

Michael (Mike) Stanley

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EDUCATION

- **Carnegie Mellon University** Pittsburgh, PA
PhD Student in Statistics and Data Science, M.S. - Statistics Aug 2019 - Present / Aug 2015 - May 2016
- **Baylor University** Waco, TX
B.S. - Mathematics, Minor - French: GPA: 3.99/4.00 May 2015

RESEARCH AND PROFESSIONAL EXPERIENCE

- **Carnegie Mellon University** Pittsburgh, PA
Primary research projects under Mikael Kuusela Aug 2019 - Present
 - **Confidence intervals for ill-posed inverse problems via convex optimization:** Methodological development to optimize calibrated confidence intervals using physical constraints and/or priors. Lead author on the following pre-print: <https://arxiv.org/abs/2111.01091>.
 - **Uncertainty Quantification (UQ) for Carbon Flux Inversion:** Working with JPL collaborators analyzing current and developing new approaches to UQ for this application.
- **Jet Propulsion Laboratory (JPL)** Remote
Internship Jun 2020 - Aug 2020
 - **Algorithm development for Decision Theoretic Uncertainty Quantification (DTUQ):** Researched gradient-free optimization methods for DTUQ implementation. Co-authored on a resulting paper: <https://arxiv.org/abs/2108.10517>.
 - **Support for glacier scientists in application of DTUQ to ISSM model:** Assisted glacier scientists resulting in on-going collaboration.
- **tellic** New York, NY
Senior Data Scientist May 2016 - Jun 2019
 - **Constructing NLP pipelines and infrastructure:** Brought jupyter notebook code to production level quality with sound design and testing principles. Implemented a variety of text-based ML models to classify documents and tag text.
 - **Pharmaceutical experience:** Developed a base of knowledge for the pharmaceutical industry via working with data and regular communication with individuals in the field.

TECHNICAL SKILLS SUMMARY

- **Computing:** Convex optimization and Monte Carlo sampling on large-scale computing systems
- **Modeling:** Standard ML algorithms, classical statistical models, inverse modeling
- **Programming:** Python (highly experienced), SQL (proficient), bash/PBS (proficient), R/fortran (working knowledge)

GRANTS AND PRESENTATIONS

- **JPL Strategic University Research Partnership:** Awarding yearly funding to facilitate the development and implementation of decision theoretic and optimization-based UQ for JPL applications, including remote sensing, carbon flux inversion, and glacier modeling.
- **SIAM UQ (Apr 2022):** Session talk titled, "Optimizing Confidence Intervals for Satellite-Based Carbon Flux Inversion."
- **JSM (Aug 2021):** Topic-contributed session talk titled, "Statistical issues in uncertainty quantification for satellite-based carbon flux inversion."
- **UQ for remote sensing and inverse problems (Oct 2020):** Speed talk titled, "Quantifying carbon flux uncertainty - reproducing a UQ Monte Carlo algorithm as a reference point for frequentist model development."

MENTORSHIP AND TEACHING

- **Teaching Assistant (Fall 2019 to Present):** Led recitations, graded homework, organized TA schedules, hosted office hours, and developed custom software to streamline grading.
- **Corporate Capstone Advisor (Fall 2019):** Advised a group of four students for an undergraduate research project with Principal Financial Group to forecast fixed-income market conditions.
- **Data Science Summer Camp Lead Instructor (Summer 2022):** Developed and led a week-long data science summer camp to expose local high school students to a career in data science, including lectures and interactive coding activities.

OTHER SKILLS AND EXPERIENCE

- **Musician (primarily electric bass)**
Played and recorded with several groups in NYC including a regular jazz gig at the Harvard Club.
- **Collegiate Athlete**
Division 1 Cross Country and Track Aug 2011 - Sept 2012
- **International Experience**
Lived with a Parisian family for a summer student abroad (2013)