

ARI SILBURT

State College, PA · 814.852.9489
arisilburt@gmail.com · linkedin.com/in/ari-silburt/ · github.com/silburt · silburt.github.io

SKILLS

LANGUAGES | PYTHON | C | HTML/CSS | LATEX | SQL* | SPARK*
TOOLS | NUMPY | PANDAS | SCIKIT-LEARN | KERAS | MATPLOTLIB | GPFLOW*
MACHINE LEARNING | DEEP LEARNING (CNN, LSTM*) | SUPERVISED
CLASSIFICATION (XGBOOST, KNN, SVM) | UNSUPERVISED CLUSTERING | LINEAR
REGRESSION | PCA | NLP* | GAUSSIAN PROCESSES*

*some experience

EDUCATION/RESEARCH

SEP 2017 – PRESENT

EBERLY POSTDOCTORAL FELLOW, PENN STATE UNIVERSITY

- [DeepMoon](#): Convolutional Neural Network via Keras to automate crater classification from lunar images. Transfer-learned lunar model to classify craters on Mercury.
- PCA and Gaussian Processes in Python to model the brightness variations of stars and extract small, periodic planetary signals buried within.

SEP 2012 – AUG 2017

PHD ASTROPHYSICS, UNIVERSITY OF TORONTO

- Used XGBoost in C/Python to predict the long-term (billion year) evolution of chaotic planetary systems, saving orders of magnitude in computation time.
- Within an MCMC and Bayesian framework, extracted the planetary parameters from observations and analyzed the stability and formation of planetary systems.
- Built [HERMES](#), a simulator designed for planetary systems with large numbers of bodies and complex dynamics (collisions, close encounters, etc.). Part of [Rebound](#), written in C.

EXPERIENCE

MAY 2017 – OCT 2017

DATA SCIENTIST, GEOTAB INC.

Used Geotab's vehicle accelerometer data to learn Chicago pothole signatures via One-Class SVM. Training data obtained by correlating anomalous accelerometer signals with known pothole locations from the Chicago pothole registry. Obtained 71% accuracy on test set.

SEP 2012 – PRESENT

SCIENCE COMMUNICATOR

- Teaching Assistant for 10 introductory and advanced physics classes.
- Presented 43 planetarium shows at the University of Toronto Planetarium.
- Delivered 21 scientific lectures for both public and research audiences (e.g. [here](#)).

DATA SCIENCE PROJECTS

- Blog: silburt.github.io/blog
- Code: github.com/silburt/Machine_Learning