

Student Research Talks (StReeTs)

George Mason University

Automata and Lamplighter groups

Holly Miller
George Mason University

Abstract

Automata (more accurately synchronous transducers) are used in computer science to model machines with distinct states of operation. These constructs can also be used to generate semigroups by treating their states as endomorphisms on the regular tree generated by the alphabet of the machine. Lamplighter groups, the restricted right wreath products of finite groups by the integers, turn out to be closely connected to groups generated by automata.

In this talk, we thoroughly discuss how automata can generate semigroups, explain the connection between lamplighter groups and groups generated by automata, and touch on generalizations of the lamplighter group that can be arrived at through automata.

Date: Friday, May 12th

Time: 2:30pm–4:30pm

Place: Exploratory Hall 4208

Pizza will be served at the presentation.

For further information or for special accommodations (including dietary restrictions), please contact Michael Merkle or Aleyah Dawkins via email at mmerkle@gmu.edu or adawkin@gmu.edu by Thursday.