Jill P. Naiman

Teaching Assistant Professor

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Education

Sept 2007 – May 2014 | **Astronomy & Astrophysics, University of California, Santa Cruz, CA**
M.S., Ph.D.

Sept 2006 - Sept 2007 | **Physics Masters Student, University of California, Santa Cruz, CA**

Sept 2002 - June 2005 | **Astronomy & Astrophysics, University of Los Angeles, CA**
B.S.

Sept 2000 - May 2002 | **Independent Studies, Foothill Community College**
A.A.

Work Experience

Jan 2026 - present | **School of Information Sciences, University of Illinois Urbana-Champaign**
Assistant Professor
- Research: Data-centric AI, science-of-science, digitization for historical knowledge findability
- Mentoring: over 25 undergraduate and graduate students
- Courses taught: IS445 (Data Visualization), IS457 (Data Storytelling)

Aug 2020 - Dec 2025 | **School of Information Sciences, University of Illinois Urbana-Champaign**
Teaching Assistant Professor
- Courses taught: IS452 (Intro to programming), IS542/IS507 (Statistics), IS590/IS545 (Data Visualization), IS457 (Data Storytelling)
- Online and in-person teaching

Aug 2020 - Present | **National Center for Supercomputing Applications, University of Illinois Urbana-Champaign**
Faculty Affiliate
- Collaboration with the Advanced Visualization Lab on software development and visualization production
- Mentoring SPIN students

Aug 2018 - May 2020 | **School of Information Sciences, University of Illinois Urbana-Champaign**
Adjunct Lecturer
- Online and in-person teaching

Apr 2016 - May 2020 | **National Center for Supercomputing Applications, University of Illinois Urbana-Champaign**
Visiting Scholar
- Collaboration with the Advanced Visualization Lab on software development and visualization production

Jul 2019 - May 2020 | **World Wide Telescope, University of Illinois Urbana-Champaign & Cambridge, MA**
Software Developer
- Integration of citizen science image labeling workflow with online archiving and digitization webpages

Jul-Aug 2019; Jun-Jul 2020 | **Harvard Pre-College Program, Cambridge, MA**
Instructor
- Introduction to computational astronomy and data visualization intensive summer course for high school students

Aug 2017 - Aug 2018 | **Harvard-Smithsonian Center for Astrophysics, Cambridge, MA**
Institute of Theory and Computation Postdoctoral Fellow
- Developed hydrodynamical simulations of gas retention in galaxies and star clusters
- Visualization software development and publishing
- Student mentoring

Aug 2014 - Aug 2017 | **Harvard-Smithsonian Center for Astrophysics, Cambridge, MA**
National Science Foundation Postdoctoral Fellow
- Co-developing large-scale hydrodynamical simulations of galaxy formation
- Student mentoring

Jul 2005 - Jul 2006 | **Dr. Andrea Ghez's Galactic Center Group, University of California, Los Angeles, CA**
Researcher
- Analyzed IR spectral data to calculate radial velocities of stars orbiting the galactic center
- Published research measuring the distance to the galactic center

Teaching Experience and Curriculum Development

Undergraduate & Graduate Semester Courses

2019-present | **IS590DV/IS445 - Data Visualization (in-person/online)**
Graduate
- Introduction to data visualization concepts (human perception, audience, etc)
- Usage of data visualization tools in Python, JavaScript and PrairieLearn
- Introduction to publishing interactive data visualizations on the web (Jekyll/HuggingFace)

2021-present | **IS457 - Data Storytelling (in-person/online)**
UIUC - Graduate
- Introduction to storytelling concepts (audience engagement, ethics, presentation design)
- Introduction to Google Data Studio and PowerBI as data visualization tools
- Introduction to Twine as a storyboarding/story design tool

2018-2020 | **IS542/IS507 - Data, Statistical Models, and Information (online, in person)**
UIUC - Graduate
- Introduction to probability and statistics
- Supervised and unsupervised machine learning
- Building of probabilistic and inference models in R programming language

2019 | **IS452/IS430 - Foundations of Information Processing (online)**
UIUC - Graduate
- Introduction to programming in Python
- Data reading/writing, basic data cleaning

Undergraduate Summer Courses

2019-2020 | **CSCI-P-14110 - Introduction to Programming, Computational Science, and Data Visualization**
Harvard - Pre-College Program
- Introduction to Python programming
- Basic computation with Python, basic data cleaning and processing
- 30 hour course equivalent

2016-2017 **Introduction to Computational Astronomy and Data Visualization**
Harvard - Banneker & Aztlán Institutes (REU)
- Introduction computational astrophysics concepts
- Basic astrophysics simulations with Python, basic data cleaning and processing
- 12 hour course equivalent

2014 ***LAMAT* Python Programming Bootcamp for Transfer Students**
UCSC - LAMAT Undergraduate Summer Program (REU)
- Inquiry based program for introductory Python projects, including Raspberry PI's, scientific simulations, and three dimensional data visualization
- 28 hour course equivalent

Continuing Education, Workshops

2019 **GitHub Pages for Your Professional Webpage**
UIUC - Continuing Education with Discovery Partners Institute
- Introduction to GitHub pages to build your own website
- Online workshop for TechReady Illinois program

2019 **Data Harvesting: Homegrown Data Analysis for Agriculture**
UIUC - Continuing Education (Small Farmers & CCAs)
- Two, two-day workshops geared to small farmers, agronomists and CCAs
- Crop analysis and planting planning in the R programming language
- Full workshop materials accepted to Carpentries Incubator

2012, 2015, 2017 **Sew Your Own Circuit Workshop**
GeekGirlCon, Seattle WA
- 1.5 hour, inquiry based activity to introduce girls and women to electronic circuits with sewable LEDs and conductive thread

2013 **Programming Fundamentals Workshop**
UCSC - Introduction to Python Programming
- 3 day workshop for community college transfer students
- Inquiry based Python instruction

2011 **Visualizing Astronomy Workshop**
UCSC - Institute for Scientist & Engineer Educators
- 2.5 day, inquiry based teaching for mixed class of science and art undergraduates
- mixed groups used Arduinos to produce hands-on scientific art installations through a process of data acquisition, analysis, and data visualization

Other Teaching

2016 **Instructor, yt user's meeting**
National Center for Super Computing Applications

2010-2013 **Instructor, Santa Cruz Jail Inmate Education project**
University of California, Santa Cruz

2012 **Guest lecturer, DANM 133 Electronics Class**
University of California, Santa Cruz

2012 **Guest lecturer, DANM 133 Electronics Class**
University of California, Santa Cruz

2012 | **Co-instructor, Astronomy 202, Graduate level "Radiative Processes" (Quarter-long)**
University of California, Santa Cruz

2011 | **Teaching Assistant, "Introduction to the Cosmos"**
University of California, Santa Cruz

2011 | **Co-instructor, Light and Spectra workshop at Girls Go Tech Fair**
NASA AMES, Mountain View, CA

2008 | **Teaching Assistant, "Introductory Astronomy: The Stars"**
University of California, Santa Cruz

Research Advising and Mentoring

Doctoral Student Research Supervision

2024-present | **Aria Pessianzadeh, Information Sciences PhD candidate**
in collaboration with Prof. Rezvaneh (Shadi) Rezapour (Drexel, Department of Information Science)

2023-present | **Elizabeth Conklin, Neuroscience PhD candidate**
in collaboration with Prof. Nate Schroeder (UIUC, Crop Sciences & Neuroscience)

2023-present | **Daniel Evans, Information Sciences PhD program**
in collaboration with Prof. Zoe LeBlanc and Prof. Stephen Downie (UIUC, iSchool)

Master Student Research Supervision

2022-present | **Hanyu (Zella) Zhao, BS/IS Student (2023)/M.S. Electrical and Computer Engineering (Data Science & Machine Learning concentration) at Duke University (2025)**
in collaboration with Prof. Rezapour (Drexel)

2020-present | **A. J. Christensen, M.S. Education (2024)**
current research collaborator (Grant 20-ADAP20-0225)

2022-2025 | **Shantanu Pagare, M.S. Information Sciences (2024)**
1 semester of independent study, Academic Hourly (Grant 20-ADAP20-0225)

2020-2023 | **Ishita Ghosh, M.S. Information Sciences (2022)**
Academic Hourly, 2020-2023, 1 semester of independent study (Grant 20-ADAP20-0225)

2022-2023 | **Ayesha Kesharia, M.S. Information Sciences (2023)**
1 semester of independent study & summer research mentee (Grant 20-ADAP20-0225)

2019-2022 | **Kalina Borkiewicz, MCS Computer Sciences (2020)**
current research collaborator and PhD student (The University of Utah in Computer Graphics and Data Visualization)

2022 | **Gayatri Kallakuri Venkata Ratna, M.S. Information Sciences (2022)**
Academic Hourly (Grant 20-ADAP20-0225)

2019-2020 | **Dykee Gorell, M.S. in Library and Information Science (2020)**
1 semester of independent study, and current PhD student at University of Washington

Undergraduate Student Research Supervision

2024-present | **Emma Maxwell, B.S. Linguistics and Computer Science**
NCSA SPIN program

2023-present | **Kyle Keliuotis, B.S. Brain & Cognitive Science and Computer Science**
NCSA SPIN program, co-mentored with PhD student Ellie Conklin, (Grant NIH UEI H6N1ZF5HJ2G3)

2023-present | **Aashvi Busa, B.S. Computer Science**
NCSA SPIN program, co-mentored with PhD student Ellie Conklin, (Grant NIH UEI H6N1ZF5HJ2G3)

2024-2025 | **Louisa Zhang, B.S. Computer Science**
NCSA SPIN program

2023-2024 | **Tino Heuberger, B.S. Computer Science BSc**
in collaboration with faculty at FHNW (University of Applied Sciences North Western Switzerland)

2022-2024 | **Kiara Balleza, B.S. Geography/ Geographic Information Systems & INFO Minor (2024)**
NCSA SPIN program, (Grant 20-ADAP20-0225)

2022-2025 | **Sri Nithya Yeragorla, B.S. Information Sciences**
NCSA SPIN program

2023-2025 | **Dorothy Wongkarnta, B.S. Information Sciences (2024)**
NCSA SPIN program, co-mentored with PhD student Dan Evans

2023-2025 | **Dirgh Shah, B.S. Engineering Physics/Applied Physics (2024)**
NCSA SPIN program, co-mentored with PhD student Ellie Conkin, (Grant NIH UEI H6N1ZF5HJ2G3)

2022-2023 | **Linh Pham, B.S. Information Sciences (2023)**
NCSA SPIN program, (Grant 20-ADAP20-0225)

2023 | **Mridula (Mally) Shan, B.S. Human Developmental & Regenerative Biology | Statistics - Computational Biology & Bioinformatics Track, Harvard**
(Grant 20-ADAP20-0225)

2021-2023 | **Morgan G. Cosillo, B.S. Information Sciences (2023)**
NCSA SPIN program, (Grant 20-ADAP20-0225), resulted in a co-author'd paper in a peer-reviewed conference presentation; Fiddler Innovation Fellow (NCSA), Outstanding Undergraduate Award (iSchool)

2021-2023 | **Junting (David) Zhu, B.S. Information Sciences & BFA Graphic Design (2023)**
NCSA SPIN program, (Grant 20-ADAP20-0225)

2022-2023 | **Rushdan Jimoh, B.S. Information Sciences (2023)**
NCSA SPIN program, (Grant 20-ADAP20-0225)

2022 | **Ayesha Baweja, B.S. Information Sciences (2022)**
NCSA SPIN program, (Grant 20-ADAP20-0225)

2022 | **Yiwen Miao, B.S. Accounting and Finance (2023)**
NCSA SPIN program, (Brinson Fellowship)

2021-2022 | **Anushka Gami, B.S. Information Sciences (2024)**
NCSA SPIN program

2021-2022 | **Alistair Nunn, B.S. Information Sciences (2023)**
NCSA SPIN program, Fiddler Innovation Fellow (NCSA), Outstanding Undergraduate Award (iSchool)

2021-2022 | **Shriya Srikanth, B.S. Information Sciences (2023)**
NCSA SPIN program

2021-2022 | **Yilin (Toby) Tao, B.S. Information Sciences (2022)**
NCSA SPIN program, (Grant 20-ADAP20-0225)

Invited Talks and Conference Presentations

Scientific Digitization Talks

Nov 2022 | **"The Reading Time Machine Project: Document Layout Analysis for Scientific Article Figure & Caption Extraction"**
AEOLIAN (Artificial Intelligence for Cultural Organizations) Workshop 5: "Making More Sense With Machines", online, November 29, 2022

Visualization Talks

Sep 2024 | **"Introduction to Data Viz and Building Apps"**
Guest Lecture, Drexel University, October 16, 2024

Sep 2020 | **"Visualizing Data"**
CARLI Counts Webinar, Champaign, IL, September 21, 2020

Nov 2019 | **"How to not lie with data"**
CARLI Counts Webinar, Champaign, IL, November 18, 2019

Dec 2018 | **"Visualizing Science"**
Center for Computational Astrophysics, Simons Foundation, New York, December, 12, 2018

Jun 2018 | **"ytini for Cinematic Visualization in Houdini"**
National Center for Supercomputing Applications, Champaign, IL, June, 13, 2018

May 2018 | **"Visualizing Astronomy: How do we learn stuff from big datasets?"**
American Museum of Natural History, New York, May, 1, 2018

Sep 2016 | **"Visualization for Astrophysics"**
National Center for Supercomputing Applications, Illinois, September 21, 2016

Aug 2016 | **"Visualization Techniques in Astronomy"**
Pixar University, Pixar Emeryville Campus, August 25, 2016

Astrophysics Talks

Jul 2018 | **"Modeling the Universe: Cosmological Simulations of Elemental Production"**
Center for Astrophysics Summer Colloquium, Cambridge, MA, July, 19, 2018

Apr 2018 | **"Chemical Evolution in Simulations of Galaxy Formation: Elemental Evolution in IllustrisTNG"**
APS Meeting, Columbus, OH, April 14, 2018

Sep 2017 | **"Elemental Evolution in Cosmological Simulations"**
UIUC Colloquium, Champaign, IL, September 13, 2017

May 2017 | **"R-process elements in the IllustrisTNG Simulations"**
Nebular Emission Modeling Workshop, Cairns, AU, May 21, 2017

May 2017 | **"The IllustrisTNG Simulations: Elemental Evolution in Cosmological Simulations"**
University of Wisconsin Madison Colloquium, May 4, 2017

Sep 2016 | **"Should I Stay or Should I Go: Effects of Stellar Winds on Gas Retention and Expulsion in Star Clusters"**
MODEST Meeting, NYC, Sept 10, 2016

Feb 2015 | **“Recent Star Formation in Dwarf Galaxies?"**
Amherst/UMass Physics and Astronomy Colloquium, Feb 19, 2015

Public/Open Source Visualization Packages, Lead Developer

ytini | **www.ytini.com**
Blend of yt and widely used special effects software Houdini for scientific visualization

AstroBlend | **www.astroblend.com**
Tool for use of scientific data in graphics software package Blender

AVRiot | **www.avriot.com**
Resources and tutorials to create motion/sound sensitive wearables

Selected Awards and Media Coverage

May 2025 | **Best Poster Award**
WebSci 2025

May 2025 | **Outstanding Summer Mentor**
NCSA SPIN Undergraduate Program

Mar 2024 | **NIH Grant Writing Series Participant**
School of Information Sciences, UIUC

Dec 2023 | **Teachers Ranked as Excellent**
School of Information Sciences, UIUC

Sep 2022 | **Invited Conference Paper follow-up journal submission**
Theory and Practice on Digital Libraries (TPDL)

Aug 2022 | **Outstanding Summer Mentor**
NCSA SPIN Undergraduate Program

Dec 2022 | **Teachers Ranked as Excellent**
School of Information Sciences, UIUC

Dec 2021 | **Teachers Ranked as Excellent**
School of Information Sciences, UIUC

Jun 2014 | **Chancellor’s Achievement Award For Diversity**
University of California, Santa Cruz

Sep 2013 | **ARCS Scholar**
University of California, Santa Cruz

Sep 2012 | **President’s Dissertation Year Fellowship**
University of California, Santa Cruz

Sep 2012 | **Departmental Mentoring Award**
University of California, Santa Cruz

Sep 2006 | **Regent’s Fellowship**
University of California, Santa Cruz

Sep 2005 | **Charles Geoffrey Hilton Award for Academic Excellence**
University of California, Los Angeles

Sep 2005 | **Highest Departmental Honors & Phi Beta Kappa**
University of California, Los Angeles

Group Awards/Media

2019 | **"Birth of Planet Earth" (documentary)**
UIUC - ytini software developer

- Best Scientific Visualization and Data Analytics Showcase award at IEEE Supercomputing in Denver, CO, 2019
- Electronic Theater, Official Selection: Photosynthesis in a Chromatophore, Excerpt from "Birth of Planet Earth," SIGGRAPH Asia, Brisbane, Australia, 2019
- Computer Animation Festival, Official Selection: Formation of the Moon, Excerpt from "Birth of Planet Earth," SIGGRAPH Asia, Brisbane, Australia, 2019
- Best Soundtrack Award, Immersive Film Festival, Espinho, Portugal, 2019
- Honorable Mention, "For the value of the work as a whole which involves detailed scientific visualizations associated with an enormous artistic beauty," Immersive Film Festival, Espinho, Portugal, 2019
- Best Educational Dome Film, DTLA Film Festival, Los Angeles, CA, 2019
- Official Selection, Immersive Film Festival, Espinho, Portugal, 2019
- Official Selection, Astra Film Festival, Romania, 2019
- Director's Award, Fulldome Festival Brno 2019
- Electronic Theater, Official Selection: Photosynthesis in a Chromatophore, Excerpt from "Birth of Planet Earth," SIGGRAPH 2019
- Best Astronomical Visualizations, Reflections of the Universe Fulldome Festival, Yaroslavl 2019
- Official Selection, Macon Film Festival 2019

Apr 2017 | **"Bringing Visual Effects Software to Scientists"**
NCSA Press Release, April 18, 2017

Dec 2015 | **"Spotlight 41: Jill P. Naiman"**
CodePancake Interview, December 11, 2015

Nov 2015 | **"Visualize astrophysics data with Blender"**
opensource.com interview, November 24, 2015

Awarded Grants

Mar 2023 - Mar 2026 | **NIH - WormAtlas: Center for C. elegans Anatomy**
co-I; Site: University of Illinois, Urbana-Champaign; Total Amount: $2,600,000
In collaboration with Crop Sciences & ACES, Advanced Visualization Lab (NCSA), Albert Einstein College of Medicine

Feb 2021 - Feb 2025 | **NASA ADAP - The Reading Time Machine: Transforming Astrophysical Literature into Actionable Data**
PI; Site: University of Illinois, Urbana-Champaign; Total Amount: $506,912
In collaboration with Harvard-Smithsonian Center for Astrophysics

Sep 2021 - Sep 2023 | **Brinson Foundation - Civic Science Fellowship**
co-PI; Site: University of Illinois, Urbana-Champaign; Total Amount: $246,000
In collaboration with Advanced Visualization Lab (NCSA)

Aug 2014 - Aug 2017 | **National Science Foundation Postdoctoral Fellowship**
PI; Site: Harvard-Smithsonian Center for Astrophysics; Total Amount: $267,000

Publications

2025

1. Glen Layne-Worthey, Downie, J. S., Swatscheno, J., Parulian, N., **Naiman, J. P.**, Schmidt, B., Organisciak, P., Underwood, T. & Dubnicek, R. in *Navigating Artificial Intelligence for Cultural Heritage Organisations* 135–166 (UCL Press, 2025).
2. **Naiman, J. P.**, Pessianzadeh, A., Zhao, H., Christensen, A., Nunn, A., Srikanth, S., Gami, A., Maxwell, E., Zhang, L., Yeragorla, S. N. & Rezapour, R. *Beyond the Lens: Quantifying the Impact of Scientific Documentaries through Amazon Reviews* in *Proceedings of the 17th ACM Web Science Conference 2025* (Association for Computing Machinery, May 2025), 413–424.

2024

3. Eric Allen Jensen, Borkiewicz, K., Carpenter, J., Levy, S. & **Naiman, J. P.** Transforming Science Narratives? The Impact of Explanatory Labels of 3D Data Visualization on Public Understanding of Space Science. *International Journal of Science Education* (Oct. 2024).
4. Eric Allen Jensen, Kalina Borkiewicz, **Naiman, J. P.**, Stuart Levy & Jeff Carpenter. Picture Perfect Science Communication: How Public Audiences Respond to Informational Labels in Cinematic-Style 3D Data Visualization. *PLOS ONE* (Oct. 2024).
5. Evans, D. J., **Naiman, J. P.** & Downie, J. S. *Overcoming OCR Inaccuracies in Historic Newspaper Directories: Improving Digital Archaeology and Digital Humanities Data Pipelines* in *Reinvention & Responsibility: Digital Humanties Conference* (June 2024).
6. Iyer, K. G., Yunus, M., O'Neill, C., Ye, C., Hyk, A., McCormick, K., Ciuca, I., Wu, J. F., Accomazzi, A., Astarita, S., Chakrabarty, R., Cranney, J., Field, A., Ghosal, T., Ginolfi, M., Huertas-Company, M., Jablonska, M., Kruk, S., Liu, H., Marchidan, G., Mistry, R., **Naiman, J. P.**, Peek, J. E. G., Polimera, M., Rodriguez, S. J., Schawinski, K., Sharma, S., Smith, M. J., Ting, Y.-S. & Walmsley, M. *pathfinder: A Semantic Framework for Literature Review and Knowledge Discovery in Astronomy* Aug. 2024. arXiv: 2408.01556 [astro-ph.IM].
7. Kalina Borkiewicz, Jensen, E., Yiwen Miao, Levy, S., **Naiman, J. P.**, Carpenter, J. & Isaacs, K. E. *Audience Reach of Scientific Data Visualizations in Planetarium-Screened Films* Oct. 2024. arXiv: 2411.08045 [physics.pop-ph].

2023

8. Doppel, J. E., Sales, L. V., Nelson, D., Pillepich, A., Abadi, M. G., Peng, E. W., Marinacci, F., **Naiman, J. P.**, Torrey, P., Vogelsberger, M., Weinberger, R. & Hernquist, L. Modelling globular clusters in the TNG50 simulation: predictions from dwarfs to giant galaxies. *MNRAS* **518,** 2453–2470. arXiv: 2209.11759 [astro-ph.GA] (Jan. 2023).
9. Dung Nguyen, T., Ting, Y.-S., Ciucă, I., O'Neill, C., Sun, Z.-C., Jabłońska, M., Kruk, S., Perkowski, E., Miller, J., Li, J., Peek, J., Iyer, K., Różański, T., Khetarpal, P., Zaman, S., Brodrick, D., Rodríguez Méndez, S. J., Bui, T., Goodman, A., Accomazzi, A., **Naiman, J. P.**, Cranney, J., Schawinski, K. & UniverseTBD. AstroLLaMA: Towards Specialized Foundation Models in Astronomy. *arXiv e-prints,* arXiv:2309.06126 (Sept. 2023).
10. Jensen, E. A., Borkiewicz, K., **Naiman, J. P.**, Levy, S. & Carpenter, J. Evidence-Based Methods of Communicating Science to the Public through Data Visualization. *Sustainability* **15,** 6845 (2023).
11. **Naiman, J. P.**, Cosillo, M. G., Williams, P. K. & Goodman, A. *Large Synthetic Data from the arχiv for OCR Post Correction of Historic Scientific Articles* in *International Conference on Theory and Practice of Digital Libraries* (2023), 265–274.
12. **Naiman, J. P.** Generalizability in Document Layout Analysis for Scientific Article Figure & Caption Extraction. *arXiv e-prints,* arXiv:2301.10781. arXiv: 2301.10781 [cs.DL] (Jan. 2023).
13. **Naiman, J. P.**, Williams, P. K. G. & Goodman, A. The Digitization of Historical Astrophysical Literature with Highly-Localized Figures and Figure Captions. *International Journal on Digital Libraries,* arXiv:2302.11583. arXiv: 2302.11583 [cs.DL] (Feb. 2023).
14. Turk, M., Goldbaum, N. J., ZuHone, J. A., Hummels, C., Ji, S., Lang, M., Munk, M., Smith, B., Kowalik, K., de Val-Borro, M., *et al. Introducing yt 4.0: Analysis and Visualization of Volumetric Data* tech. rep. (Manubot, 2023).

2022

15. Borkiewicz, K., Jensen, E., Levy, S. & **Naiman, J. P.** Introducing cinematic scientific visualization: a new frontier in science communication. *Impact of Social Sciences Blog* (2022).
16. Jensen, E. A., Borkiewicz, K. M., **Naiman, J. P.** & Carptenter, J. D. in *ACM SIGGRAPH 2022 Courses* 1–120 (2022).
17. Jensen, E. A., Borkiewicz, K. M. & **Naiman, J. P.** A new frontier in science communication? What we know about how public audiences respond to cinematic scientific visualization. *Frontiers in Communication* **7,** 840631 (2022).
18. **Naiman, J. P.**, Williams, P. K. & Goodman, A. *Figure and Figure Caption Extraction for Mixed Raster and Vector PDFs: Digitization of Astronomical Literature with OCR Features* in *Linking Theory and Practice of Digital Libraries: 26th International Conference on Theory and Practice of Digital Libraries, TPDL 2022, Padua, Italy, September 20–23, 2022, Proceedings* (2022), arXiv:2209.04460. arXiv: 2209.04460.

2021

19. Borkiewicz, K., Shah, V., **Naiman, J. P.**, Shen, C., Levy, S. & Carpenter, J. CloudFindr: A Deep Learning Cloud Artifact Masker for Satellite DEM Data. *arXiv e-prints,* arXiv:2110.13819. arXiv: 2110.13819 [cs.CV] (Oct. 2021).

2020

20. Aleo, P. D., Lock, S. J., Cox, D. J., Levy, S. A., **Naiman, J. P.**, Christensen, A. J., Borkiewicz, K. & Patterson, R. Clustering-informed cinematic astrophysical data visualization with application to the Moon-forming terrestrial synestia. *Astronomy and Computing* **33,** 100424. arXiv: 2006.00084 [astro-ph.IM] (Oct. 2020).
21. Burkhart, B., Appel, S. M., Bialy, S., Cho, J., Christensen, A. J., Collins, D., Federrath, C., Fielding, D. B., Finkbeiner, D., Hill, A. S., Ibáñez-Mejía, J. C., Krumholz, M. R., Lazarian, A., Li, M., Mocz, P., Mac Low, M. .-., **Naiman, J. P.**, Portillo, S. K. N., Shane, B., Slepian, Z. & Yuan, Y. The Catalogue for Astrophysical Turbulence Simulations (CATS). *ApJ* **905,** 14. arXiv: 2010.11227 [astro-ph.GA] (Dec. 2020).
22. Gallegos-Garcia, M., Burkhart, B., Rosen, A. L., **Naiman, J. P.** & Ramirez-Ruiz, E. Winds in Star Clusters Drive Kolmogorov Turbulence. *ApJL* **899,** L30. arXiv: 2006.14626 [astro-ph.GA] (Aug. 2020).
23. Karpov, P. I., Martizzi, D., Macias, P., Ramirez-Ruiz, E., Kolborg, A. N. & **Naiman, J. P.** The Effects of Metallicity and Abundance Pattern of the ISM on Supernova Feedback. *ApJ* **896,** 66. arXiv: 2004.10974 [astro-ph.GA] (June 2020).
24. Lu, S., Xu, D., Wang, Y., Mao, S., Ge, J., Springel, V., Wang, Y., Vogelsberger, M., **Naiman, J. P.** & Hernquist, L. Redshift evolution of the Fundamental Plane relation in the IllustrisTNG simulation. *MNRAS* **492,** 5930–5939. arXiv: 1906.00927 [astro-ph.GA] (Mar. 2020).
25. **Naiman, J. P.** *The Reading Time Machine: Transforming Astrophysical Literature into Actionable Data* NASA Proposal id.20-ADAP20-225. Jan. 2020.
26. **Naiman, J. P.**, Soares-Furtado, M. & Ramirez-Ruiz, E. Modelling gas evacuation mechanisms in present-day globular clusters: stellar winds from evolved stars and pulsar heating. *MNRAS* **491,** 4602–4614. arXiv: 1310.8301 [astro-ph.GA] (Feb. 2020).

2019

27. Borkiewicz, K., **Naiman, J. P.** & Lai, H. Cinematic Visualization of Multiresolution Data: Ytini for Adaptive Mesh Refinement in Houdini. *Astron. J.* **158,** 10. arXiv: 1808.02860 [cs.GR] (July 2019).
28. Martizzi, D., Vogelsberger, M., Artale, M. C., Haider, M., Torrey, P., Marinacci, F., Nelson, D., Pillepich, A., Weinberger, R., Hernquist, L., **Naiman, J. P.** & Springel, V. Baryons in the Cosmic Web of IllustrisTNG - I: gas in knots, filaments, sheets, and voids. *MNRAS* **486,** 3766–3787. arXiv: 1810.01883 [astro-ph.CO] (July 2019).
29. Torrey, P., Vogelsberger, M., Marinacci, F., Pakmor, R., Springel, V., Nelson, D., **Naiman, J. P.**, Pillepich, A., Genel, S., Weinberger, R. & Hernquist, L. The evolution of the mass-metallicity relation and its scatter in IllustrisTNG. *MNRAS* **484,** 5587–5607. arXiv: 1711.05261 [astro-ph.GA] (Apr. 2019).
30. Xu, D., Zhu, L., Grand, R., Springel, V., Mao, S., van de Ven, G., Lu, S., Wang, Y., Pillepich, A., Genel, S., Nelson, D., Rodriguez-Gomez, V., Pakmor, R., Weinberger, R., Marinacci, F., Vogelsberger, M., Torrey, P., **Naiman, J. P.** & Hernquist, L. A study of stellar orbit fractions: simulated IllustrisTNG galaxies compared to CALIFA observations. *MNRAS* **489,** 842–854. arXiv: 1905.11415 [astro-ph.GA] (Oct. 2019).

2018

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Service

Public Engagement

Apr 2024 | **I-Engage Participant**
University of Illinois, Urbana-Champaign

Apr 2022 | **Data Science Users Group presentation**
University of Illinois, Urbana-Champaign/Online

May 2020 | **GitHub Pages for Your Professional Webpage**
Discovery Partners Institute/Online
- 2-hour introduction to GitHub pages to build your own website
- Online workshop for TechReady Illinois program

Dec 2019 | **Data Harvesting: Homegrown Data Analysis for Agriculture**
UIUC - Continuing Education (Small Farmers & CCAs)
- Designed the course material's webpage and co-designed the course materials (slides, programming materials)
- Two, two-day workshops geared to Midwest small farmers, agronomists and CCAs
- Crop analysis and planting planning in the R programming language
- Full workshop materials accepted to Carpentries Incubator

To the Profession

2024-present | **Alignment Team for UniverseTBD Project**

Apr 2024 | **Panelist, NCSA Research Conference**

Sep 2023 | **Session Chair, "Monitoring and Publishing science", Theory and Practice in Digital Libraries Conference**

Aug 2022 | **Referee, "Computer Vision and Machine Learning Approaches for Metadata Enrichment to Improve Searchability of Historical Newspaper Collections", Journal of Documentation**

Aug 2021 | **NASA Astrophysics Data Analysis Program, Grant Panel reviewer**

To the University & Campus

2023-present | **BSIS Program Committee Member**

2023-2024 | **AI Curriculum Committee**

2022 | **Chair of Data Science Task Force**

2022 | **NCSA faculty fellows review committee**

2022 | **NCSA Fiddler review committee**

2020-2022 | **MSIM Program Committee Member**

2021-2022 | **Specialized Faculty Search Committee - School of Information Sciences (posting: 154451)**

2021-2022 | **Capricious Grading Committee**

2021-2022 | **Committee member, Assistant Director for MS/IM and MS/BIO Advising (posting: 141456)**

Other Service

2024-present | **PhD student mentoring program**
I am leading an effort to increase our mentoring support for PhD students who want to mentor undergraduates on research projects in collaboration with the Director of Undergraduate Research (Karen Rodriguez'G) and iSchool staff (Matt Archer, Lauryn Lehman, Karin Readel).

2023-present | **Specialized Faculty Task Force**
In 2023-2024 I Chaired this task force to help the growing number of faculty on this track navigate pressing issues and questions specific to those on this track. I am now a member (Prof. Hendrick is Chair).

2023-present | **OCR Working Group**
A $\sim$1x month meeting for faculty and graduate students from across campus and other institutions to share Optical Character Recognition projects and resources.

2023-present | **Data Science/Machine Learning/AI for MSLIS Course Development**
I Chaired this course development group to develop some Machine Learning/AI courses for the MSLIS program.