

CURRICULUM VITAE SEPTEMBER 2026

Ahmad Droby

Ph.D. in Computer Science · Computer Vision &
Machine Learning · Algorithm Team Lead, Neolithics.ai

drobya.com

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Google Scholar

DBLP

Israel

SUMMARY

Computer-vision researcher and engineering lead with a doctorate in weakly-supervised learning, publishing since 2017 on segmentation, document analysis and multimodal imaging. I lead the algorithms team at Neolithics.ai, building production RGB + hyperspectral models for fresh-produce quality inspection — from dataset lifecycle to TensorRT deployment on edge hardware. Previously CTO and co-founder of Mirage Dynamics (AI-driven in-video advertising; co-inventor on its patent application for video signage replacement).

EXPERIENCE

Algorithm Team Lead · Neolithics.ai

2025 – present

- Designed and lead the Automatic Model Build Flow: data collection, dataset lifecycle, model building and deployment as one reproducible pipeline.
- Advanced CV and hyperspectral models for blueberries, avocados, grapes and garlic; multi-label and ordinal heads (CNN, ViT, hybrids) with severity-aware losses.
- Reproducibility and deployment standards: TorchScript / ONNX / TensorRT, Lightning + Optuna training pipelines, versioned datasets on DuckDB + GCP + zarr.

Senior Computer Vision Researcher · Neolithics.ai

2024

- Multimodal fusion network blending RGB with 224-band hyperspectral data for real-time quality prediction.
- End-to-end ML pipelines (ingestion, feature extraction, automated validation) and Jetson-ready inference via hybrid CNN / transformer models.

CTO & Co-Founder · Mirage Dynamics

2022 – 2024

- Built the system that analyses and replaces existing ads in video (detection, segmentation, tracking); dynamic insertion for live HLS streams; co-inventor on the patent application for video advertising signage replacement (WO 2021/090328).
- Contextual video analysis with captioning, NLP and zero-shot classification; hybrid AI + After Effects pipeline for premium insertions.

Teaching · Ben-Gurion University of the Negev

graduate years

- Taught and assisted computer-science courses; Teaching Excellence Award, 2022.

EDUCATION

Ph.D. in Computer Science · Ben-Gurion University of the Negev

2018 – 2023

Dissertation: *Using Weakly Supervised Learning to Solve Visual Computing Problems*. Advisor: Prof. Jihad El-Sana, Visual Media Lab.

M.Sc. in Computer Science · Ben-Gurion University of the Negev

2016 – 2018

Thesis: *Surface Detection and Deformation Detection in a Video Stream*.

B.Sc. in Computer Science · Ben-Gurion University of the Negev

2013 – 2016

SELECTED PUBLICATIONS

21 works · 369 citations · h-index 11 (Google Scholar, September 2026). Full list: drobya.com/#work.

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- 2026 **Incoherent Deformation, Not Capacity: Diagnosing and Mitigating Overfitting in Dynamic Gaussian Splatting**
- Ahmad Droby
- arXiv preprint · Preprint · first author
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- 2022 **Text Line Extraction in Historical Documents Using Mask R-CNN**
- Ahmad Droby, Berat Kurar Barakat, Reem Alaasam, Boraq Madi, Irina Rabaev, Jihad El-Sana
- Signals 3(3) · Journal · 33 citations · first author
-
- 2022 **Digital Hebrew Paleography: Script Types and Modes**
- Ahmad Droby, Irina Rabaev, Daria Vasyutinsky Shapira, Berat Kurar Barakat, Jihad El-Sana
- Journal of Imaging 8(5) · Journal · 9 citations · first author
-
- 2022 **Understanding Unsupervised Deep Learning for Text Line Segmentation**
- Ahmad Droby, Berat Kurar Barakat, Raid Saabni, Reem Alaasam, Boraq Madi, Jihad El-Sana
- Applied Sciences 12(19) · Journal · 9 citations · first author
-
- 2020 **Unsupervised Deep Learning for Handwritten Page Segmentation**
- Ahmad Droby, Berat Kurar Barakat, Boraq Madi, Reem Alaasam, Jihad El-Sana
- ICFHR 2020 · Conference · 11 citations · first author
-
- 2020 **Learning-Free Text Line Segmentation for Historical Handwritten Documents**
- Berat Kurar Barakat, Rafi Cohen, Ahmad Droby, Irina Rabaev, Jihad El-Sana
- Applied Sciences 10(22) · Journal · 30 citations
-
- 2018 **Text Line Segmentation for Challenging Handwritten Document Images using Fully Convolutional Network**
- Berat Kurar Barakat, Ahmad Droby, Majeed Kassis, Jihad El-Sana
- ICFHR 2018 · Conference · 54 citations

2017

VML-HD: The historical Arabic documents dataset for recognition systems

Majeed Kassis, Alaa Abdalhaleem, **Ahmad Droby**, Reem Alaasam, Jihad El-Sana

ASAR 2017 · Conference · 50 citations

AWARDS

- Teaching Excellence Award, Ben-Gurion University — 2022
 - 1st place, page-segmentation task, RASM2018 competition at ICFHR 2018 (Ben-Gurion University team)
 - CHE doctoral scholarship, Israel Council for Higher Education — 2019-2022
 - Hi-Tech & Bio-Tech doctoral entry scholarship — 2018 · Academic Excellence Award (M.Sc.) — 2018
 - CHE master's scholarship — 2016-2018
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SKILLS

RESEARCH

Computer vision · hyperspectral imaging · weakly / unsupervised learning · document image analysis · 3D Gaussian splatting · ordinal & multi-label classification

MODELLING

PyTorch · Lightning · Optuna · CNN / ViT hybrids · segmentation · tracking · zero-shot classification

DEPLOYMENT

TorchScript · ONNX · TensorRT · Jetson edge inference · HLS video pipelines

DATA & INFRA

Python 3.11+ · DuckDB · GCP · zarr · React / JS · Home Assistant · Klipper

LANGUAGES

Arabic (native) · Hebrew · English

LEADERSHIP

Team lead · founder / CTO · code-review standards · mentoring