Amit Israeli

Deep Learning Research Engineer

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🪪 Profile

Research Engineer with expertise in Deep Learning, Computer Vision, and Natural Language Processing. Skilled in developing real-time AI systems, and applying advanced deep learning techniques. Experienced in creating innovative solutions for automation and enhancing AI-driven processes. Passionate about translating cutting-edge research into practical applications.

📂 Projects

PopYou-Var Text ↗

- Fine-tuned the Visual AutoRegressive (VAR) model pretrained on ImageNet to generate task-specific Funko Pop!.
- Implemented a lightweight LoRA module alongside a frozen SigLIP image encoder to map image embeddings to text representations, enabling efficient text-to-image generation.

Few-Shot Segmentation with SAM and LoRA ↗

Adapted the Segment Anything Model (SAM) for few-shot segmentation tasks by integrating Low-Rank Adaptation (LoRA) techniques.

- Achieved superior class-specific segmentation quality and flexibility compared to existing methods like PerSAM.
- Trained the model on diverse datasets including COCO, Soccer, and Cityscapes, effectively handling varying sample sizes and class distributions.
- Enhanced the approach by incorporating foundation models such as CLIP and SigLIP to leverage class-oriented knowledge for improved performance.

CelebrityLook ↗

- Achieved 30fps performance on mobile devices, enabling smooth and responsive user experiences.
- Won the MobileXGenAI hackathon hosted by Samsung Next for innovative AI-driven mobile solutions.
- Implemented the paper *"Bridging CLIP and StyleGAN through Latent Alignment for Image Editing,"* combining multiple loss functions from foundation models and facial feature extractors to ensure high-quality image transformations.

💼 Professional Experience

Computer Vision and Deep Learning Research Engineer, *Pashoot Robotics* ↗

2023 May – 2024 Jun | Rehovot, Israel

- Advancing object detection and segmentation in challenging zero-shot/few-shot scenarios. I innovate on state-of-the-art (SOTA) models, including SAM(and it's different variants), yolo-world, grounding-dino dinov2, and CLIP to enhance their performance.
- Pioneering in Objects Tracking and precise 6D pose estimation leveraging synthetic data for increased accuracy.
- Employing 3D simulation using Blender and 3d reconstruction using methods such as NeRF, Gaussian splatting, and innovative image-to-3D methods.

Deep Learning Research Engineer, *NLPearl* ↗

2024 Jun – present | Tel aviv, Israel

- Developed real-time systems to detect conversational pauses and suggest optimal starter sentences for AI agents using fine-tuned LLMs, with specialized prediction heads.
- Experimented with various architectures, including encoder-based and decoder-pretrained models, applying LoRA and multi-stage training to enhance prediction accuracy.
- Designed a small language model (SLM) to generate task-specific tokens, enabling multi-task outputs from a single fine-tuned model for efficient real-time inference.
- Design solutions using pre-trained SOTA audio tokenization models and large language models (LLMs) tailored for audio-specific objectives.

🎓 Education

Ben-Gurion University,

Discontinued BSc in Data Science ↗

2020 – 2023 | Ben-Gurion, Israel

At the start of my final academic year, I transitioned to a professional role as an Algorithms Engineer at Pashoot Robotics, gaining valuable hands-on experience aligned with my career goals.