Ruyu Yan

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EDUCATION

Princeton University
Ph.D. in *Computer Science*   Expected May 2028
Research Interest: AI for Content Creation, Computational Photography

Cornell University, College of Engineering   Aug 2019 - May 2023
B.S. in *Computer Science (Magna cum Laude)* | GPA: 3.96 | Dean's List   Ithaca, New York
Relevant Coursework: OOP and Data Structures, Functional Programming, Analysis of Algorithm, Computer Vision, Intro to Machine Learning, Computer System Organization, Interactive Computer Graphics, Computation Content Creation

WORK EXPERIENCE

Software Engineering Intern at Google Chat iOS   Jun - Aug 2023
Google   Sunnyvale, California
- Developed outbound sharing feature for the Chat iOS App that allows users to share message from Chat to other Apps.
- Prototyped three UI designs of the sharing feature and interfaced with UX team for the final decision.
- Designed service API with publisher-subscriber pattern for downloading files and authorizing media streaming.
- Integrated data privacy protection and user-facing error handling to the outbound sharing feature.

Full-time Research Assistant at Abe Davis's Lab   Aug 2022 - Jan 2023
Cornell University   Ithaca, New York
- Led the project of *Chromaticity Gradient Curves*, an image/video processing method for performing edge-aware color tone mapping with a user-controlled notion of color contrast.
  - Researched color temperature approximation algorithm and how it relates to perceptual brightness, and employed it on extending the perceived dynamic range of HDR images.
  - Developed multi-pass pipeline for efficient image and video processing using WebGL, OpenGL, and Halide.
- Supported several projects on digital agriculture and image synthesis.

Summer Research Fellow at Summer Geometry Initiative   Jul - Aug 2022
Massachusetts Institute of Technology   Remote
- *Making Deep Implicit Fields Local*: Studied recent literature on implicit neural representations of 3D geometry, and experimented with different auto-decoder-based architectures to extend the expressiveness of local details for large scenes.
- *SE(3) Invariant and Equivariant Neural Network for Geometry Processing:* Implemented SE(3) invariant point cloud classifier with PyTorch by augmenting the vanilla PointNet architecture with frame averaging operator.

Course Staff at Department of Computer Science   Aug 2020 - May 2023
Cornell University   Ithaca, New York
- *Functional Programming and Data Structure:* Advised student teams on their final projects of OCaml programming. Provided suggestions on collaborative programming practice, coding style, and interface design.
- *Computer Vision*: Posed homework questions on image processing and supervised homework grading.

RELEVANT PROJECTS

ReCapture: AR-Guided Time-lapse Photography   Jul 2021 - Nov 2022
First Author
- Researched an Augmented-Reality-based image sampling system for time-varying appearances, which helps the user create cool time-lapse video with sparse-sampled images using their mobile phone.
- Released *ReCapture App*, an iOS implementation of time-lapse photography system, which gained thousands of users.
- Created a web interface using React and D3.js for visualizing image sample distribution and preview time-lapse videos.
- Full paper published at The ACM Symposium on User Interface Software and Technology (UIST) 2022.

Real-time 3D Renderer for Chinese Ink Painting   Apr - May 2022
Graduate Course Project
- Built a rasterization pipeline for rendering 3D scenes in the style of Chinese ink painting with interactive camera control.
- Created a novel brush stroke detection and painting algorithm for adaptively drawing the silhouette and interior of objects, which realistically simulates the effects of ink diffusion and varying stroke width.

SPECIALIZED SKILLS

Programming Languages: Python, Swift, C++, TypeScript, OCaml, Java, MATLAB, GLSL, Bash
Engineering Skills: 3D graphics programming, iOS development, Data analysis and visualization