TYLER SMITH

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SUMMARY

Graduate student in physics specializing in theoretical biophysics and population genetics. Five years of experience using mathematical modeling, data science, and statistical inference to do basic science.

EDUCATION

EMORY UNIVERSITY

PhD in Physics
Expected Aug 2021 | Atlanta, GA
Cum. GPA: 3.98

UNIVERSITY OF SOUTH FLORIDA

BS in Physics
May 2015 | Tampa, Fl
Cum. GPA: 3.7 / 4.0
Major GPA: 4.0 / 4.0

DUNEDIN HIGH SCHOOL

June 2010| Dunedin, Florida

SKILLS

CLOUD COMPUTING

- Amazon Web Services
- Cloud Foundry

STATISTICS & MACHINE LEARNING

- Linear Regression
- Logistic Regression
- Maximum Likelihood Estimation
- Principal Component Analysis
- Generalized Linear Models
- Support Vector Machines
- Neural Networks
- Decision Trees
- Random Forests
- Design of Experiments
- Natural Language Processing

PROGRAMMING

Over 5000 lines:

- R
- C++
- Matlab

Familiar:

- Python
- Flask
- Swagger UI
- RESTful APIs
- HTML
- Javascript
- TensorFlow
- Keras
- Unix Shell
- Mathematica
- SQL

SOURCE CONTROL

- Git

AWARDS

WOODRUFF FELLOWSHIP

2015 -2020
Awarded to 15 out of 300 incoming grad students for outstanding academic achievement.

EXPERIENCE

WEISSMAN EVOLUTIONARY THEORY GROUP | Graduate Researcher

2017 – Present | Atlanta, Ga

Worked with Professor Daniel Weissman to model the effects of long range dispersal in spatially structured populations.

Fit models described above to genetic data in order to infer difficult to measure dynamical properties of natural populations.

Designed and ran compute intensive, c++ based Monte Carlo simulations of spatial coalescence using AWS EC2 instances.

BOEING RESEARCH AND TECHNOLOGY |Applied Statistician/Mathematician Intern

May 2019 – Aug 2019 | Seattle, Wa

NEMENMAN THEORETICAL BIOPHYSICS LAB | Graduate Researcher

2015 – 2016 | Atlanta, Ga

Worked with Professors Ilya Nemenman and Andrew Mugler to elucidate the role of spatial averaging in multicellular gradient sensing

Used C++ and the Eigen linear algebra library to build numerical models of multicellular gradient sensing.

USF SOFT MATTER THEORY GROUP | Undergraduate Researcher

2013 – 2015 | Tampa, Fl

Worked with Professors Robert S. Hoy and Nikos Ch. Karayiannis to explain poorly understood properties of polymeric systems via modeling & simulation

Developed and implemented c++ programs for data analysis.

PUBLICATIONS

ISOLATION BY DISTANCE IN POPULATIONS WITH LONG-RANGE DISPERSAL

Tyler Smith and Daniel Weissman
In Preparation (2019)

ROLE OF SPATIAL AVERAGING IN MULTICELLULAR GRADIENT SENSING

Tyler Smith, Sean Fancher, Andre Levchenko, Ilya Nemenman and Andrew Mugler
Physical Biology (2016)

EFFECT OF CHAIN STIFFNESS ON THE COMPETITION BETWEEN CRYSTALLIZATION AND GLASS-FORMATION IN MODEL UNENTANGLED POLYMERS

Hong T. Nguyen, Tyler B. Smith, Robert S. Hoy, and Nikos Ch. Karayiannis
Journal of Chemical Physics (2015)