**Andrew Pensoneault**

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**Education**

**University of Iowa Expected January 2022**

(**In Progress**) Ph.D. in Applied Mathematical and Computational Sciences

**State University of New York – Geneseo May 2016**

Bachelor of Sciences in Applied Mathematics

**Experience**

**University of Iowa, Iowa Flood Center August 2018 – Present**

*Graduate Research Assistant*

- Develop and implement Data Assimilation algorithms for flood forecasting models.

- Obtain and perform data analysis on measurements from stage sensors.

- Develop experimental design for verification of the algorithm results.

- Visualize relevant results and data.

- Prepare reports to present technical results to a non-mathematician audience.

- Compile and prepare results collaboratively for the writing of an academic paper.

**Argonne National Lab, Mathematics and Computer Science May 2019 – August 2019**

*Givens Associate Intern*

- Developed neural network based methods for learning probability distributions.

- Collaborated on the project with several research scientists.

- Designed tools based on the TensorFlow framework in Python.

- Visualized results for meaningful technical interpretation.

**RIKEN Center for Computational Science, Data Assimilation Team May 2018 – August 2019**

*International HPC Summer Intern*

- Investigated cost-reduction techniques for Data Assimilation in numerical weather models.

- Researched Data Assimilation in a High-Performance Computing environment.

- Co-authored a publication based on the research.

**University of Iowa, Department of Mathematics August 2016 – June 2018**

*Graduate Teaching Assistant*

- Led discussion sections of college-level calculus and algebra.

- Graded assignment over a wide breadth of undergraduate-level mathematical courses.

- Individually tutored students in the Math Tutorial Lab.

- Collaborated with colleagues to create materials and discuss best teaching practices

**Publications**

- Pensoneault, A., Yang, X., & Zhu, X. (2020). Nonnegativity-enforced Gaussian process regression. Theoretical and Applied Mechanics Letters, 10(3), 182-187.

- Kotsuki, S., Pensoneault, A., Okazaki, A., & Miyoshi, T. (2020). Weight structure of the Local Ensemble Transform Kalman Filter: A case with an intermediate atmospheric general circulation model. Quarterly Journal of the Royal Meteorological Society, 146(732), 3399-3415.