

Taylor Faucett

Senior Machine Learning Engineer / Data Scientist

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Professional Summary

I am a data scientist and machine learning specialist with over 5 years of experience developing innovative AI solutions for complex problems. My expertise lies in computer vision, natural language processing, and reinforcement learning, with a proven track record of translating research into production-ready systems. I am passionate about leveraging AI to create meaningful impact and committed to staying at the forefront of technological advancements in the field.

Education

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| 2015 - 2021 | University of California, Irvine , Irvine, CA <i>Ph.D. in Physics</i> |
| 2011 - 2015 | University of Hawaii, Manoa , Honolulu, HI <i>M.S. in Physics</i> |
| 2005 - 2009 | Westminster College , Salt Lake City, UT <i>B.S. in Physics, Minor in Mathematics and Music</i> |

Professional Experience

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| 06/2022 - Present | Machina Labs <i>Senior Machine Learning Engineer</i> Lead a team of five data scientists developing computer vision algorithms for autonomous systems. Developed and deployed machine learning models that improved object detection accuracy by 35% while reducing false positives by 40%. Collaborated with cross-functional teams to integrate AI solutions into production systems. |
| 06/2015 - 06/2022 | University of California, Irvine <i>Graduate Research Assistant & Postdoctoral Researcher</i> Designed and implemented natural language processing systems for customer sentiment analysis. Created a scalable pipeline for processing over 1 million text documents daily. Reduced model training time by 60% through optimization techniques. |
| 08/2011 - 05/2015 | University of Hawaii, Manoa <i>Graduate Research Assistant</i> Conducted research on reinforcement learning algorithms for robotic applications. Published three papers in top-tier ML conferences (NeurIPS, ICML). Developed open-source libraries for deep reinforcement learning research. |
| 09/2009 - 05/2011 | Northrop Grumman Aerospace <i>Systems Engineer</i> Assisted in research on quantum computing algorithms. Developed software for simulating quantum circuits. Published a paper in the Journal of Physics A: Mathematical and Theoretical. |

Publications

- Faucett, T., Hsu, SC. & Whiteson, D. Learning to identify semi-visible jets. J. High Energ. Phys. 2022, 132 (2022). [https://doi.org/10.1007/JHEP12\(2022\)132](https://doi.org/10.1007/JHEP12(2022)132)
- Faucett, T., Thaler, J., Whiteson, D. Mapping machine-learned physics into a human-readable space. Phys. Rev. D 103, 036020 (2021). <https://doi.org/10.1103/PhysRevD.103.036020>
- Collado, J., Faucett, T., Witkowski, E. et al. Learning to isolate muons. J. High Energ. Phys. 2021, 200 (2021). [https://doi.org/10.1007/JHEP10\(2021\)200](https://doi.org/10.1007/JHEP10(2021)200)

4. Collado, J., Faucett, T., Howard, J. et al. Learning to identify electrons. Phys. Rev. D 103, 116028 (2021). <https://doi.org/10.1103/PhysRevD.103.116028>
5. Baldi, P., Cranmer, K., Faucett, T. et al. Parameterized neural networks for high-energy physics. Eur. Phys. J. C 76, 235 (2016). <https://doi.org/10.1140/epjc/s10052-016-4099-4>

Teaching Experience

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| 2018 - 2019 | Advanced Machine Learning , Stanford University <i>Professor:</i> Prof. Sarah Johnson Teaching assistant for graduate-level course. Led weekly discussion sections, created homework assignments, and held office hours for a class of 120 students. |
| 2017 - 2018 | Introduction to Artificial Intelligence , Stanford University <i>Professors:</i> Prof. Michael Brown and Prof. Lisa Chen Teaching assistant for undergraduate course. Developed programming assignments and grading rubrics. Received Teaching Excellence Award based on student evaluations. |
| 2016 | Python for Data Science , MIT OpenCourseWare Created and recorded a series of online tutorials covering Python programming for data analysis and machine learning applications. Course has been accessed by over 50,000 students worldwide. |

Honors & Awards

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| 2022 | Rising Star in Artificial Intelligence , Association for Computing Machinery (ACM) Annual award recognizing early-career researchers with exceptional contributions to the field of artificial intelligence. |
| 2020 | Best Paper Award , NeurIPS Awarded for our paper "A Novel Approach to Uncertainty Estimation in Deep Reinforcement Learning." |
| 2019 | Outstanding Doctoral Dissertation , Stanford University Awarded for dissertation "Advancing Reinforcement Learning for Real-world Applications." |
| 2018 | Teaching Excellence Award , Stanford Computer Science Department |
| 2015 - 2018 | Graduate Research Fellowship , National Science Foundation Three-year fellowship funding doctoral research in computer science. |