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.
- Architecting model-based evaluation systems, complex multi-hop workflows, training & fine-tuning models, optimizing information retrieval pipelines, cleaning massive corpora of data, semantic chunking, etc.

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 - Jul 2023

- *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 - Apr 2023

- 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 - Mar 2022

- 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.