

Daniel Yuan

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EXPERIENCE

- Full Stack Developer | Reconstruct Inc.** **Jul 2018 - Present**
Menlo Park, CA
- Created tools to help users intuitively align BIM, and pointcloud models
 - Enhanced a collaborative tool with new functionality that allow users to annotate and label objects in a 3D Viewer
 - Refactored existing ES6 code into Vue components to reduce development time and increase code reusability for future features
- Software Engineer | Lumenco** **Jan 2018 - Jun 2018**
Champaign, IL
- Constructed architecture for a Java application for previewing lenticular animation effects
 - Developed method for animating 2D lenticular effects as a function of 3D transformations
 - Used the MVC model for easily expandable codebase for future additions
- Full Stack Developer | Reconstruct Inc.** **May 2017 - Aug 2017**
Champaign, IL
- Redesigned entire frontend/backend architecture for a new web-based file manager to efficiently render and manipulate over 50,000 HD images
 - Optimized backend/database interactions for internal API calls to achieve 3x speedup in page loading times
 - Analyzed and patched codebase for system exploits and potential security vulnerabilities
- Computer Vision Engineer | Reconstruct Inc.** **Jan 2017 - May 2017**
Champaign, IL
- Benchmarked structure from motion algorithms for pointcloud quality and pipeline speed
 - Automated collection and organization of benchmark metrics for 3D reconstructions
- Full Stack Developer | Reconstruct Inc.** **May 2016 - Aug 2016**
Champaign, IL
- Implemented local caching for 3D reconstructions for a 6x reduction in page loading times
 - Optimized bandwidth consumption on servers by caching assets from AWS S3
 - Automated progress report generation from construction Gantt charts to an Excel report

RESEARCH

- Derek Hoiem Computer Vision Group**
- FEATS: Synthetic Feature Tracks for Structure from Motion Evaluation** **Aug 2017 - Mar 2018**
Champaign, IL
- Joseph DeGol, Jae Yong Lee, Rajbir Kataria, Daniel Yuan, Timothy Brett, Derek Hoiem*
Published in: 3DV 2018 - International Conference on 3D Vision
- Formulated a model for simulating feature extraction and matching from existing datasets to evaluate structure from motion algorithms
 - Designed a workflow for comparing simulated and actual reconstruction results
- Structure from Motion refinement using GPS data** **Aug 2016 - Feb 2017**
Champaign, IL
- Modified OpenMVG to extract Cartesian coordinates from GPS data for feature points
 - Implemented new algorithm to refine camera poses during bundle adjustment

PROJECTS

- Evolution Gym** **Jun 2017 - Present**
Champaign, IL
- Created environment to simulate and benchmark different reinforcement learning methods, including Q-learning, Monte Carlo, and Temporal Difference algorithms.
 - Implemented randomly seeded terrain generator for tile-based survival environments
- Global Max** **Mar 2019**
Champaign, IL
- Implemented genetic algorithm for solving global maxima problems, which yielded a 6x speed improvement compared to a brute-force approach
 - Designed a procedure for generating randomized n-term, m-dimensional polynomials as global extrema optimization problems

EDUCATION

- UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN** **Urbana, IL**
- Bachelor of Science in Electrical Engineering May 2018
- Minor in Computer Science GPA: 3.54

Relevant Coursework:

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| CS 440 - Artificial Intelligence | ECE 470 - Robotics Laboratory |
| CS 420 - Parallel Programming | ECE 420 - Embedded DSP Laboratory |
| CS 225 - Data Structures | ECE 385 - Digital Systems Laboratory |

Languages: Python, C++, C, Java, Javascript, HTML, CSS, MATLAB