Ethan Lu

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Education

Aug 2018-Present — Bachelor's of Science, **Carnegie Mellon University**, Pittsburgh
Major in Mathematical Sciences, Minor in Computer Science
Current GPA: 4.0/4
Relevant Classes: Introduction to Undergraduate Research, Math Studies Algebra/Analysis I, Great Theoretical Ideas in Computer Science, Vector Analysis, Matrix Theory

Aug 2014 - May 2018 — Non-Degree Seeking, **University of Nevada, Reno**
GPA: 4.0/4
Relevant Classes: Introduction to Analysis I, Differential Equations, Linear Algebra, Statistics 352

Aug 2013 - May 2018 — High School Diploma at **The Davidson Academy of Nevada**, Reno

Work and Research Experience

April 2019-Present — Research Assistant at The Geometry Collective (CMU).
Research in computer graphics and geometry under the supervision of Professor Keenan Crane, developing algorithms and optimization techniques for intrinsic geometry processing. Supported by NSF Grant 1717320.

Jun 2017 & 2018 — Summer Mathematics Research Training Camp at Texas A&M University
High school research camp led by Professors Kuchment, Zelenko, and Shatalov.
2017: Galois Theory, finite fields, Reed-Soloman error correcting codes
2018: Application of Fourier Transform to Medical Imaging, Radon Transform

Sept 2016-Jan 2018 — Tutor at University of Nevada, Reno Math Center
Hired to tutor UNR students in all available undergraduate math, statistics, and physics courses. Organized, created, and led comprehensive review sessions for midterms/finals.

Jul-Aug 2017 — Math Faculty at A-Star Math Camps, Santa Clara, CA
Created, developed, and taught intensive 4-block 3-week curriculum to promote problem solving and competition skills. Revised and rewrote existing Number Theory curriculum.

Publications

1. E. Fang, J. Jenkins, Z. Lee, D. Li, Ethan Lu, S. Miller, D. Salgado, J. Siktar, *Central Limit Theorems for Compound Paths on the 2-Dimensional Lattice*, to appear in *The Fibonacci Quarterly*. https://arxiv.org/abs/1906.10645

Projects

Nov 2018 — [ML Finalist] HackPrinceton 2018: styledev.rt
https://github.com/elu00/styledev.rt
Implemented real-time style transfer through application to game assets.

Sept 2018 — HackCMU 2018: viz.ml
https://github.com/TheNumbat/viz.ml
Implemented Barnes-Hut TSNE algorithm for use in 3D Visualization of TSNE-Style datasets.

Interests and Activities

Mathematics

- Volunteer at the CMIMC (CMU), PUMaC (Princeton), and HMMT (Harvard/MIT) competitions.
- Putnam Exam Top 500 Scorer

Skills

- Languages: C/C++, Python, C#, Julia, R, LaTeX.
- Software experience: Matlab, Cinema 4D, Vegas Pro, OpenSCAD, Adobe After Effects/Premier.