person crew, handling both camera operation and production logistics.

## Project

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**Cloudburst Prediction Model (A class project with Alt Surya)**

October 2024 – Present

New York, NY

- Collaborated with a multidisciplinary team to develop a prototype predictive software system aimed at providing early warnings for cloudbursts in urban areas, enhancing disaster preparedness for residents and businesses.
- Utilized Python to analyze diverse datasets, including satellite imagery, weather sensor readings, and historical rainfall records, to identify patterns indicative of imminent cloudburst events.
- Implemented ensemble machine learning models, such as Random Forest and Gradient Boosting

Decision Trees, to predict the frequency and intensity of cloudbursts within a 6-hour window.

- Employed Python visualization packages (Plotly, Plotnine/GGPlot2) to create interactive visualizations, communicating complex meteorological data and model predictions to stakeholders.
- Coordinated project timelines and deliverables using GitHub, ensuring seamless collaboration among team members.

#### **Undergraduate Capstone Project: CARE Advertising Campaign**

January 2024 – May 2024

Syracuse University – Syracuse, NY

- Collaborated as a media planner on a comprehensive advertising campaign for the French charity brand CARE.
- Conducted in-depth communication with CARE employees to analyze the brand's current market position, competitors, and industry trends, providing a solid data foundation for strategic planning.
- Utilized the Nielsen Commspoint database and market analysis tools to design an 8-week media placement plan and corresponding KPIs for CARE.
- Used Photoshop to redesign CARE's social media strategy and create multiple post templates.
- Drafted the final creative proposal and brand strategy, presented to the client, and oversaw the full process of campaign planning, production, execution, and evaluation to ensure project efficiency and success.

## **Technologies**

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**Programming & Data Tools:** Python, R, HTML, GitHub, MAXQDA

**Marketing & Analytics Platforms:** GWI, MRI Simmons, Nielsen Commspoint

**Productivity & Office Tools:** Microsoft Excel (certified in 2022), PowerPoint, Word; Apple Pages, Numbers, and Keynote; Google Workspace; Miro

**Design & Media Tools:** Adobe Photoshop, Premiere Pro, Canva

**Computer Systems:** Experienced user of Macintosh and Windows operating systems, with working knowledge of Linux and command-line interface (CLI) operations

## **Licenses & Certifications**

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**Human Subjects Protection SBR, CITI Program**

Aug 2025 – Aug 2028

*Credential ID: 71361914*

**FDA-Regulated Research, CITI Program**

Aug 2025

*Credential ID: 71361915*

**Research With Minors SBR, CITI Program**

Aug 2025

*Credential ID: 71361916*

**Microsoft Office Specialist: Excel 2019 Associate, Microsoft**

Nov 2022

*Credential ID: n28K-Dwo5*

## **Language**

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**Chinese (Mandarin):** Native

**English:** Fluent