

Daniel R. Carmody

CONTACT INFORMATION	<i>Github:</i> https://github.com/dcarmod2 <i>E-mail:</i> dcarmody.gm@gmail.com <i>LinkedIn:</i> www.linkedin.com/in/dcarmath <i>Phone:</i> (219) 928-6154
EDUCATION	Ph.D. Mathematics University of Illinois Urbana-Champaign , 2020 B.S. Mathematics Indiana University , 2014
TECHNICAL SKILLS	Python (pandas, numpy, sklearn, tensorflow, networkx, ...), C, SQL, \LaTeX , Github, topological data analysis, homotopy theory
APPLIED PROJECTS	Susan C. Morisato IGL Scholar University of Illinois, Urbana-Champaign Summer 2020 <ul style="list-style-type: none"><input type="checkbox"/> Improved time series classification accuracy by 5% using techniques from Riemannian geometry.<input type="checkbox"/> Investigated discriminative connections in the functional neural connectome to help identify pathways responsible for tinnitus. Research Assistant University of Illinois, Urbana-Champaign Spring 2020 <ul style="list-style-type: none"><input type="checkbox"/> Visualized emergent traffic beltways in Manhattan using techniques from topological data analysis. MARTIANS Intern Sandia National Labs Summer 2019 <ul style="list-style-type: none"><input type="checkbox"/> Laid entire pipeline from data preprocessing to binary classification with an RNN for RNA-seq data.<input type="checkbox"/> Predicted 2 major conflicts weeks in advance in a video game data set using techniques from topological data analysis. NSF PI4 Program Intern University of Illinois, Urbana-Champaign Summer 2018 <ul style="list-style-type: none"><input type="checkbox"/> Developed city-wide measures of traffic risk using publicly available data from 14 million yellow taxi trips.
DATA SCIENCE PUBLICATIONS	Published Carmody D, Sowers R. "Tradeoffs between Safety and Time: A Scale-Free Routing View," <i>Transp. Res. Part C: Emerg. Technol.</i> , 108:357-377, 2019. Submitted Carmody D, Sowers R. "A Topological Analysis of Manhattan Traffic Congestion via Persistent Homology". (submitted to J. Phys. Complex)
MENTORING	Graduate Mentor Illinois Geometry Lab Spring 2018, Fall 2018, Fall 2019 <ul style="list-style-type: none"><input type="checkbox"/> Mentored a semester-long project on object classification in videos using the YOLO convolutional neural net.<input type="checkbox"/> Mentored a semester-long project on using non-negative matrix factorization and geoploting to discover patterns in 1 GB of San Francisco parking data.<input type="checkbox"/> Mentored a semester-long project on mathematical visualization using the javascript library three.js.