

Ricky (Xinrui) Qiu

Space & Aerospace | Scientific Computing | AI & Machine Learning
217-979-2982 | 3065293716q@gmail.com | [LinkedIn](#) | [Profolio](#)

EDUCATION:

Rice University

Professional Science Master's (PSM) in Space Studies

Expected 08/2026 - 12/2027

Relevant Coursework: Machine Learning, Project Management, Engineering Economy.

University of Illinois at Urbana-Champaign

B.S. in Astrophysics (GPA: 3.66/4.00)

08/2023 - 05/2026

Honor: Dean's List (2025 Spring)

Relevant Coursework: Scientific Computing, Numerical Modeling, Linear Algebra, Astronomical Data Analysis

PROFESSIONAL EXPERIENCE

VNET Group

AI Engineering Program Trainee

Beijing, China | 05/2026 – 08/2026

- **Built an AI operations and project-collaboration prototype in Frappe** for a 2,000+ employee enterprise, implementing 3 modules, 11 DocTypes, and 27 API methods for requests, meetings, tasks, project progress, and audit trails.
- Integrated an OpenAI-compatible LLM client with rule-based fallback and human review; added duplicate screening across 3 text fields and row-level access controls for 5 document types.
- **Deployed a 4-container RAG prototype with Docker Compose** and indexed 15 sample documents across 7 knowledge bases. On 14 queries over 3 PDFs (407 chunks), hybrid retrieval achieved an 85.7% top-3 document hit rate versus 78.6% for keyword search.

National Astronomical Observatories, Chinese Academy of Sciences (NAOC)

Undergraduate Researcher

Beijing, China | 05/2025 – 08/2025

- Analyzed LMC X-3 observations from NuSTAR, NICER, and Swift using XSPEC and the kerrbb2 continuum-fitting model to constrain black hole spin and inclination.
- Built XSPEC fable models and performed error analysis across luminosity selections and accretion states, examining spin–luminosity correlations; preparing a first-author manuscript to *The Astrophysical Journal*.

PROJECTS

Orbit Job Search Platform | TypeScript, React, Cloudflare D1 | 08/2026 – 09/2026

- Built a job-search tracker with 230 U.S. and China opportunity records, 6 application states, and 3 business tables, implementing authenticated CRUD operations, user-scoped records, and a daily goal-completion calendar.

Data Science & Computational Engineering | 05/2026 – 08/2026

Analyzed Falcon 9 and EuroSAT datasets using statistical and machine-learning workflows.

Applied regression, SVM, clustering, PCA, CNNs, and Transformers.

ALMA Polarization Data Analysis | 01/2026 – 05/2026

Analyzed ALMA polarization data through calibration review, signal extraction, and imaging workflows.

Evaluated parameter sensitivity and compared results with prior studies.

Photometric Redshift Estimation | 01/2025 – 05/2025

Built a modeling workflow to estimate photometric redshift from galaxy data.

Applied feature engineering, least-squares fitting, cross-validation, and error analysis.

TECHNICAL SKILLS & AWARDS

Awards: Second Prize, Xiaosu Technology Global Hackathon (2026), Physics Bowl Regional Award (2022)

Programming: Python, Java, Pandas, NumPy, Astropy, Matplotlib, Linux, HEASoft, XSPEC, CASA, CARTA

AI: Statistical Analysis, OpenAI API, Codex, Claude, Prompt Engineering, API Integration, AI Workflow, RAG

Language: Mandarin Chinese (Native), English (TOEFL 105), Cantonese (Intermediate), Japanese (Basic)