

Alex Fitts, Ph.D.

1001 Spring Street Apt 612 • Silver Spring, MD • 20910

CELL (617) 462-1816 • E-MAIL fitts.alex@gmail.com • WEB afitts.github.io • LINK www.linkedin.com/in/alex-fitts

EDUCATION

Ph.D. Astronomy, The University of Texas at Austin, 2018

M. A. Astronomy, The University of Maryland, 2014

B.S. Physics, The University of Connecticut, 2012

SKILLS

- Expert in Python and the Python data stack
- Extensive experience in exploratory data analysis and mining multi-terabyte datasets
- Proficient in C, UNIX shell scripting, Git version control, and distributed computing frameworks such as OpenMP, MPI, and MPI4py
- Proficient in Pytorch and Fastai deep learning Python packages, as well as Scikit-learn
- Experience with Random Forests, Neural Networks (CNN, RNN + GAN) and logistic regression.
- Working knowledge of SQL, R, Hadoop, and Spark

EXPERIENCE

Freelance Data Scientist - (Dec. 2018)

- Utilized NLP with a RNN to create a bot that monitored chat sentiment in real-time on the video streaming service Twitch. Gathered and labeled Twitch chat logs of popular channels to create my own unique dataset to train the neural network.

Postdoctoral Research Fellow - (Sept. 2018 – Dec. 2018) – *University of Texas at Austin*

- Generated a specialized dataset from raw simulation data. Applied unsupervised learning algorithm (k-nearest neighbors) to dataset in an attempt to identify past galaxy mergers in phase space.
- MADE dataset of SIDM MW
- Mentored research collaborators and associates on the basics of neural networks and the application to their unique datasets.
- Supervised and instructed two undergraduate students in parallelized analysis on distributed computing resources.

Graduate Research Assistant - (Sept. 2014 – Sept. 2018) – *University of Texas at Austin*

- Managed entire research project from start-up to close-out including: writing proposals, identifying and achieving production milestones, publishing the final product in a high-impact scientific journal, and presenting findings to varied audiences.
- Performed extensive exploratory analysis of very large datasets using the Python data stack, particularly Numpy, Scipy, pandas, and h5py. Constructed parallelized analysis tools and data handling in Python across 2000+ computer processes using MPI.
- Designed explanatory visualizations using tools such as Matplotlib and Jupyter Notebook.
- Participated in a large (20+ person) international collaboration that involved presenting findings and formulating roadmaps in bi-weekly virtual meetings along with independent code and paper reviews.
- Authored four peer-reviewed publications in prominent scientific journals. Presented findings in numerous public and professional talks.

Graduate Teaching Assistant - (Sept. 2012 – Sept. 2014) – *University of Maryland*

- Taught astronomy to undergraduate students with varying technical backgrounds.
- Led team of Teaching Assistants and received Distinguished TA award.

CELL (617) 462-1816 • **E-MAIL** fitts.alex@gmail.com • **WEB** afitts.github.io • **LINK** www.linkedin.com/in/alex-fitts