

# Alexander Raistrick

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## EDUCATION

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### Princeton University

September 2021 – present

Ph.D Candidate, Department of Computer Science

Advisor: Jia Deng

### University of Michigan

September 2017 – April 2021

BSE Computer Science, Minor in Mathematics

Overall GPA: 3.9/4.00. CS GPA 3.95/4.0, Math Minor 4.0/4.0

## RESEARCH INTERESTS

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Synthetic Data for Computer Vision, 3D Vision, Generative AI

## PUBLICATIONS

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- [1] **Alexander Raistrick\***, Karhan Kayan\*, Lingjie Mei\*, David Yan, Yiming Zuo, Beining Han, Hongyu Wen, Meenal Parakh, Stamatis Alexandropoulos, Lahav Lipson, Zeyu Ma, and Jia Deng. [Infinigen Indoors: Photorealistic Indoor Scenes using Procedural Generation](#). *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- [2] Zeyu Ma, **Alexander Raistrick**, Lahav Lipson, and Jia Deng. [View-Dependent Octree-based Mesh Extraction in Unbounded Scenes for Procedural Synthetic Data](#), ArXiv 2023.
- [3] **Alexander Raistrick\***, Lahav Lipson\*, Zeyu Ma\*, Lingjie Mei, Mingzhe Wang, Yiming Zuo, Karhan Kayan, Hongyu Wen, Beining Han, Yihan Wang, Alejandro Newell, Hei Law, Ankit Goyal, Kaiyu Yang, and Jia Deng. [Infinite Photorealistic Worlds Using Procedural Generation](#). *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.
- [4] **Alexander Raistrick**, Nilesch Kulkarni, and David F. Fouhey. [Collision Replay: What Does Bumping Into Things Tell You About Scene Geometry?](#) *British Machine Vision Conference (BMVC)*, 2021 (**Oral**).
- [5] [MRAT: The mixed reality analytics toolkit](#). Michael Nebeling, Maximilian Speicher, Xizi Wang, Shwetha Rajaram, Brian D Hall, Zijian Xie, **Alexander R. E. Raistrick**, Michelle Aebbersold, Edward G Happ, Jiayin Wang, et al. *Conference on Human Factors in Computing Systems (CHI)*, 2020 (**Best Paper**).

## AWARDS AND HONORS

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**Exemplar Mentor Award for Grad. Students and Postdocs** - Princeton University - Spring 2024

**Graduate Student Teaching Award** - Princeton University - Fall 2023

**Best Paper Award** - “MRAT: The Mixed Reality Analytics Toolkit” - CHI 2020

**Summa Cum Laude** - University of Michigan, 2021

**EECS Scholar Award** - University of Michigan

**James B. Angell Scholar** - University of Michigan

## EXPERIENCE

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- Ph.D. Student — Princeton Vision and Learning Lab** September 2021 – present  
– Working on synthetic data for 3D vision and robotics. Advised by Prof. Jia Deng.
- Undergraduate Research Assistant — Fouhey AI Lab** April 2020 – September 2021  
– Researched single-view indoor floorplan reconstruction using weak supervision from robot collisions (4). Advised by Prof. David Fouhey.
- Software Engineering Intern — Microsoft** May – July 2019  
– Implemented ML models for financial transaction categorization and tax audit failure prediction.
- Summer Research Assistant — Michigan Information Interaction Lab** August 2018 – April 2019  
– Designed clustering algorithms and visualization for augmented reality interaction research (5). Advised by Prof. Michael Nebeling.
- Data Science Intern — NquiringMinds** July – August 2018  
– Researched methods for anomaly detection on large maritime trajectory datasets, to identify smuggling and human trafficking.
- Summer Research Assistant — U-M MAVRIC Lab,** May – July 2018  
– Engineered an autonomous vehicle interaction simulator for use in HCI research.

## OTHER PROJECTS

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- “Maximal Munch” Internet Search Engine from Scratch,** U-M EECS 398 January – April 2019  
– Architected a distributed web crawler from scratch in C++ which indexed over 140 million web pages, and a distributed indexer / search engine which served results in  $\leq 0.3s$  for most queries.
- Investigating Distributed Async SGD,** Princeton COS598D (Systems & ML) May 2022  
– Investigated training speed & stability of asynchronous parameter-server stochastic gradient descent under varying communication constraints.

## TEACHING

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- Princeton COS 324 — Introduction to Machine Learning (**Grad. Teaching Award**) 2023
- Princeton COS 529 — Advanced Computer Vision Fall 2022
- U-M AI4ALL — Summer Outreach Program Summer 2021
- U-M EECS 280 — Programming and Intro Data Structures Winter 2020, Fall 2020
- U-M EECS 398 — System Design of a Search Engine Fall 2019