

# Eric Nai-Li Chen

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## Education

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| <b>MS</b> | <b>Brown University</b> , Computer Science<br>Providence, RI<br><i>Advisor: Jeff Huang</i> | Sept 2023 – May 2025  |
| <b>BS</b> | <b>UCLA</b> , Computer Science<br>Mathematics Minor<br>Los Angeles, CA<br><i>GPA: 3.84</i> | Sept 2018 – June 2023 |

## Publications

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| <b>L.ink: Procedural Ink Growth for Controllable Surprise</b><br><b>Eric Nai-Li Chen</b> , Joshua Kong Yang, Jeff Huang, Tongyu Zhou<br>Proc. ACM User Interface Software and Technology (UIST '25)<br><a href="https://doi.org/10.1145/3746059.3747702">10.1145/3746059.3747702</a>                            | Sept 2025  |
| <b>L.ink: Illustrating Controllable Surprise with L-System Based Strokes</b><br><b>Eric Nai-Li Chen</b> , Tongyu Zhou, Joshua Kong Yang, Jeff Huang<br>Extended Abstracts ACM Human Factors in Computing Systems (CHI EA '25)<br><a href="https://doi.org/10.1145/3706599.3720069">10.1145/3706599.3720069</a>  | April 2025 |

## Experience

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| <b>Adobe</b> , Research Scientist Intern<br>Mentors: Li-Yi Wei, Rubaiat Habib Kazi<br><ul style="list-style-type: none"><li>Designing generative tools for 2D special effects animation</li></ul>   | San Jose, CA<br>June 2025 – Sept 2025      |
| <b>Brown HCI Lab</b> , Research Assistant<br>Advisor: Jeff Huang, Mentor: Tongyu Zhou<br><ul style="list-style-type: none"><li>Personally invented, implemented, and deployed L-ink: an L-system vector drawing tool empowering artists to create animated organic structures with a single stroke; see <i>first-author publications in UIST '25 and CHI EA '25</i></li><li>Designed direct-manipulation rule editor for intuitive L-system control</li><li>Invented hand-drawn stamp feature to extend L-system's expressive capability</li><li>Conducted user study investigating how controllability &amp; surprise in procedural tools impacts creative workflow of artists</li></ul> | Providence, RI<br>Feb 2024 - May 2025      |
| <b>NASA Academic Mission Services</b> , Data Science Intern<br>Mentors: David Bell, Aditya Das, Milad Memarzadeh<br><ul style="list-style-type: none"><li>Led multi-organizational project creating wildfire machine learning models in collaboration with Civil Air Patrol captain, NASA research scientist, and USRA RIACS Director</li><li>Aggregated data from 600,000 flights across 345 US airports to train end-to-end machine learning pipeline predicting flight delays</li><li>Presented findings in 3 <i>first-author research posters</i> at NASA Ames poster symposium</li></ul>   | Mountain View, CA<br>June 2020 - Sept 2021 |

## Invited Talks

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**Continuous Creative Channels Between Artist and Medium**  
UCSD Design Lab

Oct 2025

## Selected Projects

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### **SplatBrush: XR Painting with Gaussian Splats**

- Designed WebXR palette and brush interface for interactive 3D painting with Gaussian textures optimized from real-world materials
- Gathered multi-view material dataset using custom capture rig

### **Differentiable Rendering of Signed Distance Fields**

- Implemented Wang et al.'s "A Simple Approach to Differentiable Rendering of SDFs"
- Created animated visualizations of gradient descent in action by optimizing lights, materials, object transformations, and freeform geometry

### **Hyacinth Labyrinth: A Procedural Hedge-Maze Game**

- Built custom L-system engine in Blender and defined configurable JSON format with tunable stem radius, leaf size, branch angle, tessellation levels, and pruning

### **Video Analogies**

- Implemented patch-based style transfer from images to videos, extending Hertzmann et al.'s "image analogies"

### **MPC: Productive Beauty Without Trust**

- Authored illustration for 10th Heidelberg Laureate Forum's Intercultural Science-Art Project, with a whimsical interpretation of secure multi-party computation as fruit hybridization

## Selected Coursework

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**Brown University:** Computer Graphics, Advanced Computer Graphics, Computational Photography, Computer Vision for Graphics & Interaction, Deep Learning, Interaction Design

**Rhode Island School of Design:** Drawing with Computers

**UCLA:** Software Engineering, Programming Languages, Formal Languages & Automata Theory, Artificial Intelligence, Machine Learning, Database Management Systems, Computer Networks, Operating Systems, Algorithms & Complexity, Real Analysis, Set Theory, Category Theory

## Skills

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**Languages:** JavaScript/TypeScript, HTML/CSS, C/C++, Python

**Technologies:** React, Three.js, OpenGL, TensorFlow, Express, Flask

**Other:** Public speaking, Leadership, 4th Degree Black Belt and ATA Taekwondo World Champion