Jaron C. **Thompson**

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Education

Colorado State University — *Fort Collins, Colorado*

B.S. Chemical Engineering, B.S. Biomedical Engineering — *2013 - 2018, GPA: 3.75*

M.S. Chemical Engineering — *2018 - PRESENT, GPA: 4.0*

Honors & Awards

2018 **Fellowship,** Walter Scott Jr. Graduate Fellowship — *Colorado State University*

Research

Colorado State University / Los Alamos National Laboratory

Master's Degree Candidate / Graduate Student Intern (Bioscience Division) — *May 2018 - PRESENT*

- Master's degree candidate in the Munsky Group (advisor Dr. Brian Munsky) with a focus on machine learning models for analysis of microbial communities
- Applied feed-forward neural network and random forest regression models to predict carbon fixation in soil from microbial community profiles and identify important microbial species for driving changes in carbon fixation
- Developed Bayesian networks to model interactions between microbial species and dissolved organic carbon

Experience

Los Alamos National Laboratory — *Los Alamos, New Mexico*

Graduate Student Intern (Intelligence and Systems Analysis Division) — *May 2018 - PRESENT*

- Developed nuclear reactor models to generate a database of simulated spent fuel data
- Applied machine learning classification and regression models to predict nuclear reactor properties from simulated spent fuel profiles
- Created a GUI (graphical user interface) in MATLAB to integrate reactor data in SQL database with trained machine learning models to predict reactor type, initial enrichment, time since irradiation, and reactor burnup

Applied Medical — *Rancho Santa Margarita, California*

R&D Intern — *Summer 2016, 2017*

- Incorporated techniques such as CAD modeling, Arduino microcontroller programming, and 3D printing to develop and design medical devices for wound healing
- Developed tissue culture for experiments and performed assays to assess cell viability and proliferation
- Wrote Standard Operating Procedure (SOP) documents for cell lab safety and general maintenance

Publications

Thompson J, Johansen R, Dunbar J, Munsky B (2019). Machine learning to predict microbial community functions: An analysis of dissolved organic carbon from litter decomposition. PLOS ONE 14(7): e0215502. https://doi.org/10.1371/journal.pone.0215502

Skills

Programming Python, MATLAB, JAVA, LaTeX, SQL

Cluster computing, GPU accelerated machine learning, Git/GitHub workflow

Modeling Mathematical modeling, Stochastic Simulation, Parameter estimation, Process control