

# Edward (E.J.) Mungovan

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## ABOUT

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My background spans physics and cinematography, but the throughline is the same: build trust in the data before acting on it. I'm drawn to work at the intersection of capture technology, sensor analysis, and performance evaluation, where a well-calibrated measurement directly shapes how a product is designed and used effectively. I learn technical systems quickly, replicate processes with precision, and keep the end user at the center of every analysis.

## SKILLS

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**Programming** Python · JavaScript · MATLAB · LaTeX · HTML/CSS · Git/GitHub

**Machine Learning / AI** PyTorch · TensorFlow · scikit-learn · CycleGAN · Pix2Pix · Claude API

**Computer Vision** OpenCV · SSIM/PSNR · L1/L2 evaluation · PSF modeling · deblurring pipelines · browser inference

**Systems / Hardware** Raspberry Pi 5 · PiCam · TensorFlow Lite · SolidWorks · 3D printing · hardware/software troubleshooting

## PROJECTS & TECHNICAL WORK

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### Optics-Informed Imaging Pipeline: ML Deblurring & Performance Evaluation

*Salt Lake City, UT*

*Project Lead / Student Engineer*

*Jan 2024 – Present*

- Developed a hybrid CycleGAN–Pix2Pix deblurring pipeline (Python/TensorFlow) for MNIST/FashionMNIST; achieved up to **SSIM  $\approx$  0.74** and **PSNR  $\approx$  15 dB** on test sets.
- Designed robustness tests as optics-informed experiments, sweeping Gaussian blur ( $\sigma = 0$  to 50) as a proxy for optical point spread function degradation and evaluating via SSIM/PSNR/L1/L2 to characterize system behavior across the full failure envelope.
- Deployed on **Raspberry Pi 5**; designed and **3D-printed enclosure iterations** to integrate lens + compute; produced a setup/troubleshooting runbook for repeatable builds and handoff.

### Taskbuddy – Product Specification & Concept Development

*Salt Lake City, UT*

*Product Designer / Systems Architect*

*2025 – 2026*

- Authored a full production and engineering specification for a minimalist consumer hardware device: defined interaction model, hardware architecture (MCU, Memory LCD, BLE, haptics), firmware tradeoffs, and a three-stage prototyping roadmap.
- Applied constraint-driven design to document input mapping, power strategy, and mechanical docking; established a single testable success criterion per prototype stage.

## EXPERIENCE

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### TheDonFilms Inc.

*Salt Lake City, UT*

*Director of Photography / Technical Director*

*Jan 2020 – Present*

- Developed systems thinking across the full capture pipeline (requirements, equipment configuration, signal monitoring, and data handoff), managing technical complexity across 40+ productions under deadline.
- Designed content management systems (file organization, delivery workflows, and editorial review pipelines) that reduced initial processing overhead and were adopted as permanent production standards across all subsequent campaigns.

### Snowbird Ski & Summer Resort

*Snowbird, UT*

*A/V Live Event Technician*

*2019 – 2020*

- Deployed and operated full A/V systems for live events: coordinated staging, audio, projection, and dedicated wireless networks; diagnosed signal and connectivity failures in real time under zero-failure-tolerance conditions.

### Apple Inc.

*Murray, UT*

*Technical Specialist*

*2017 – 2018*

- Trained in Apple's structured diagnostic methodology and applied it at high throughput, triaging and resolving 30+ customer cases per shift, demonstrating consistent, repeatable root-cause isolation across hardware, software, and network issues.
- Developed professional-grade client communication skills: translating complex technical findings into clear, actionable next steps for non-technical stakeholders, earning 95%+ positive survey scores.

### The Law Offices of Patrick Christoff

*Beverly Hills, CA*

*Courtroom Hearing Representative*

*2024 – Present*

- Developed structured argumentation and adversarial reasoning skills: building a defensible position from evidence, anticipating counterarguments, and delivering organized summaries that drive clear decisions under scrutiny.

## EDUCATION

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### University of Utah

*Salt Lake City, UT*

*B.S. Physics | B.A. Film Production (Cinematography)*

*May 2020 / Dec 2025*

- *Selected Coursework:* Foundations of Modern Optics; ECE Computational Photography; Hi-Fi Audio & Video Physics; Differential Equations & Linear Algebra; Electrostatics; Quantum Mechanics