Josh Carstens

Image capture technology enthusiast

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EDUCATION

Rochester Institute of Technology, Rochester NY — *Motion Picture Science, BS*

AUGUST 2018 - MAY 2022

GPA: 3.52

Motion picture science is a unique interdisciplinary major which prepares students for work in the field of digital cinema and image capture, either in research engineering roles or in technical post-production positions.

EXPERIENCE

Center for Imaging Science at RIT, Rochester NY — *Research Assistant*

SEPTEMBER 2020 - PRESENT

Formatting and analysis of radiometric data collected from wildfire experiments under the supervision of Dr. Robert Kremens.

Alfred University, Alfred NY — *Video editor*

JANUARY 2018 - JUNE 2018

Edited 2-3 minute promotional videos for Alfred University's Art Force 5 initiative.

PROJECTS

Image processing programs, C++ repository

A set of OpenCV-based imaging science applications and implementations written in C++ using Eigen3 and Boost libraries. Includes implementations of several concepts and algorithms such as Harris and FAST feature detection, character recognition, DFT/FFT, and pixel remapping. (GitHub available on my website)

Small object 3D imaging array, Freshman Imaging Project

Worked alongside other students to design an imaging system from scratch used to assist the Seneca Park Zoo with automatically capturing 3D models of unknown species of insects from Madagascar. Made crucial decisions involving the camera modules and lenses used on the final array, as well as writing the script to run the image output through modelling software. Presented at Imagine RIT 2019.

RELEVANT COURSES

Image Processing and Computer Vision I & II (in progress); Probability & Statistics for Imaging; Linear & Fourier Methods of Imaging; Fundamentals of Color Science; Vision & Psychophysics; Radiometry.

EXTRACURRICULAR

Society of Motion Picture and Television Engineers Student Chapter - Member

Imaging Science Club - Member

SKILLS

Programming - familiar with C++, Python, MATLAB, batch scripting, some PureData and Perl.

3D model construction - familiar with the fundamentals of photogrammetry and operation of software packages like Agisoft Metashape and Blender.

Data science - familiar with imaging and statistics-related Python packages like NumPy, SciPy, pandas, and OpenCV. Also used to working with Jupyter notebooks.

OS operation - very familiar with Windows-based machines (including proficiency with Visual Studio), generally familiar with OS X and Linux (including operation of Unix shells like bash, as well as secure shell).

Web development - familiar with HTML and CSS, front-end frameworks like Bootstrap, and DNS configuration. Loosely familiar with JavaScript, PHP, and Apache.

Media production - familiar with NLEs such as Premiere Pro and Davinci Resolve, After Effects, Pro Tools, and iZotope plugins. On-set experience with Sony FS5 and Arri SR3 camera systems, as well as audio preamps and mixers.