Naysha Jain

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PROFILE

Driven Computer Science and Physics-Astronomy major with hands-on experience in artificial intelligence, scientific computing, machine learning, and software development. Proficient in Python, CUDA, PyTorch, and Ray Tune for model optimization, with skills in algorithm development, data structures, and cloud computing for complex problem-solving.Eager to contribute to innovative research in AI technologies while leveraging my background in physics and astronomy

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EDUCATION

Bachelor of Science, Computer Science and Physics GPA 3.94/4.00 **June 2026**

Knox College, Galesburg, IL

Main Coursework: Data Structures and Algorithms, Software Engineering, Algorithms and Designs, Quantum Mechanics, Stellar Astrophysics, Modern Physics +, Introductory CS +, Calculus III, Discrete Mathematics, Linear Algebra

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RESEARCH EXPERIENCE

Exospore **June 2024 - present**

SETI (AI/ML)

- Optimizing deep learning models (CNNs) with Detectron2 for bacterial spore classification in SEM images, achieving 94% precision-recall.
- Implementing large-scale parallelization & hyperparameter tuning using Ray Tune on NVIDIA GPUs in Google Cloud Platform

Magnetic Cataclysmic Variables - MACRO **June 2025 - July 2025**

- Conducting first-ever simultaneous multiwavelength observations of LX Ser via VLA (radio), Winer Observatory (optical), and Chandra (X-ray)
- Analyzing 4+ hours of coordinated data to study LX Ser's pulsing variability and accretion behavior across spectral bands
- Investigating magnetic field effects and emission correlations to better characterize system geometry and variability mechanisms

Research - Spectroscopic Study of Galaxies **August 2023 - June 2024**

Knox College

- Analyzed astronomical data from H-alpha galaxies using Python, employing algorithms for feature extraction and property estimation (e.g., star formation rate, chemical abundances and gas temperature)

Research - Eclipsing Binaries: Insights Into Stellar Properties **April 2024 - June 2024**

MACRO Consortium

- Studied Algol-type binary system 'V1024 Her' by collecting 5 nights of RLMT telescope data; co-led analysis and presented findings at the American Astronomical Society (AAS) Conference as part of a multi-institutional research team.

'Project Scientist' for BALANCE **July 2023**

Edge of Space Academy, University of Iowa

- Launched a high-altitude balloon to 110,000 ft to measure cosmic ray variation using Arduino and Geiger counters in 3D-printed payload
- Coded C++, Java, and Python scripts to collect and analyze 50,000+ gamma-ray counts across 3 filtered energy bands
- Presented results on altitude vs. radiation trends at Midstates and University of Iowa undergraduate research conferences

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COMPUTER SCIENCE EXPERIENCE AND PROJECTS

Simon Signs - Sign Language Game App (in Development)

- Designed and built a Godot-based memory reinforcing game to teach sign language, tested by 50+ users with 95% positive usability feedback.
- Currently expanding into Flutter app at 1871, Chicago

Gradence **June 2025 - July 2025**

Global Summer Challenge, Meeedly

- Participated in the Global Summer Challenge, a prestigious 3-week program organized by Meeedly, focused on creativity, productivity, and skill demonstration.
- Worked in a team of 6 to develop Gradence, a course grader and feedback web app helping you choose college courses smarter, not harder!

Web Developer **June 2024 – September 2024**

Virufy

- Collaborated with a team to develop the Virufy 6.0 website using TypeScript and Node.js, with deployment on Netlify
- Improved overall Page performance and achieved 95/100 scores on PageInsights
- Performed QA testing and collaborated within Agile frameworks, utilizing tools like JIRA, Figma, and GitHub

Match Up - Uncommon Hacks

- Built a full-stack matchmaking web app in React.js, Gatsby, and MongoDB matching users based on their gaming skills, onboarding 200+ users during Uncommon Hacks at UChicago
- Integrated Auth0 authentication and responsive UI/UX to support real-time matches based on gameplay skill metrics

CS 332 Software Engineering Project

- Developed a Python-based backend using pandas to automate analysis of **1000+ chemical reactions**, optimizing fault detection workflow.
- Achieved **30% improvement** in data processing speed and error flagging accuracy across test datasets by streamlining pipeline architecture

Machine Learning For Music Genre Analysis

- Built classifiers on 10+ genres using SVM, KNN, Random Forest, and Decision Trees with 70–78% accuracy across Kaggle and custom audio datasets
- Engineered custom feature extraction (tempo, MFCC, chord progression) to improve model generalization on noisy real-world tracks

Personal Portfolio

- Built a terminal style personal platform to share about my work and experiences
- Implementing using React.js, Node.js and Tailwind CSS, deploying on GitHub pages and expanding the scope to personal blog

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ADDITIONAL EXPERIENCE

Social Media Assistant **2022 – present**
Knox College

- Content creator for all Knox social media accounts including Facebook, Instagram, LinkedIn, and Twitter, as well as publishing dashboards
- Strategize campaign ideas and determine a campaign's level of success, using analytics tools which boosted engagement and user-relations by 55%

Physics Tutor **2023 – present**
Knox College

- Working with the Centre for Teaching and Learning to help students on campus with Physics related concepts

International Ambassador and Orientation Leader **2022 – present**
Knox College

- Creating programs to support fellow students and assist them to adapt in the new surroundings
- Conduct International Pre-orientation program and New Student Orientation for incoming freshman

Founder **2020 - present**
SPAACEWALK

- Designing a website with an intention to create a virtual network of people with same passion and different ideas to come together, discuss, ideate and research on topics related to astronomy while providing accessible resources to young space enthusiasts in underserved regions
- Created an educational instagram page to spread knowledge via social media (Instagram)
- Organized in-person workshops and events like star-gazing nights to promote astronomy in the local community

Research - Diversity In The Workplace Through A Photojournalistic Lens December 2023
Knox College

- Conducted a one-on-one ethnographic interview and **captured 80+ field images** to examine diversity in an immigrant-owned bakery
- Transcribed and thematically coded interview + visual data to identify challenges in demographic and abstract workplace inclusion
- Co-authored and presented findings at **HORIZONS Undergraduate Research Symposium**, Galesburg, IL

PROFESSIONAL DEVELOPMENT

CodePath iOS 110 cohort
Build Stage Startup Fellow at 1871 incubator
Asteroid Search Collaborator **2021**
President of Physics and Astronomy Club at Knox College **2023 - present**
Co-President of Aaina (South Asian Club) at Knox College **2024**
Choreographer, Treasurer of the Terpsichore Dance Collective Repertoire at Knox College **2022 - present**

SKILLS

Languages & Frameworks: Java, Python, JavaScript, TypeScript, C++, SQL, C#, Bash, GDScript, React.js, Node.js, Kotlin

Tools & Platforms: Git, GitHub, VS Code, Eclipse, MongoDB, AWS, Google Cloud Platform, NVIDIA GPUs
Machine Learning & Data: PyTorch, scikit-learn, Ray Tune, NumPy, pandas, CUDA
Development Practices: Agile (Scrum), DevOps, SDLC, REST APIs, Software Testing, Product Management, SaaS
Collaboration & Design: JIRA, Figma, Canva
Core Strengths: Problem-Solving, Communication, Leadership, Analytical Thinking, Adaptability, Learning New Technologies
Hobbies: Kathak, Creating Mandalas, Movie Buff, Redesigning Everything, Foodie

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PUBLICATIONS

Jain, Naysha, 'What a Comeback!' , *Vivid*, Manav Rachna Publishing House
The story highlights the prevailing gender discrimination in our society and is an effort to sensitize the young generation about this crucial topic. I initiated the project in the 5th grade (the youngest author in the cohort of other short story authors in Vivid), and after two years of dedicated work, the book was successfully published during a significant institution's publishing event.

ACHIEVEMENTS

Donald L. Benedict Student Research Award (Physics/Mathematics) at Knox College **2022**
Bronze Honor in International Astronomy and Astrophysics Competition **2022**
Top 6 pitch decks - The Start-Up School, IncubateIND, Satakunta University of Applied Sciences
Hydro Rocket Launching Competitions, INNOSKILL, TechnoXian