

WINGKIT (KIT) LEE

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BOSTON, MA
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wingkitlee0.github.io

SKILLS

Technical: Python, C++, Fortran, CUDA, git, bash, Linux, Mathematica, HTML/CSS
Computing Technologies: OpenMP, MPI, LAPACK, MKL, AWS (Lambda, S3, EC2), Azure
Tools and Packages: scikit-learn, keras, TensorFlow, pandas, selenium

EXPERIENCE

Insight Data Science — *Fellow*

SEP 2019 - PRESENT, BOSTON, MA

- Developed **Greemigration** (www.planetanalytics.space), a web app that provides prediction and probability of the approval time for permanent resident (Green Card) applications;
- Analyzed the 45K rows of data from forums' web pages and government statistics; performed survival analysis to properly account for the statistics of pending cases
- Implemented the user interface using Bootstrap, Bokeh, and Flask; deployed the app on AWS EC2

Northwestern University — *Postdoctoral Associate*

AUG 2016 - AUG 2019, EVANSTON, IL

- Studied the fluid dynamics of forming planets and their environment; improved the accuracy of search by identifying alternative scenarios for spiral features in the young solar systems
- Developed and implemented a numerical algorithm that allows fast convergence to the theoretical predictions from fluid dynamics with 10 times fewer grid points compared to standard methods
- Awarded Microsoft Azure Research Grant (\$20,000) for code development in 2017

Academia Sinica Institute of Astronomy and Astrophysics — *Postdoc Fellow*

OCT 2013 - AUG 2016, TAIPEI, TAIWAN

- Implemented a distributed platform in python and Fortran for a multi-dimensional parameter study, resulted in excellent scalability that allows efficient search of interesting parameter space
- Led a small team on developing a Poisson equation solver in part of a parallel computational fluid dynamics code; identified new science projects that can be accomplished with the new functionality

University of California, San Diego — *Graduate Research Assistant*

SEP 2007 - SEP 2013, LA JOLLA, CA

- Created a new algorithm in Fortran and OpenMP to solve coupled nonlinear equations that helps understand star formation in spiral galaxies
- Developed a new theory of galactic structures and performed parallel numerical simulations in MPI to verify the theoretical predictions

PROJECTS

Open Source Projects (wingkitlee0.github.io/projects/)

Dec 2016 - PRESENT

- Developed the **Abstract Analyzer** web app written in TensorFlow/keras that uses GloVe and LSTM to classify a paragraph into a relevant category in astronomy; deployed the app using AWS Lambda
- Contributed to python libraries that uses high-performance backends, including **scikit-cuda** that allows the use of GPU libraries as a drop-in replacement for the scipy eigenvalue decomposition routines, resulting in 5 times speed-up
- Developed an Alexa Skill to read out recently-submitted journal abstracts and a mobile app on Windows Phone to allow easy access and sharing of those journals

EDUCATION

University of California, San Diego, PhD in Physics

SEP 2007 - SEP 2013

Chinese University of Hong Kong, BSc in Physics

SEP 2003 - AUG 2007