Mark Gillespie

Curriculum Vitae

Education

2018-present **PhD Computer Science**, *Carnegie Mellon University*, Pittsburgh.
Advisor: Keenan Crane. Topics: geometry processing, computer graphics

2014–2018 **B.S. Computer Science, Mathematics**, *California Institute of Technology*, Pasadena, Double major. GPA: 4.1.

Publications

Feng, Nicole, Mark Gillespie, and Keenan Crane (2023). "Winding Numbers on Discrete Surfaces". In: *ACM Trans. Graph.* XX.X.

Liu, Derek et al. (2023). "Surface Simplification using Intrinsic Error Metrics". In: *ACM Trans. Graph.* XX.X.

Gillespie, Mark, Nicholas Sharp, and Keenan Crane (2021). "Integer Coordinates for Intrinsic Geometry Processing". In: *ACM Trans. Graph.* 40.6.

Sharp, Nicholas, Mark Gillespie, and Keenan Crane (2021). "Geometry Processing with Intrinsic Triangulations". In: SIGGRAPH '21.

Gillespie, Mark, Boris Springborn, and Keenan Crane (2021). "Discrete Conformal Equivalence of Polyhedral Surfaces". In: *ACM Trans. Graph.* 40.4.

Work and Research Experience

August 2018-Present **Graduate Researcher**, *Carnegie Mellon University*.
Advisor: Keenan Crane

Summer 2017 **Arthur R. Adams Undergraduate Researcher**, *California Institute of Technology*.
Mentor: Peter Schröder. Implemented an energy-preserving integrator for 2D MHD on grids and proved its conservation properties

Summer 2016 **Arthur R. Adams Undergraduate Researcher**, *California Institute of Technology*.
Mentor: Mathieu Desbrun. Developed an algorithm for computing polymer conformation using dimensionality reduction techniques.

Jan. 2016 – 2017 **Undergraduate Researcher**, *California Institute of Technology*.
Mentor: Alan Barr. Explored applications of interval analysis to root-finding and solving differential equations

Summer 2015 **Software Engineering Intern**, *Google*.
Prototyped new credit card entry interface for Android library. Developed in Java

Talks

Jul. 2023 **Intrinsic Triangulations in Geometry Processing**, *TU Berlin SFB TRR 109 Colloquium*.

Apr. 2022 **Discrete Conformal Equivalence of Polyhedral Surfaces**, *UCSD Pixel Cafe*.

+1 (908) 477 1822 • mgillesp@cs.cmu.edu
www.markjgillespie.com

Nov. 2021 **Integer Coordinates for Intrinsic Geometry Processing**, *ACM SIGGRAPH Asia 2021*.

Aug. 2021 **Discrete Conformal Equivalence of Polyhedral Surfaces**, *ACM SIGGRAPH 2021*.

Aug. 2021 **Geometry Processing with Intrinsic Triangulations**, *ACM SIGGRAPH Courses (SIGGRAPH 2021)*.

June 2021 **Geometry Processing with Intrinsic Triangulations**, *International Meshing Roundtable Courses (IMR 2021)*.

Awards/Fellowships

2019-2022 **NSF Graduate Research Fellowship**

2016-2017 **Arthur R Adams SURF Fellow**

2017 **SIGGRAPH ACM Turing Award Celebration Grant**

2016 **William Lowell Putnam Mathematics Competition** *31 points (rank: 365/3214)*

Service

Reviewer SIGGRAPH (2019, 2022, 2023), SIGGRAPH Asia (2022), Computer-Aided Design (2023), Transactions on Visualization and Computer Graphics (2023), Computers & Graphics (2021)

Departmental Organizer, Graphics Seminar (2020-2021); Organizer, Graphics Reading Group (2022-2023)

Programming Languages

C/C++, Python, Java, Mathematica, Matlab, Haskell, Ocaml, LaTeX