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Elliot Cartee

Education

2014–Present **P.h.D., Mathematics**, *Cornell University*, Expected graduation date: May 2020.
2014–2017 **M.S., Mathematics**, *Cornell University*.
2011–2014 **B.A., Mathematics**, *Cornell University*.

Awards

2018-2019 Robert J. Bättig Graduate Prize for Excellent Achievements in Research
2011-2014 Pauline and Irving Tanner Dean's Scholar

Research Experience

2014–Present **Cornell University**, *Graduate Student*, Advisor: Alexander Vladimirsky.
Department of Mathematics

Fall 2018 **Princeton University**, *Visiting Student Research Collaborator*.
Operations Research and Financial Engineering

Publications

E. Cartee and A. Vladimirsky, *Control-theoretic models of environmental crime*, accepted by SIAM Journal on Applied Mathematics.

E. Cartee, L. Lai, Q. Song, and A. Vladimirsky, *Time-dependent surveillance-evasion games*, 2019 IEEE CDC, Nice, France, pp. 7128-7133, 2019..

E. Cartee and A. Vladimirsky, *Anisotropic challenges in pedestrian flow modeling*, Communications in Mathematical Sciences, 16(4), 1067-1093 (2018).

L. N. Virgin, R. Plaut, and E. Cartee, *The effect of gravity on a slender loop structure*, Nonlinear Dynamics, Volume 1 (pp. 185-190). Springer, Cham (2016).

L. N. Virgin, R. Plaut, and E. Cartee, *Adjacent equilibria in highly flexible upright loop on rigid foundation*, Experimental Mechanics, 55(6), 1191-1197 (2015).

S. Khan, J. Johnson, E. Cartee, and Y. Yao, *Global regularity of chemotaxis equations with advection*, Involve, a Journal of Mathematics, 9(1), 119-131 (2015).

Presentations

Upcoming Presentations

May 11th **Quantifying and managing uncertainty in Piecewise-Deterministic Markov Processes**, *Scientific Computing and Numerical Analysis seminar*, Cornell University.

Past Presentations

Dec. 2019 **Time-dependent Surveillance-Evasion Games**, *IEEE Conference on Decision and Control 2019*, Nice, France.

October 2019 **Modeling Environmental Crime in the Presence of Ground Patrols (Poster)**, *NSF Algorithms for Threat Detection Workshop*, George Washington University.

October 2019 **Control-Theoretic Models of Environmental Crime**, *Doctoral Consortium on Computational Sustainability*, Carnegie Mellon University.

October 2019 **Control-Theoretic Models of Environmental Crime (Poster)**, *3rd AFOSR Workshop on Computational Control*, Monterey, CA.

Sept. 2019 **Control-Theoretic Models of Environmental Crime**, *Scientific Computing and Numerical Analysis seminar*, Cornell University.

July 2019 **Surveillance-Evasion Mean Field Games**, *International Congress on Industrial and Applied Mathematics*, Valencia, Spain, (Invited mini-symposium talk).

April 2019 **Time-dependent Surveillance-Evasion Games**, *Applied Math Days 2019*, Rensselaer Polytechnic Institute.

March 2019 **Anisotropic Interactions in Pedestrian Flow Modeling**, *New York State Regional Graduate Mathematics Conference*, Syracuse University.

October 2018 **Surveillance-Evasion Mean Field Games**, *NSF Algorithms for Threat Detection Workshop*, American University.

August 2017 **Aniostropic Challenges in Pedestrian Flow Modeling**, *Mean Field Games Workshop*, UCLA (IPAM).

April 2015 **Models of Pedestrian Flow**, *Scientific Computing and Numerical Analysis seminar*, Cornell University.

Teaching Experience

Cornell University

Fall 2019 **Head TA**, *MATH 2940: Linear Algebra for Engineers*.

Spring 2019 **Head TA**, *MATH 2930: Differential Equations for Engineers*.

Summer 2018 **REU Graduate Student Mentor**.

Fall 2017 **Head TA**, *MATH 2930: Differential Equations for Engineers*.

Spring 2017 **Instructor**, *MATH 1110: Calculus I*.

Fall 2016 **Head TA**, *MATH 2930: Differential Equations for Engineers*.

Spring 2016 **TA**, *MATH 2930: Differential Equations for Engineers*.

Fall 2015 **Grader**, *MATH 4250: Differential Equations and Numerical Analysis*.

Seminars Regularly Attended

Cornell **Scientific Computing and Numerics Seminar**.

Cornell **Center for Applied Math Colloquium**.

Princeton **Program in Applied and Computational Mathematics Colloquium**.

Princeton **Operations Research and Financial Engineering Colloquium**.