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RESEARCH INTERESTS

Computer vision and deep learning algorithms for image analysis including object detection and instance/semantic segmentation. Software techniques and tools for large-scale scientific image analysis.

EDUCATION

2022	University of California, Santa Cruz	Ph.D., Computer Science <i>Advisors – Brant Robertson – Roberto Manduchi</i>
2019	University of California, Santa Cruz	M.S., Computer Science
2014	Azusa Pacific University	B.A., Computer Information Systems

SELECTED PUBLICATIONS

Hausen, R., Robertson, B. E., Zhu, H., Gnedin, N. Y., Madau, P., Schneider, E. E., Villaseñor, B., Drakos, N. E., “Revealing the Galaxy-Halo Connection Through Machine Learning”, *The Astrophysical Journal*, vol. 945, no.2, pp. 122, 2023.

Robertson, B. E., Tacchella, S., Johnson, B. D., **Hausen, R.**, Alabi, A., et. al, “Morpheus Reveals Distant Disk Galaxy Morphologies with JWST: The First AI/ML Analysis of JWST Images”, *The Astrophysical Journal Letters*, Volume 942, Issue 2, pp. L42, 2023

Hausen, R. and Robertson, B. E., “FitsMap: A Simple, Lightweight Tool For Displaying Interactive Astronomical Image and Catalog Data”, *Astronomy and Computing*, vol. 39, pp.100583, 2022.

Hausen, R. and Robertson, B. E., “Partial-Attribution Instance Segmentation for Astronomical Source Detection and Deblending”, *Fourth Workshop on Machine Learning and the Physical Sciences, NeurIPS 2021*.

Hausen, R. and Robertson, B. E., “Morpheus: A Deep Learning Framework for the Pixel-level Analysis of Astronomical Image Data”, *The Astrophysical Journal Supplement Series*, vol. 248, no. 1, pp. 1-37, 2020.

Dominguez Sánchez, H., Martin, G., Damjanov, I., [and 14 others, including **Hausen, R.**], “Identification of Tidal Features in Deep Optical Galaxy Images With Convolutional Neural Networks”, Monthly Notices of The Royal Astronomical Society, vol. 521, no. 3, pp. 3861-3872, 2023.

Drakos, N., Villaseñor, B., Robertson, B. E., **Hausen, R.**, ... & Wechsler, R. H., “Deep Realistic Extragalactic Model (DREaM) Galaxy Catalogs: Predictions for a Roman Ultra-Deep Field”, The Astrophysical Journal, vol. 926, no.2, pp. 122, 2022.

Reike M. J., B., Robertson, B. E., Tacchella, S., Hainline, K., Johnson B. D., **Hausen, R.**, ... & Woodrum, C., “JADES Initial Data Release for the Hubble Ultra Deep Field: Revealing the Faint Infrared Sky with Deep JWST NIRCам Imaging”, The Astrophysical Journal Supplement Series, vol. 269, no.1, pp. 16, 2023.

Neller, T. W., Keeley, S., Guerzhoy, M., Hoenig, W., Li, J., Koenig, S., **Hausen, R.**, ... & Resnick, C., “Model AI Assignments 2020”, AAAI 2020. pp. 1-3, 2020.

Norouzi, N. and **Hausen, R.**, “Quantitative Evaluation of Student Engagement in a Large-Scale Introduction to Programming Course using a Cloud-based Automatic Grading System”, 2018 IEEE Frontiers in Education Conference, pp. 1-5, 2018.

SELECTED PROFESSIONAL SERVICE

Referee for Astrophysical Journal, Astronomy and Computing, and NeurIPS Machine Learning in the Physical Sciences.

2021-Pres.	Member	JWST Advanced Deep Extragalactic Survey (JADES) Collaboration
2024	Reviewer	Mark O. Robbins Prize
2024	Reviewer	IDIES Summer Student Fellowship
2023	Reviewer	IDIES Symposium Poster Session
2023	Reviewer	IDIES Summer Student Fellowship
2022	Reviewer	IDIES Symposium Poster Session

EMPLOYMENT

2022-Pres.	Assistant Research Scientist	Johns Hopkins University
2016-2022	Graduate Student Research Assistant	University of California, Santa Cruz
2021	Instructor, Beginning Programming in Python	University of California, Santa Cruz
2018	Teaching Assistant, Artificial Intelligence	University of California, Santa Cruz
2017-2018	Teaching Assistant, Intermed. Programming	University of California, Santa Cruz
2013-2015	Software Engineer	Power Settlements
2012-2013	Research Assistant	Azusa Pacific University