# ADHAM ELARABAWY

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## EDUCATION

**University of California, Berkeley**
***Electrical Engineering & Computer Science** | **Bachelors of Science** | **Regents Scholar***

## EXPERIENCE

**Harvey AI** *Legal AI Startup* — San Francisco, CA
***Machine Learning Research Scientist*** — Jul 2023 - Present
- LLM Research + Engineering.

**SCALE AI** *AI Startup* — San Francisco, CA
***Machine Learning Research Engineer*** — May 2022 - Jul 2023
- Architected Scale AI Forge from inception.
- Lead ML Research for context-enriching diffusion models for e-commerce.
- Large Image Diffusion + Language Models Alignment Research.

**GOOGLE** *Information Technology* — Mountain View, CA
***Machine Learning Intern*** — Feb 2022 - May 2022
- Machine Learning on Search Team.

**UC Berkeley Research Lab** *Prof. Miki Lustig Lab* — Berkeley, CA
***Researcher*** — Aug 2021 - Apr 2023
- Developed novel multi-head deep learning models for reconstructing accelerated 3D MRI.
- Advised by Professor. Miki Lustig & Dr. Efrat Shimron.

**FORMLABS** *3D Printing Unicorn Company* — Boston, MA
***Software Engineering Intern*** — Sept 2020 - Dec 2021
- Developed real-time jerk-limited trajectory generation algorithm driven by material and laser optics constraints.
- Enhanced control systems and motion planning for Formlabs FLS/SLA 3D-printers.

## PUBLICATIONS + EXTRACURRICULAR

**'Direct Inversion'** *Optimization-Free Text-Driven Real Image Editing with Diffusion Models* — San Diego, CA
***First Author Preprint*** | ***Github Repo*** — Aug 2022 - Present
- *Abridged Abstract:* Using widely-available generic pre-trained text-to-image diffusion models, we demonstrate the ability to modulate pose, scene, background, style, color, and even racial identity in an extremely flexible manner through a single target text detailing the desired edit.

**OPEN-QUADRUPED** *Featured and Cited in Northwestern Research Paper (IEEE)* — San Diego, CA
***Personal Robotic Dog Project*** — May 2020 - Present
- Conceptualized and 3D-printed robot dog parts from scratch via FDM/SLS 3D-printing.
- Pioneered reinforcement learning on gait using IMU sensor for real-time balancing (Gazebo Physics Engine).
- Deployed object classification and tracking via YOLOv3 neural network trained on custom dataset.
- Implemented 3D environment localization and mapping using Visual ORB-SLAM + LIDAR.

**MACHINE LEARNING @ BERKELEY** *Machine Learning Organization @ UC Berkeley* — Berkeley, CA
***Researcher + External Relations Officer*** — Feb 2020 - Present
- Conducted active machine learning research using autoencoders as an image compression technique in an effort to outperform existing compression methods with 3% improved signal-to-noise reconstruction performance.