Alex Stoken

Curriculum Vitae

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EDUCATION

University of Texas at Austin | Austin, Texas — May 2022
M.S. in Computer Science
Thesis – DexV2A: Vision Pretraining for Dexterous Manipulation, *advised by* Dr.Kristen Grauman

University of Arizona Honors College | Tucson, Arizona — May 2019
B.S. in Physics with Honors | B.S. in Mathematics | B.A. in Economics
Thesis – Bkg Characterization in 4Top Search at the ATLAS Experiment, *advised by* Dr. E. Varnes

RESEARCH AND WORK EXPERIENCE

NASA's Earth Sci. and Remote Sensing Unit, Jacobs JETS contract | Hou, TX — June '19 – Present
Data Scientist/Machine Learning Engineer

- Build, train, deploy machine learning models to enhance Gateway to Astronaut Photography of Earth
- Develop software tools to automate satellite sensor coverage, payload operations messages, hardware image analysis, mission support objectives, and planetary geospatial analysis
- Software Lead for Crew Lunar Observations team; design and build tools and operations flows
- Build interactive interfaces for public facing and internal tools to increase accessibility of results
- Technical team on 3 center-wide grant-funded projects; 2 department funded projects (1x lead)

NASA's Tech and Innovation Data Analytics Team | Washington, D.C. — June – August '18
Data Science Intern

- Implemented a virtual reality data visualization tool using Unity/C# to showcase emerging tech

NASA/Arizona Space Grant Consortium | Tucson, AZ — August '17 – May '18
Student Researcher in the Dept. of Physics

- Improved vector-like quark detection by 10% with tabular data machine learning & Bayesian statistics

SELECTED PUBLICATIONS

Papers

A Stoken, P Ilhardt, M Lambert, K Fisher. "(Street) Lights Will Guide You: Georeferencing Nighttime Astronaut Photography of Earth". IEEE/Computer Vision and Pattern Recognition EarthVision Workshop (CVPRW), 2024.

A Stoken, K Fisher. "Find My Astronaut Photo: Automated Localization and Georectification of Astronaut Photography". IEEE/Computer Vision and Pattern Recognition Image Matching Workshop (CVPRW), 2023.

G Berton, A Stoken, B Caputo, C Masone. "EarthLoc: Astronaut Photography Localization by Indexing Earth from Space". IEEE/Computer Vision and Pattern Recognition (CVPR), 2024.

G Berton, G Goletto, G Trivigno, A Stoken, B Caputo, C Masone. "EarthMatch: Iterative Coregistration for Fine-Grained Localization of Astronaut Photography". IEEE/Computer Vision and Pattern Recognition Image Matching Workshop (CVPRW), 2024.

N. De Filippis, G. Miniello, D.Burns, M. Mulhearn, H. Prosper, S. Tentindo, R. Mohamed Aly, S. Elgammal, A. Stoken, [3 others]
"Search for Dark Matter Produced in Association with a Higgs Boson in the four lepton final state at 13 TeV". CMS Analysis, 2016.

Abstracts

A Stoken, P Ilhardt, A Britton. "Learning Terrain Ruggedness from LROC NAC Image Data". Lunar and Planetary Science Conference, 2024.

C Lawson, P Ilhardt, A Stoken, M Evans. "Surface Gravimetry Using Rover Navigation Systems". Lunar and Planetary Science Conference, 2024.

M Rubio, P Ilhardt, A Stoken, S Walton. "Characterizing Small Craters in the Lunar South Pole Using the Crater Morphology Profile Tool (CAMEO)". Lunar and Planetary Science Conference, 2024.

A Stoken, A Britton, M Lambert, A Turner, M Rubio. "Automated Boulder Counting: Deep Learning for Boulder Detection and Height Estimation". Lunar and Planetary Science Conference, 2023.