

# Amit Israeli

## Deep Learning Research Engineer

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### 👤 Profile

Deep Learning Research Engineer specializing in Computer Vision and NLP, with expertise in developing and optimizing state-of-the-art models. Skilled at translating research into impactful applications, combining academic insight with hands-on engineering to deliver innovative solutions.

### 📁 Projects

#### PopYou - VAR Text 📄

- Fine-tuned a Visual AutoRegressive (VAR) model with synthetic and real Funko Pop! custom datasets, adding a new *Funko Pop!* class.
- Designed a two-stage paradigm inspired by *Bridging CLIP and StyleGAN through Latent Alignment for Image Editing* (arXiv:2210.04506), reconstructing with SigLIP image embeddings, followed by text embeddings.

#### Few-Shot Segmentation with SAM and LoRA 📄

- **Adapted SAM and variants** (FastSAM, EfficientSAM, MobileSAM) with LoRA for few-shot segmentation, surpassing PerSAM in class-specific accuracy.
- **Designed systematic experiments** on COCO, Soccer, Cityscapes and other custom datasets, to evaluate performance across sample sizes, loss functions, and augmentation strategies.
- **Pruned and quantized SAM variants** to shrink model size by up to 80%, then fine-tuned LoRA to recover accuracy and enable real-time, on-device inference on edge hardware in a deployed real-world system.

#### CelebrityLook 📄

- **Won** the Samsung Next MobileXGenAI Hackathon for developing an innovative AI-powered mobile app.
- **Implemented** the paper "Bridging CLIP and StyleGAN through Latent Alignment" with multi-loss optimization, enabling high-quality facial image transformations.
- **Optimized** for deployment on mobile, achieving **30fps** performance for smooth, real-time user experiences.

### 📁 Professional Experience

#### Computer Vision Research Engineer,

*Reality Defender* 📄

2024 Jan - present

Developing multimodal deepfake and fraud detection models for video+audio, images, and text, with both classification and explanation capabilities.

#### Computer Vision Research Engineer,

*LuckyLab-Freelance* 📄

2024 Dec - 2025 Apr

- Built and deployed edge-optimized solutions for segmentation and object detection for production.

#### Deep Learning Research Engineer, *NLPearl* 📄

2024 Jun - 2025 Jan | Tel Aviv, Israel

- Developed real-time systems for conversational pause detection and response generation using fine-tuned LLMs.
- Explored various architectures with LoRA and multi-stage training to boost performance.
- Built a compact language model for multi-task outputs. Worked with SOTA audio tokenizers and LLMs for audio-focused tasks.

#### Computer Vision and Deep Learning Research Engineer, *Pashoot Robotics* 📄

2023 May - 2024 Jun | Rehovot, Israel

- Improved object detection and segmentation in zero/few-shot settings using foundation models like SAM, YOLO-World, Grounding DINO, and CLIP.
- Worked on object tracking and 6D pose estimation with synthetic data.
- Used Blender and 3D reconstruction techniques (NeRF, Gaussian Splatting, image-to-3D) for simulation tasks.

### 🎓 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.